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ICPC ABSTRACTS

Sessions in alphabetical order, posters at end

242 (717). Cardiac Rehabilitation (Date: 24th May 2005 — Free Paper Session 3.7 (Oral) — (13.30—15:00 Hours))
Aerobic Training and Insulin Sensitivity Improvement in Post Cardiac Surgery Diabetic Patients
A Lerro, A Di Patria, M Vigliotta, AM Melone
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Acknowledgments: Insulin resistance, is a common landmark of type II diabetes mellitus, obesity, especially with central adipose distribution, hypertrygliceridemia, arterial hypertension and the metabolic syndrome **patients**. The Insulin Resistance and Atherosclerosis Study, IRAS, had already evaluated the relationship between physical excercise intensity and insulin sensitivity demonstrating that those individuals who did not participate on any physical activities, showed a marked improvement on insulin sensitivity when submitted to 3-4 weekly hours of varying degree of physical activity (such as dancing, walking, bicycle).
Purpose: Evaluate if 6 weeks of an aerobic training program based on treadmill and/or bicycle training coupled with 4 consecutive weeks of kalistenic gymnastics with a progressive time lenghtening of up to 40 minutes, improves insulin resistance on diabetic patients admitted in our Rehabilitative Cardiovascular Sub-Intensive Unit in the 6°- 7° day of post cardiac surgery.
Methods: 466 diabetic patients, 242 males (52%) e 224 females(40%), admitted from January 2001 to September 2004, were subjected to serial glicemic controls before breakfast, before lunch and supper, two hours after lunch and supper through the use of Glucocard Memory PC-Menarini, in the first five and in the last three days of recovery. Moreover, at admission and dimission, total cholesterol, HDL and LDL cholesterol, triglicerides, and glycosylated hemoglobin values, insulin and oral hipoglicemic dosages were reported.
Results:

	Admission	dimission	T Student		Admission	dimission	T Student
Fasting Glicemia	181 mg/dl	104 mg/dl	P=0.0001	HDL—Cholesterol mg/dl	38	54	P=0.0001
Pre-lunch glicemia	186 mg/dl	122 mg/dl	P=0.0001	LDL—Cholesterol mg/dl	154	98	P=0.0001
Post-lunch glicemia	244 mg/dl	191 mg/dl	P=0.0001	Triglicerides mg/dl	184	143	P=0.0001
Pre-supper glicemia	209 mg/dl	141 mg/dl	P=0.0001	HbA1c mg/dl	11 l	8	P=0.0001
Post-supper glicemia	217 mg/dl	148 mg/dl	P=0.0001	Insulin	40	28	P=0.0001
Total Cholesterol	220 mg/dl	176 mg/dl	P=0.0001				P=0.0001

Conclusions: In our experience, independently of weight loss, physical activity immediately after cardiac surgery, even if not particularly intense, improves insulin sensitivity, and represents a key moment in the correction of cardiac risk factors.

259 (728). Cardiac Rehabilitation (Date: 24th May 2005 — Free Paper Session 3.7 (Oral) — (13.30—15:00 Hours))
Factors Associated with Failure of Smoking Cessation in Cardiac Rehabilitation Patients
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Objective of study: To examine the demographics and smoking habits of patients and their household as predictors of smoking cessation in graduates from the Cardiac rehabilitation programme.
Method: Patients who had undergone a comprehensive phase 2 cardiac rehabilitation programme with education on smoking cessation from 1995 to June 2002 were assessed with a telephone survey. Questionnaire of the survey consisted of twelve questions on possible predictors of smoking cessation. A descriptive analysis was performed.
Results: A total of 271 patients were surveyed and 29 refused to answer the questionnaire. There was a male preponderance M/F (212/59). Out of 112 male smokers, 95(85%) quitted, 11 decreased smoking while 6 remained same. The 6 female smokers all stopped smoking. The lighter smokers had a trend of higher quit smoking rate (92%) than heavier smokers (76%). Starting smoking before the age of 10 was associated with a higher fail rate (25%). Only 64% of the first attempt to quit smoking was successful in smoking cessation while the success rate was 88% if there was a previous attempt. 6/18(35%) fail to quit had smoker in the same household; 18/118(15%)in quitters, 24/118(20.3%) in all smokers and overall 39/242(16.1%).

Conclusion: The efforts of the cardiac rehabilitation programme resulted in a high smoking cessation rate. Younger age of starting smoking, no previous attempt to quit, heavy smoking and smoker in the same household were associated with low cessation rate.

267 (741). Cardiac Rehabilitation (Date: 24th May 2005 — Free Paper Session 3.7 (Oral) — (13.30—15:00 Hours))
A Proposal for Integrated Intervention Strategy of Smoking-Related Diseases: Stepwise Target Group Oriented Prevention (Stop)
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Cigarette smoking is by far the most important and the only manageable risk factor with major contribution to Cardiovascular diseases (CVD), Chronic Obstructive Pulmonary Disease (COPD), as well as the other smoking-related diseases. It affects respiratory function, which is a marker for heart attack and stroke COPD, lung cancer, and may also predict the overall smoking-related mortality. However, not all smokers develop clinically significant disease, so internal factors, probably, modify each individual's risk.
The purpose of this study is to contribute to CVD and other smoking-related diseases' prevention through a new integrated intervention strategy, by identifying groups at risk for rapid lung function decline and targeting them for preventive interventions.
Methods: The main determinants for smoking-related diseases based on a literature review are discussed and quantified. Based on the risk factors' analysis, an integrated intervention strategy: the Stepwise Target group Oriented Prevention (STOP) model is designed to realise risk-specific tobacco-control prevention.
Results: Apart smoking, the following determinants contribute to further lung function rapid decline: environmental air pollution, socio-economic status, genetic factors, reduced lung growth, airway hyperresponsiveness, low baseline lung function in adulthood. Combined with smoking, these factors make one's chances for getting the disease even greater. Smoking-prevention (education) and smoking cessation interventions may be applied to the target groups, identified according to the presence of one or more of known risk factors, and divided into age groups: the most critical ones, in terms of developing and preventing the disease, when different tobacco-control interventions are possible. The following age groups are identified: Prenatal babies and newborns (0 to 1 year), Children 1 to 5 years and Children aged 6 to 12 years, Teenagers 13 to 18, Young Adults: 25-40, Adults: 40-50. In the model stepwise identification mechanisms at different ages are suggested.
Conclusion: The Stepwise Target group Oriented Prevention (STOP) strategy is a step towards CVD and other smoking-related diseases prevention improvement, by shifting the attention from the '45+ symptomatic smokers' to rather earlier and preventable stages of the potential disease: from the disease treatment — to risk management.

324 (759). Cardiac Rehabilitation (Date: 24th May 2005 — Free Paper Session 3.7 (Oral) — (13.30—15:00 Hours))
Increasing Cardiac Rehabilitation Participation: An Analysis of Attendance-Decisions in Elderly, Female and Patients
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Introduction: Cardiac rehabilitation (CR) can improve mortality, morbidity and quality of life in patients with Coronary Heart Disease (CHD) irrespective of age, sex or social context. However, internationally, participation in programs is lower in the elderly, women, and socio-economically deprived (SED) patients. Little is known about the perspectives of these groups on CR.
Method: We have undertaken qualitative research utilizing interviews and focus groups to examine attendance decisions in a purposive sample of women, elderly patients and patient residing in SED communities (n=44, 27 males; 17 females; age range 50-86 years). To allow comparisons to be made the sample included both individuals who attended CR (n=20) and partial/non-attenders (n=24). Participants were interviewed about factors that increased and decreased their willingness and capacity to attend a menu-based, individualized and comprehensive program of hospital-base CR in the West of Scotland.
Findings: Irrespective of attendance levels, sex, age or income, individuals reported that the prospect of attending CR was daunting due to the perceived necessity of exercising in public with strangers and poor public transport/access to the CR location. Patients who attended CR were more likely to report that the potential benefits of CR outweighed perceived transport difficulties. These participants also reported that at an early stage in the program they gleaned additional motivation to attend from the social contact that CR provided with other patients who were seen to be facing similar health challenges and demonstrated that health could be improved by CR. In contrast, non-attenders were likely to report that they did not believe CR would benefit them, that their own behaviour could not influence CHD and that social isolation also decreased their willingness to attend. This isolation was related to anxiety about socializing, fear of public failure and fear of hospitals. Those who did not attend were also more likely to report that their capacity to participate was reduced by other social responsibilities and other physical/mental illnesses. While patients who attended also reported the presence of these factors, the influence of these factors was ameliorated by beliefs about the benefits of CR.
Conclusions and Recommendations: For women, the elderly and people from SED communities with CHD the prospect of attending CR is often daunting and is associated with a range of distinct social anxieties. While transport difficulties and social responsibilities appear to influence attendance, the influence on attendance of these factors may be reduced by strategies/interventions that: address common anxieties related to CR and social situations, foster patient's sense and knowledge that CHD can be controlled and involve peer support from other CHD/CR patients.

371 (823). Cardiac Rehabilitation (Date: 24th May 2005 — Free Paper Session 3.7 (Oral) — (13.30—15:00 Hours))
Innovations in Best Practices for Cardiovascular Disease Prevention and Control
Marie DesMeules, Nina Jetha, MaryPat Dressler (Public Health Agency of Canada)
Dexter Harvey (University of Manitoba)
Michael Goodstadt (University of Toronto)

A key component of our capacity to prevent cardiovascular disease (CVD) and promote healthy living conditions internationally, is our ability to gather and use relevant evidence of 'what works', commonly known as best practices. There is a need for more integrative and systematic approaches to interventions and strategies for CVD disease prevention and control, which are based on comprehensive and systematic best practices evidence related to community interventions and preventive care. Clinical practice guidelines provide accessible best practices evidence to guide preventive clinical practice. How-

ever, best practices evidence related to community-based interventions and preventive care are more difficult to develop, access, evaluate and implement.
The Canadian experience regarding the development of a comprehensive and systematic approach to Best Practices for Chronic Disease Prevention and Control will be shared. In particular, systematic reviews of best practices resources for chronic disease interventions (and for CVD in particular) with respect to methodology and content have been conducted. Moreover, a survey of developers and users of best practice information has been conducted to identify needs and barriers. This review focused on prevention interventions aimed at CVD, and its risk factors, such as tobacco use, physical inactivity, hypertension, hypercholesterolemia, obesity, and unhealthy eating, and where available, included information regarding interventions targeted for special populations (eg by gender, using a life course approach, by ethnicity, etc.). The next steps will include the development of a comprehensive best practices information system for chronic disease, which will address gaps in currently available resources. Gaps include inconsistency of methodology, limited scope with respect to the determinants of health, as well as limited information needed for implementation. Next steps will also include the development of a multidisciplinary collaborative network, a National Best Practices Consortium for Chronic Disease Prevention and Control, which will be responsible for consensus and dissemination of best practices. These approaches will facilitate knowledge exchange among researchers, policy-makers and practitioners about best practices.

423 (B). Cardiac Rehabilitation (Date: 24th May 2005 — Free Paper Session 3.7 (Oral) — (13.30—15:00 Hours))
Comprehensive Risk Factor and Lifestyle Trends Four Years after Cardiac Rehabilitation
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Cardiac rehabilitation is a proven therapy for patients with cardiovascular disease resulting in significant reductions in cardiovascular mortality compared to untreated controls. To maximize the benefits of cardiac rehabilitation, lifelong adherence to lifestyle behaviours and risk factor management is essential. A number of reports have indicated that risk factors and lifestyle behaviours deteriorate following cardiac rehabilitation. However, many of these were restricted to a small number of variables and limited follow-up duration.
Purpose: To investigate the changes in risk factors and lifestyle behaviours four years following cardiac rehabilitation.
Methods: A total of 151 men and women with ischemic heart disease, were recruited following completion of a comprehensive 16-week cardiac rehabilitation program. Participants returned after four years for a thorough risk factor and lifestyle assessment. Global risk was calculated by both the Framingham and PROCAM risk scores. Data were compared between baseline and four years using a pair-wise t-test.
Results: Of the 151 participants, 7 withdrew, 15 died and 10 were lost to follow-up leaving 119 participants for which data is available. After four years HDL-C, blood pressure, body mass index, waist circumference, percent fat intake increased significantly while maximal exercise capacity, physical activity and exercise self-efficacy decreased significantly and total cholesterol, LDL-C, triglycerides, glucose, smoking status, stress and presence of angina did not change significantly. As outlined in the table, there were no significant differences in global risk scores.

Table 1: Prevalence of risk factors in urban and rural women

	Baseline	Four Year Follow-up	P Value
Framingham Score	6.45±3.10	6.46±2.86	0.969
PROCAN Score	19.16±17.91	20.45±18.38	0.266

Discussion: These results indicate that the majority of risk factors and lifestyle behaviours targeted during cardiac rehabilitation deteriorated in the following years. Despite these changes in individual risk factors, global risk did not change indicating that the changes in risk factors may not be of clinical significance.

16 (525). Cardiovascular Risk Factors in Women (Date: 23rd May 2005 — Free Paper Session 2.7 (Oral) — (13.30—15:00 Hours))
NCD Behavioural and Biologic Risk Factors in Women of the Metropolitan Region in Chile. Monitoring Trends 1988-1998
Jorge Szot[1], Ximena Berrios[1,2]

Non communicable diseases (NCD) are the leading causes of death in Chile. To investigate trends of its major risk factors (RF) in female adult population 25-64 years old, prevalence surveys were conducted in 1988, 1992 and 1998 at the Metropolitan Region (MR) which represents 40% of the country population.
Method: Data collection was performed, with the same methodology in the three surveys, with an administered questionnaire to assess smoking habits (SMK), physical inactivity (PI) and with measurements of total cholesterol level (TC), blood pressure (BP), overweight (OW) and Obesity (OB), assessed with body mass index (BMI). Criteria to assess risk level and techniques were those internationally recommended. Results: Sizes of the study population in three cross sectional surveys were: 557, 307 and 438 in 1988, 1992 and 1998, respectively. Significant increase were found in prevalences (P) in 1992, regarding to 1988: high TC raised from 39% to 47%, high BP raised from 25% to 35%, BMI $\geq$ 25 raised from 44% to 59% and BMI $\geq$ 30 raised from 14% to 25%. More moderated changes in prevalences between 1992 and 1998 were observed. When looking at specific P by age in the younger group (25 $-$ 34 years old), we found a significant increase over the 10 years period: high TC, 12% to 24%, high BP, 5% to 15%, BMI $\geq$ 25, 33 to 64%, BMI $\geq$ 30, 8 to 33%. SMK was steadily around 40% and PI around 80%, without significant variations.
Conclusion: Adult female population, mainly between 25-34 years old, has increased dramatically their risks over a 10 years period. These results call for adopting urgent preventive measures to modify lifestyles and to stop the spiral of damage for coming.

35 (553). Cardiovascular Risk Factors in Women (Date: 23rd May 2005 — Free Paper Session 2.7 (Oral) — (13.30—15:00 Hours))
In Austria we do have Free Access to Health Care for Everybody — Do we need any Prevention Programs for Women?
M. Hochleitner [1,2,3], A. Bader[3], B. Wildt[3]

Heart death is the number-one killer of women in Austria. The Women's Health Office thus offered check-ups specially for women outside the hospital and doctor's office, namely as stop-ins. We offered health information material specifically for women and a 30-min. check-up covering blood pressure, BMI, cholesterol, blood glucose and a doctor's consultation. For

further treatment the women were referred to their primary-care physician.
In 2003, 304 women (average age 53.3a, ±16.7a) participated. A standardized questionnaire evaluated cardiac risk. Of the respondents 118(38.8%) reported a family history of risk, 234(79.9%) sports (minimum three times per week). 274(90.1%) reported a healthy diet including fiber, and 43(14.1%) smoked. The check-up also included a questionnaire for self-evaluation of health: 24(6.6%) reported not so good and only 4(1.1.%) poor health; 57(16.0%) reported pre-existing cardiocirculatory disorders. An out-patient women's health clinic was requested by 238(78.3%) women; 285(93,8%) wanted more health information specifically for women.
Values measured: Total cholesterol > 200 in 171(56.3%) women, blood glucose > 126 in 47(15.5%), blood pressure > 160/90 in 56(18.4%), BMI > 30 in 33(10.9%).
Ultimately, the great discrepancy between the risk profile given by the respondents and the measured values is not surprising. This shows there is a huge need for information, as reflected in the wish for an out-patient women's health clinic providing more specific health information. Despite Austria's free access to medical care for everyone, there remains a need for low-threshold health information specifically for women. category C7

36 (553). Cardiovascular Risk Factors in Women (Date: 23rd May 2005 — Free Paper Session 2.7 (Oral) — (13.30—15:00 Hours))

Turkish Women have the Highest Cardiovascular Risk in Europe — How to do Prevention in Turkish Immigrant Women in Austria

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Hypertension is one of the main risk factors for CVD (cardiovascular disease) in Austria, as well as in Turkey. Turkish are even estimated to have the highest CVD risk throughout Europe. In Austria we have a state-run health system with free access to medical care and many CVD prevention programs. Austria has a Turkish immigrant population of about 2.4%. What is the health care situation of Turkish women?
Our Turkish colleagues organised Turkish women meetings at 26 local mosques all over Tyrol and offered a Turkish-language prevention program including a Turkish questionnaire.
A total of 878 questionnaires were completed. Of the respondents 10% estimated their blood pressure as too high, 48.6% as normal and 41.3% had no idea. After the women's blood pressure was taken by our Turkish colleagues, 14.2% were seen to have hypertension, 43.4% normal blood pressure, while in 42.4% no blood pressure reading was taken. Thus, 47.2% of the women had estimated correctly, but 19.9% erroneously. From a list of the potential death causes, 54.1% of the women picked CVD as the leading cause of death. Of the women 70.7% reported being first-generation, 29.3% second-generation immigrants. Only 41.1% followed German-language newspapers or TV.
We find our female Turkish immigrants are well aware of the female CVD risk and interested in prevention programs, but they do not know their own CVD risk factors like hypertension. Most of the women did not know their blood pressure or misjudged it. These facts seem not to be based on cultural or religious differences. By contrast, we found nearly the same CVD prevention programs on the web sites of the Turkish Ministry of Health and the Turkish Medical Association as we provide for our population. We thus feel that language is a prime barrier to good health care, because Turkish translators are not available at the family doctor, where of course, prevention should start.

336 (788). Cardiovascular Risk Factors in Women (Date: 23rd May 2005 — Free Paper Session 2.7 (Oral) — (13.30—15:00 Hours))

Cardiovascular Risk Factors change in Women during a Decade. Its Distribution by Socioeconomic Situation. Metropolitan region, Chile, 1988-1998

Objective: Cardiovascular Disease Diseases(CVD) is the main cause of death in Chile. Its risk factors (RF) level has been assessed in the Metropolitan Region(MR) since 1988 through a line of research, launched by Catholic University in that year. The objective of this presentation is to show the trend of Hypertension and Obesity, 2 of the most relevant RF for CVD in women and its association with socio-economic situation (SES).
Method: Cross- sectional population samples were studied in 1988, 1992 and in 1998.They were independent samples of women 25-64 yrs. old. Data collection was done with same methods in the 3 surveys.. In this opportunity we report the findings in high blood pressure (HBP) and obesity(OB). .The criteria for HBP was the VI JNC 140/90 and for OB, a Body Mass Index (BMI) >=30. SES was assessed through Graffar method.
Results: A significant increase in global prevalences % (P)adjusted by age between 1988 and 1992 in HBP from de 25,2 % to 37,8%, and OB de 14,6 to 25%. This figures are steadily increasing till 1998, in both RF**:** HBP till 38.5 % and OB till 32,6%. Specific prevalence by age showed in the group 25-34 yrs.old, an elevation of HBP, from 5 a 15% and for OB from 8 to 33%. The most fequent co-existence of RF is the same trilogy during the period: Smoking, OB and Sedentariness . Regarding the association with SES, in 1988 global P for OB has a significant association with low classes. This association is stronger at the end of the decade. The global P of HBP, was associated with high and middle social class in 1988, but has changed through the period, increasing with lower social classes.
Discussion: There is a clear paralell trend to elevation of these 2 RF during the decade with an increasing association with lower SES. There is a special elevation of P% of HBP in young ages. This situation is alarming considering the long time of exposure.to risk.
Conclusion: It is possible to predict that the present epidemic of RF will be followed by a new epidemic of non-fatal and fatal CVD events involving younger age groups of lower SES, at least in women . More efficient CVD secondary prevention strategies are urgently needed and the application of CVD primary prevention strategies in young population.

358 (800). Cardiovascular Risk Factors in Women (Date: 23rd May 2005 — Free Paper Session 2.7 (Oral) — (13.30—15:00 Hours))

Cardiovascular Risk Profile of Asian Indian Women Residing in Urban and Rural Areas

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Objective: The burden of cardiovascular diseases (CVD) is rapidly rising in developing countries as a result of the epidemiological and nutrition transition. The current trend of urbanization, industrialization and lifestyle changes is leading to high prevalence of CVD risk factors, with women being a particularly vulnerable group. This study aims to study the profile of risk factors in Asian Indian women and to investigate the impact of urbanization.

Table 1: Prevalence of risk factors in urban and rural women

Risk factor	Prevalence in urban women (%)	Prevalence in rural women (%)	Odds Ratio (95% CI)
Hypertension	29.4	10.4	.28 (.21—.37)
Diabetes mellitus	14.2	2.7	.17 (.10—.27)
Overweight (BMI $\geq$ 25 kg/m^2)	49.8	13.2	.15 (.12—.20)
Abdominal Obesity (Waist circumference > 88 cm)	23.7	7.8	.27 (.20—.38)
Total cholesterol- HDL cholesterol ratio $\geq$ 4.5	50.6	31.2	.44 (.36—.54)
Hypertriglyceridemia (Fasting triglyceride $\geq$ 150 mg/dl)	39.4	30.5	.67 (.55—.82)
Current Smoking	2.3	20.6	11.24 (7.57—16.68)
Metabolic Syndrome (as defined by NCEP ATP III)	33.4	11.6	.26 (.20—.34)
10 year CHD risk > 20% by Framingham Score (%)	4.4	0.8	.17 (.07—.43)

Methods: We conducted a representative cross-sectional community-based study on women aged 35-64 years for studying cardiovascular risk factors. 1465 women from urban and 637 from rural areas were studied with help of questionnaires, laboratory markers and clinical measurements.
Results: The mean age of the women in both groups was 46.2 years. Other than current smoking, all other risk factors were more prevalent in urban women (see table 1). The odds ratio provided in the table represent the probability of presence of CVD risk factors in rural women as compared to urban women. The prevalence of risk factors increased steeply with increasing age in both groups. Urban women aged more than 45 years had an adverse CVD risk profile with diabetes prevalent in one-fifth of the women, hypertension and metabolic syndrome in two-fifth, and adverse total cholesterol- HDL cholesterol ratio and overweight prevalent in more than half.
Conclusion: This study reflects the high prevalence of CVD risk factors in these women with a higher prevalence of most risk factors in urban women as compared to rural women. Rural residence provides a protective effect for acquiring these risk factors for these women, which could be reflective of the adverse lifestyle in women of urban residence.

382 (835). Cardiovascular Risk Factors in Women (Date: 23rd May 2005 — Free Paper Session 2.7 (Oral) — (13.30—15:00 Hours))

Wine Drinking is Associated with Increased Heart Rate Variability in Women with Coronary Heart Disease

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Objective: Both increased heart rate variability (HRV) and moderate alcohol consumption are known protective factors in coronary heart disease (CHD), however their interrelationship is poorly documented. Here we tested the hypotheses that alcohol consumption is positively related to HRV in CHD and therefore cardiac autonomic activity is potentially implicated in the mediation of the favorable effects of moderate drinking.
Design, Settings and Patients: In this cross-sectional study women patients who survived hospitalization for acute myocardial infarction or underwent a revascularization procedure, percutaneous transluminal coronary angioplasty or coronary artery bypass grafting were included.
Main outcome measures: An ambulatory 24-hour ECG was recorded during normal activities. SDNN index (mean of the standard deviations of all normal to normal intervals for all 5-minute segments of the entire recording) and the following frequency domain parameters were assessed: total power, high frequency power, low frequency power and very low frequency power. Using a standardized questionnaire we evaluated self-reported consumption of individual alcoholic beverage types, of beer, wine and spirits. Other clinical characteristics, such as age, body mass index, smoking habits, history of diabetes mellitus, menopausal status, educational status, and treatment, were also assessed.
Results: Wine intake was associated with increased HRV both in time and frequency domain, independently of other clinical covariates (for instance ln SDNNI index was 3.89 among wine drinkers vs. 3.59 among wine non-drinkers in the multivariate model, p=0.014). In contrast, consumption of beer, spirits or the total amount of alcohol did not relate significantly to any of the HRV parameters.
Conclusion: Intake of wine, but not spirits or beer, shows a positive independent association with HRV in women with CHD. Our results may contribute to the understanding of the complex relation of alcohol use with CHD.

67 (593). Cardiovascular Risk Factors: Ethnic & Geographic Profile (Date: 22nd May 2005 — Free Paper Session 1.9 (Oral) — (13.30—15:00 Hours))

Burden, Rate of Screening and Awareness of Cardiovascular Risk Factors in a Geographically Limited Latin American Population

Francisco Lopez-Jimenez, Ector Ramirez-Barba, Elia Lara-Lona, Virend Somers, Randal Thomas Mayo Clinic, Rochester, MN, USA Department of Health, Guanajuato, Mexico

Background: Cardiovascular disease represents the number one cause of death in Mexico and many other countries in Latin America, but population-based data about the prevalence, level of awareness and knowledge of cardiovascular risk factors are lacking.
Methods: This was a cross-sectional, population-based survey of cardiovascular disease risk factors in the state of Guanajuato, Mexico, where sociodemographic characteristics are similar to the national average. Samples were selected by a two-stage cluster design. Neighborhoods identified as basic geographical statistical units were randomly selected from urban and rural populations, weighted for the socioeconomic characteristics of the entire state. The face-to-face interviews were performed at participants' home. Random blood glucose and total cholesterol measurements were performed using a semiquantitative analyzer using fingertip blood sampling. Nutritional and physical activity data were assessed using standardized questionnaires.
Results: Of persons contacted, 99.5% agreed to participate. From the 3083 adults included, 52% resided in rural communities. Cardiovascular risk factors were highly prevalent; 67.2%

had a BMI equal or greater than 25 kg/m^2, while 50.3% of women had central obesity; 18.3% of participants had hypertension, 18.3% had hyperlipidemia, 9.1% had diabetes mellitus, and 60% did not do any regular exercise; 27.3% of men reported current smoking. Regarding self-reported screening in the preceding 5 years, 17.6% of people had not had a blood pressure check, 83.6% had not had tested their serum cholesterol and 43.1% had not had a blood glucose check. The immense majority of subjects identified at least four out of the five major modifiable cardiovascular risk factors: diabetes mellitus, hypertension, hyperlipidemia, obesity and smoking, out of a list of multiple factors.
Conclusions: There is a high prevalence of cardiovascular risk factors in Mexico with suboptimal screening for diabetes, and dyslipidemia. These findings confirm the need for effective public health programs to decrease the current and increasing burden of cardiovascular disease in Latin America.

73 (593). Cardiovascular Risk Factors: Ethnic & Geographic Profile (Date: 22nd May 2005 — Free Paper Session 1.9 (Oral) — (13.30—15:00 Hours))

Coronary Artery Disease Risk Factors in Tallinn Adult Population

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Objectives: Coronary artery disease (CAD) is the main reason of death among the population of Tallinn, capital of Estonia. Monitoring of epidemiological situation of CAD allows making goal-directed preventive program in region of extreme conditions, as Estonia has the highest mortality of CAD in European Union.
Methods: We screened CHD risk factor profile in 4547 middle-aged (30-60 years, 1458 men and 3089 women) inhabitants in Tallinn during 1998-2003.
Every patient completed the cardiovascular risk assessment questionnaire; analyses of serum lipids and blood glucose and ECG were performed. We evaluated the cardiovascular risk by Coronary Risk Chart *(Prevention of Coronary Heart Disease in Clinical Practice, Eur.H.J.1998, 19, 1434-1503)*. Depending of the findings of cardiology examination the life style changes or additional treatment were recommended.
Results: 1013 individuals (22%) were cigarette smokers (the prevalence of smoking was 18% in women and 31% in men); 81 (2%) had blood sugar more than 9.0 mmol/l (2% women and 2% of men); 1738 (38%) had blood pressure more than 140/90 mmHg (35% women and 45% of men), 618 (14%) had total cholesterol more than 7.8 mmol/l (14% women and 13% of men).
To assess the 10 years risk level of CAD the European recommendations for prevention of coronary heart disease in clinical practice were used; the prevalence of CAD risk factors was compared between men and women. 10 years CAD risk was $\geq$20% in 49% of subjects (n = 2214); 42% of women and 62% of men.

	Women (n=3089)	Men (n=1458)	P
Cholesterol$\geq$7.8mmol/l	14%	13%	NS
Cigarette smoking	18%	31%	<0.01
Diabetes	2%	2%	NS
AD $\geq$ 140/90 mmHg	35%	45%	<0.05
Risk of CAD 20—$\geq$40%	42%	62%	<0.01
BMI 25—29	38%	49%	<0.05
BMI $\geq$30	16%	22%	<0.05

NS = non siginificant

Normal weight — body mass index (BMI) <25 had 1851 (41%; men 29% and women 46%); overweight - BMI 25-29 —1875 (41%; men 49% and women 38%); and obesity — BMI $\geq$30 — 821 (18%; men 22% and women — 16%).
Conclusion: The study indicated that there was high risk of coronary artery disease in Tallinn adult population for the years of 1998-2003 and the risk was higher in men than in women.

135 (648). Cardiovascular Risk Factors: Ethnic & Geographic Profile (Date: 22nd May 2005 — Free Paper Session 1.9 (Oral) — (13.30—15:00 Hours))

Cardiovascular Risk Factors Among Five Major Immigrant Groups in Oslo, Norway

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Objective: Few population based studies have described cardiovascular risk factors in immigrant populations in Western-Europe. We aimed to investigate ethnic differences in the classical cardiovascular risk factors of blood pressure, blood lipids and smoking among five of the major immigrant groups living in Oslo, Norway.
Methods: The Oslo Immigrant Health Study was a population based, cross sectional study conducted in 2002. A total of 7890 first generation immigrants residing in Oslo and born between 1942 and 1971 in Turkey, Iran, Pakistan, Sri Lanka and Vietnam were invited to the screening, of which 3019 attended. The screening involved a clinical assessment (including measurement of blood pressure and collection of non-fasting blood samples) and completion of a questionnaire. Results are age adjusted.
Results: The prevalence of high total cholesterol was greater in Turkish compared to Pakistani women, with no differences observed across ethnic groups among men. The prevalence of low HDL-cholesterol were 24% (95%CI: 19-29) and 25% (21-28) among Pakistani and Sri Lankan women compared to 9% (4-13) among women from Iran and Vietnam. In men, low HDL levels were more prevalent among those from Pakistan (24%, 18-29), Sri Lanka (26%, 23-29) and Turkey (25%, 20-30) compared to Vietnam (11%, 5-16). The prevalence of hypertension was greatest among Sri Lankan (23%, 20-27) and Pakistani (25%, 20-30) men and lowest in Iranian men (14%, 10-18). Turkish men had higher rates of smoking than all other ethnic groups (57%, 51-63), while Sri Lankan men smoked the least (18%, 14-22). Participants from Turkey and Iran reported the highest smoking rates among women (26% and 24% respectively) compared to less than 5% from the other ethnic groups. The prevalence of increased risk of coronary heart disease according to the Framingham risk score was 1.7 times higher in men from Turkey and Pakistan and twice as high in women from Turkey and Pakistan compared to men and women from Vietnam.
Conclusions: Participants born in Turkey, Pakistan or Sri Lanka tended to have higher rates of cardiovascular risk factors compared to Vietnamese and Iranian participants overall. This has implications for the planning of interventions among the different immigrant groups living in Oslo, Norway.

174 (669). Cardiovascular Risk Factors: Ethnic & Geographic Profile (Date: 22nd May 2005 — Free Paper Session 1.9 (Oral) — (13.30—15:00 Hours))

Cardiovascular Disease Risk Factors in Finland — 30 Year Trends

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Regular monitoring of cardiovascular disease risk factors and health behaviour has been an important component of the Finnish cardiovascular disease prevention programme. Population risk factors surveys have been carried out in Finland in five-year intervals since 1972. In the beginning, surveys were undertaken to evaluate the North Karelia Project (1972-1977). Later the surveys were conducted in connection with the WHO MONICA Project (1982-1992) and are nowadays called the National FINRISK Study (1997-2002).
An age and gender stratified random sample of population aged 25 to 64 years is drawn from the population register. The sample size has varied from 8000 to 12000 depending on the survey year and number of survey areas. The survey has included a self-administered questionnaire assessing health behaviour, physical examination and blood sampling for assessment of serum lipids. The serum cholesterol level in North Karelia (eastern Finland) was 6.9 mmol/l among men and 6.8 mmol/l among women. Since that the cholesterol levels have decreased significantly being 5.7 mmol/l among men and 5.6 mmol/l among women in 1997. During the last five years from 1997 to 2002 the decrease has levelled off. Diastolic and systolic blood pressure levels have decreased from 1972 to 2002 both in men and women. Systolic blood pressure in 1972 in North Karelia was 149 mmHg among men and 153 mmHg among women while in 2002 it was 137 mmHg and 132 mmHg respectively. Smoking rates among men have decreased significantly until 1997. Among women smoking slightly increased until 1992 and levelled off in 1997. During the last five year period a slight increase in smoking rates can be seen among both genders. The risk factor trends in other survey areas have been very similar.
These recent observations in cardiovascular risk factors in Finland create a challenge for sustaining the reduction of still too high risk factor levels through strengthening the existing prevention and health promotion and by developing new approaches. This kind of monitoring gives good evidence for national policy for effective guidance of activities.

187 (678). Cardiovascular Risk Factors: Ethnic & Geographic Profile (Date: 22nd May 2005 — Free Paper Session 1.9 (Oral) — (13.30—15:00 Hours))
Cardiovascular Risk Behaviours in an Urban Romanian Community
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Background: In spite of preventive measures, the cardiovascular risk factors and behaviours didn't change in Europe as it was demonstrated by EUROASPIRE I and II studies. Also, in Romania the morbidity and mortality through cardiovascular disease strongly increased during the last 15 years.
Methods: Cardiovascular risk behaviours were studied in 1997 and in 2003 in Zorilor district Cluj-Napoca, Romania (20.000 inhabitants) using representative samples of 500 subjects each, aged 18-81 years, 51% males and 49% females. The cardiovascular risk factors were also determined in representative samples of 150 subjects each.
Results: Smoking habit decreased from 45.2% to 30.5% ($p<0.05$) in both men (48.3 vs 34.4%) and women (43.1 vs 28.3%) mainly in subjects over sixty and by the increasing of abstinents (from 49.8 to 10.2% $p>0.05$). Physical inactivity increased from 26.3% to 42.1 % ($p<0.05$) especially in women and in people over fourty. The diet was characterized by the decrease of daily fat consumption (from 29.77% to 10.54% $p<0.05$) and of salt abuse (from 58.3% to 41.52% $p<0.05$) and the increase of concentrated sweets consumption (from 40.44% to 49.7% $p<0.05$). Daily alcohol consumption decreased from 13.2% to 1.41% ($p<0.05$) but the data must be cautiously considered. During the same period the prevalence of hypertension decreased from 38.63% to 31.8% ($p>0.05$), but obesity increased from 20.54% to 27.56% ($p<0.05$) and also did the prevalence of dyslipidaemia (TC >200mg%- from 39.39% to 52.85%, $p<0.05$; HDL-C<40mg% from 10.6% to 41.41%, $p<0.01$).
Conclusion: during a six year period the risk behaviours didn't significantly change, except for smoking, explaining partially the high prevalence of cardiovascular risk factors and of extremely high cardiovascular morbidity in our country.

356 (798). Cardiovascular Risk Factors: Ethnic & Geographic Profile (Date: 22nd May 2005 — Free Paper Session 1.9 (Oral) — (13.30—15:00 Hours))
Risk Factors for Cardiovascular Diseases: A Comparison of Prevalences in Porto Alegre, Brazil, and in the USA
Flávio Fuchs, Sandra Fuchs, Leila Moreira, Miguel Gus, Mário Wiehe

Objective: To compare the prevalence of risk factor for cardiovascular disease (CVD) in Porto Alegre, Brazil and in the USA.
Methods: Sampling: cross-sectional studies of population-based samples of adults living in Porto Alegre and in the USA (*National Health and Nutrition Examination Survey, 1999-2000*).
Risk factors: hypertension (blood pressure $\geq$140/90 mmHg or use of blood pressure-lowering drugs), current smoking, abusive consumption of alcoholic beverages, sedentary, obesity (BMI $\geq$30 kg/m2), overweight (BMI $\geq$25 kg/m2) and few years at school.
Analysis: comparison of standardized (for age and gender) prevalence of risk factors, with the USA population as reference.
Results: Fewer years at school, hypertension and smoking were more prevalent in Porto Alegre and sedentary, alcoholic beverage consumption, obesity and overweight were more prevalent in the USA ($P<0.001$), both for men and women (table).

Standardized prevalence of risk factors for CVD in Porto Alegre and in the USA (%)

	<11 years at school	Hypertension	Current smoking	Alcohol abuse	Sedentary	Obesity	Overweight
POA-men	50.3	36.5	38.8	14.9	63.5	12.3	53.0
POA-women	57.8	35.9	27.3	8.0	72.3	15.9	45.6
USA-men	39.9	29.8	24.7	15.5	79.7	26.2	65.3
USA-women	37.3	33.0	16.9	8.2	79.3	37.4	66.8

Conclusion: The difference in the prevalence of risk factors for CVD in the USA and Porto Alegre may explain the difference in the incidence rate of CVD, particularly of coronary heart disease and stroke.

32 (551). Congestive Heart Failure (Date: 22nd May 2005 — Free Paper Session 1.4 (Oral) — (13.30—15:00 Hours))
Nutritional Anemia: - A Preventable Etiology of Heart Disease Among Young and Adolescent Persons
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Context: The health status of rural agricultural population of this region of India is far from satisfactory due to poor socio-economic conditions, which has led to nutrition related anemia and its systemic effects.
Aim and Objectives: To find out the Hemoglobin(Hb) pattern among those with heart failure due to anemia, to access their socio – demographic and anthropometric parameters and to find out their gender variation.
Setting: A tertiary care multispeciality teaching hospital affiliated to Madurai Medical College, Madurai, Tamilnadu, India.
Material & Method: A prospective study was designed after Institutional Ethical clearance and carried out during April to August 2004 after an informed consent. Of the 192 cases of hospitalized Congestive Cardiac Failure (CCF), 60 were solely due to nutritional anemia (in whom underlying other causes of CCF were ruled out by investigations). These 60 cases of CCF were considered as the subject of the study. None of female was pregnant during the study. Their socio-demographic, anthropometric and clinical data were collected, tabulated and analyzed.
Findings: There were 19 males and 41 females .The female preponderance was significant. Their age range from 15-45 with median and mean being 35 and 33.35 respectively. Significant numbers were from rural area (urban: rural =1:3). They were manual workers with income less than 12US$ /month. Their BMI was - below 18 in - 8 (13.333%); 18-23 in 37 (61.667%) & more than 23 in 15(25%). The Hemoglobin pattern ranged from 2-7.8 . It was below 3 in 8(13.33%), 3.1 to 6 in 36(60%) and 6-7.8 g% in 16 (26.667%). Their mean and median were 5.07 & 4.7 g% respectively.
Conclusion: Anemia was the sole cause for CCF among 31% of the hospitalized CCF patients. Anemia was noticed significantly more among young women and their BMI was far below than their male counterparts. These women sacrificed the available food for their family members and involved in day to day activities, which might probably have contributed to nutritional anemia and CCF. Hence early diagnosis, health education, awareness and socio-economic support for them are the need of the day, to implement health promotional and disease prevention strategies.

54 (580). Congestive Heart Failure (Date: 22nd May 2005 — Free Paper Session 1.4 (Oral) — (13.30—15:00 Hours))
Volume Time Curves Generated from Cardiac Magnetic Resonance Imaging can Detect early Diastolic Dysfunction in Morbid Obesity
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Obesity increases the risk of developing cardiac systolic dysfunction and heart failure. Diastolic dysfunction may precede this, but is difficult to accurately quantify in the morbidly obese with echocardiography. Diastolic dysfunction can be detected in the morbidly obese with high sensitivity using Volume-time curves (VTCs) derived from cardiac magnetic resonance (CMR) imaging. Left ventricular function of 20 normotensive obese subjects, mean Body Mass Index (BMI) 43kg/m^2 was compared to 10 age- and sex-matched controls (mean BMI 24kg/m^2). Using a 1.5 Tesla Siemens Sonata MR system, a short axis stack of contiguous images was acquired and LV end-diastolic volume (EDV), LV end-systolic volume (ESV), left ventricular ejection fraction (LVEF), stroke volume (SV) and left ventricular mass (LVM) measured. Using a mid cavity slice, all phases of the cardiac cycle were interrogated by manually contouring the endocardial border. VTCs were created and the peak ejection rate (PER), peak-filling rate (PFR), systolic time from EDV to PER (TPER), and diastolic time from ESV to PFR (TPFR) calculated. Cardiac LV volumes were similar between groups. LVM was greater in the obese (149±34 vs. 111±33 g, $p<0.01$) and correlated positively with BMI ($r=0.5$, $p<0.01$), and fat mass ($r=0.5$, $p<0.05$). VTCs showed significant differences although heart rate was similar: PFR in the obese was half that of controls (104±91 vs. 197±87ml/ms, $p<0.001$) and TPFR significantly prolonged for the obese (226±113 vs. 120±97ms, $p<0.01$). A strong positive correlation existed between BMI and TPFR ($r=0.6$, $p<0.001$), and LVM and TPFR ($r=0.5$, $p<0.001$). Indices of systolic function (PER and TPER) showed no significant differences. Using VTCs, we found a significant correlation between increased BMI, LVM and diastolic dysfunction in uncomplicated morbid obesity. VTCs provide a novel method of quantifying early diastolic dysfunction in the morbidly obese and may be a useful tool in identifying early cardiovascular risk in obesity.

77 (607). Congestive Heart Failure (Date: 22nd May 2005 — Free Paper Session 1.4 (Oral) — (13.30—15:00 Hours))
Thyroid Function and Plasma Concentrations of Brain Natriuretic Peptide in Patients with Clinically Manifest Heart Failure
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Background: Thyroid hormones strongly influence cardiovascular system. Namely, ventricular filling, cardiac output and myocardial oxygen consuption could be impaired by overt thyroid dysfunction. The aim of our study was to establish whether also the mild changes in thyroid status may influence the degree of heart failure (cardiac output), quantified by plasma brain natriuretic peptide (BNP), in patients with clinically manifest heart failure.
Methods: 208 patients (m129, f79, mean age 68.6±2.36) with clinically manifest heart failure, selected from Czech sample of EuroHeart Failure survey. Serum thyreostimulating hormone (TSH), free thyroxine (fT4) and plasma BNP were estimated from frozen samples, differences were tested by Mann-Whitney U test and multiple logistic regression.
Results: BNP concentrations by fT4 deciles had J curve distribution. Patients with fT4 in the range 11.9-14.6 pmol/l had significantly lower BNP (718±70.4 pg/ml), then those with fT4$\leq$ 11.8 [bottom two deciles](1236±223.6 pg/ml; $p<0.03$) and those with fT4 over 14.6 pmol/l [top four deciles] (1192±114.9pg/ml; $p<0.0002$) These differences remain significant, also if adjusted for age and gender. On the other hand, no relation was found between TSH deciles and BNP concentrations.
Conclusion: In our study we found, that patients with mild changes in fT4 concentration (still within the nomal ranges) have impaired cardiac output, measured by its biological indicator. Patients with manifest heart failure probably fair better, if their fT4 levels are within more optimal limits. Both, low-normal and high-normal fT4 can contribute to the prognosis of heart failure.

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79 (608). Congestive Heart Failure (Date: 22nd May 2005 — Free Paper Session 1.4 (Oral) — (13.30—15:00 Hours))
Analysis of the Heart Failure Drug use in Outpatients Population
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Purpose: We evaluated the preference for drug use as monotherapy or as combined treatment in patients (pts) with heart failure (HF) according to the physicians' choice using a physicians' anonymous questionnaire.
Design and methods: 801 physicians (601 general practitioners / GPs/,109 outpatient cardiologists, and 91 in-hospital doctors from cardio-vascular departments) took part in the study. The questionnaires were filled in between September and December 2003.
Results: We founded rather surprising data about the HF drug treatment.
1) The preference for drug utilization as monotherapy or as combined therapy was:
- for GPs — ACE-inhibitors (ACE-i) — 39.5%; diuretics (D) — 23.5%; digoxin (Dig) — 11%, beta-blockers (BB) — 9.6%; nitrates (N) — 2.4%, calcium channel blockers (CCB) — 1.4%; others — 12.6%;
- for outpatient cardiologists — ACE-i — 41.1%; D — 21.6%; Dig — 12.5%, BB — 9.6%; N — 4.1%, CCB — 1.1%, others — 10%;
- for inhospital physicians - ACE-i — 42.2%; D — 27.2%; BB — 10.9%; Dig — 10.1%, N — 3.3%, CCB — 1.2%; others — 5.1%;
2) The most effective HF drug class for monotherapy according to the questionnaire was as follows:
- for GPs —D — 25.9%; ACE-i — 25.7%; BB — 15.9%; Dig — 14.5%, N — 5.4%, CCB — 1.9%; others — 10.7%;
- for outpatient cardiologists — D — 27.4%; ACE-i — 27.1%; BB — 17.7%; Dig — 15.3%, N — 5.3%, CCB — 1.2%; others — 6%;
- for inhospital physicians - ACE-i — 27.2%; D — 26.8%; BB — 15.7%; Dig — 15.1%, N — 6.7%, CCB — 1%; others — 7.5%.
GPs' pts were treated on average by 3,05 drugs, outpatient cardiologists' pts — 2,94 drugs and inhospital physicians' pts — 3,27 drugs.
Conclusions: Bulgarian physicians currently have changed their choice of HF treatment scheme following the new guidelines. The diuretics have been shifted to the second line drug choice after the ACE-inhibitors. Dig was still preferred to BB as a drug class of the treatment choice. Despite of the large evidence of BB efficiency provided by the big clinical trials their use was still underestimated. We suggest the ACE-i approval as a drug class of first choice to be accepted by the most part of the physicians because of the well-known efficiency of ACE—inhibitors in reducing cardiovascular morbidity and mortality.

158 (663). Congestive Heart Failure (Date: 22nd May 2005 — Free Paper Session 1.4 (Oral) — (13.30—15:00 Hours))
Congestive Heart Failure in Octogenarians
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Objectives: To explore the characteristics of heart failure (HF) in octogenarians and establish if there is any difference with a younger population.
Methods: A total of 180 consecutive inpatients with HF were studied between April 2001 and September 2002, 115 older than 80 years (Group I), and 65 between 65 and 80 (Group II). We analyzed the following factors: 1) acute coronary syndromes; 2) arterial hypertension; 3) infections; 4) pulmonary thromboembolism; 5) arrhythmia's; 6) noncompliance of treatment; 7) anemia; 8) renal failure; and 9) unknown causes that precipitate HF and compare this occurrence in the two groups.
Besides, we compared the etiology, type of ventricular dysfunction, functional class, comorbidities, cardiac rhythm and treatment between both groups. An Uni. and multivariate analysis was carried out using the Epidat and Statistix.
Results: In univariate analysis, we found a higher percentage (74,78 vs 52.05%) of women and a higher incidence of diastolic dysfunction (40 vs 21%) in group I respect to group II. In the younger group, we found a higher incidence of dyslipemia (Dy), 24 vs 11%, smoking (Sm) 42 vs 16%, chronic pulmonary obstructive disease (COPD), 8 vs 7%, alcoholism (Al) 11 vs 1%) and chronic ischemic hear disease (CIHD) 53 vs 37%, respectively. After multivariate analysis, only Dy, Sm, Al and claudicating of the lower extremities were higher in group II, while in group I diastolic HF represents the most frequent type of dysfunction.
Conclusions: Certain characteristics of HF in octogenarians are different from those of a younger group. By multivariate analysis, a higher incidence of diastolic dysfunction was observed in the group of patients older than 80 years, while in the younger group Dy, Sm, Al, and claudicating of the lower extremities were higher.
Keywords: Heart failure, Octogenarians, Diastolic dysfunction.

160 (663). Congestive Heart Failure (Date: 22nd May 2005 — Free Paper Session 1.4 (Oral) — (13.30—15:00 Hours))
Heart Failure in an Older Population: Treatment
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The aim of this study was to analyze the type of pharmacological treatment of heart failure (HF) in octogenarians and establish if there is any difference with a younger population.
Methods: A total of 180 consecutive inpatients with HF were studied between April 2001 and September 2002, 115 older than 80 years (Group I), and 65 between 65 and 80 (Group II). We analyzed the following pharmacological agents: 1) IECA, 2) beta blockers (Bb), 3) calcium channel blockers (Cchb), 4) spironolactone (S), 5) diuretics (D), 6) nitrates (N), 7) aspirin (A) 8) amiodarona (Am) 9) oral anticoagulants (Ac), 10) digoxin (Di) and 11) diet. Clinicians and cardiologists treated 23 and 30.1 % of patients respectively. Uni and multivariate analysis was carried out using the Epidat and Statistix.
Results: IECA, was used in 47.8 % vs 46.5 %; Bb 19.3 % vs 24.6 %; Cchb, 14.7 % vs 17.7 %; S 9.5 % vs 13.6 %; D, 43.1 % vs 49.2 %; N, 13.8 % vs 13.6 %; A 31.3 % vs 32.8 %; Am, 13 % vs 16.4 %; Ac 8.6 % vs 21.9 %; Di, 20 % vs 20.5 %; diet 34.7 % vs 34.2 % in group I and Group II respectively. By uni and multivariate analysis there were no differences between groups.
Conclusions: In this group of patients with heart failure there were no differences in the utilization of a wide spectrum of pharmacological agents between patients older and younger of 80 years. At the same time there were a clear underutilization of IECA and Betablockers.
Keywords: Heart failure, Octogenarians, Pharmacological agents.

163 (661). Congestive Heart Failure (Date: 22nd May 2005 — Free Paper Session 1.4 (Oral) — (13.30—15:00 Hours))
Heart Failure in Octogenarians: Etiology and Type of Dysfunction
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The aim of this study was to analyze the etiology and type of heart failure (HF) in octogenarians and establish if there is any difference with a younger population.
Methods: A total of 180 consecutive inpatients with HF were studied between April 2001 and September 2002, 115 older than 80 years (Group I), and 65 between 65 and 80 (Group II). We analyzed the following etiologic factors: 1) coronary heart disease, 2) hypertension; 3) valvular heart disease, 4) chagasic cardiomyopathy, 5) idiopathic, 6) others, and systolic vs diastolic. Uni and multivariate analysis was carried out using the Epidat and Statistix.
Results: The etiologic factors were: coronary heart disease, 37.3 % vs 53.4 % (p<0.03, CI o.270.99) by univariate analysis; hypertension, 58.2 % vs 43.8 % (p=ns); valvular heart disease, 26.9 % vs 23.2 % (p=ns); 4) chagasic cardiomyopathy, 0% vs 2.7 (p=ns); 5) idiopathic, 11.3 % vs 6.8 % (p=ns); others 3.4 % vs 5.4 % (p=ns), systolic 35.6 % vs 47.9 % (p=ns), diastolic 40.8 % vs 21.9 % (p <0.01, IC 0.010.87 by univariate and p<0.02 by multivariate analysis in group I and Group II respectively.
Conclusions: In this group of patients with heart failure there were no differences in the etiologic factors that could produce heart failure between patients older and younger of 80 years. Octogenarians had however a higher prevalence of diastolic failure.
Keywords: Heart failure, Octogenarians, Etiology.

165 (661). Congestive Heart Failure (Date: 22nd May 2005 — Free Paper Session 1.4 (Oral) — (13.30—15:00 Hours))
Octogenarians with Heart Failure: Risk Factors
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The aim of this study was to analyze the occurrence and type of cardiovascular risk factors and comorbidities in octogenarians with heart failure (HF) and establish if there is any difference with a younger population.
Methods: A total of 180 consecutive inpatients with HF were studied between April 2001 and September 2002, 115 older than 80 years (Group I), and 65 between 65 and 80 (Group II). We analyzed the following risk factors: 1) hypertension, 2) dyslipidemia, 3) smoking and 4) diabetes. Besides we analyzed the following comorbidities: 1) chronic obstructive pulmonary disease, 2) stroke, 3) chronic renal failure, 4) alcoholism, 5) gout 6) claudicating of lower extremities, and 7) others. Uni and multivariate analysis was carried out using the Epidat and Statistix.
Results: In multivariate analysis, we found a higher percentage of dyslipidemia 11.3 % vs 24.6 % (p<0.02); smoking, 16.5 % vs 42.4 % (p <0.01); alcoholism, 0.8% vs 10.9 % (p<0.01); and claudicating of the lower extremities, 6 % vs 15 % (p < 0.02), in group I respect to group II.
Conclusions: Certain cardiovascular risk factors and comorbidities are different in our population of octogenarians with respect to our younger group with heart failure. By multivariate analysis, a lower incidence of dyslipidemia, smoking, alcoholism and claudicating of the lower extremities was observed in the group of patients older than 80 years.
Keywords: Heart failure, Octogenarians, Risk factors, Comorbidities.

185 (678). Congestive Heart Failure (Date: 22nd May 2005 — Free Paper Session 1.4 (Oral) — (13.30—15:00 Hours))
Low Serum Lipid Fractions and Anaemia - Risk Factors for Heart Failure Patients
Dumitru Zdrenghea, Dana Pop, Mirela Cebanu ESC ESC

Background: Both anaemia and low serum lipid fractions, especially cholesterol, were correlated with a worse prognosis and with an increased mortality in heart failure patients; however their relationship wasn't studied until now.
Methods: We studied the serum lipids profile, haemoglobin (Hb) and hematocrit (Ht), in 303 heart failure patients (p), 261 ischaemic and 42 nonischaemic, 240 males and 63 females, aged 22-81 years. There were also considered the functional NYHA class and the 2 D echo left ventricular ejection fraction (LVEF).
Results: Anaemia, defined as Ht$\leq$38 % in females and $\leq$41% in males, was registered in 45.18% of the patients. The prevalence of anaemia was the same in ischaemic (44.64%) and nonischaemic (45.47%) p., but significantly increased from 42.85%, in NYHA III p., to 52.77% (p<0.05) in NYHA IV p., and also increased from 40.43% in p. with LVEF >30% to 66.66% in p. with LVEF <30% (p<0,01). Also, total cholesterol (TC), LDL cholesterol (LDLC) and triglycerides (TG) were lower in NYHA IV p. (159,4±10; 103.2±1; 88, 5 ±9 mg%) than in NYHA IIIp (186±18; 124.6±4; 101, 73±9 mg%), p<0,05 and in p. with LVEF<30% (147±15; 98, 8±10; 69, 6±6, 8 mg%) than in p. with LVEF >30% (180, 9±18; 128±13;104, 5±10 mg%) p<0,05.
The data suggest there is a relationship between anaemia and decreased serum lipid fractions in severe heart failure, even if only a weak positive correlation was registered between Hb and TC (r = 0,24), LDLC (r = 0,273) or TG (r = 0,287) The correlation could be the result of the metabolic disturbances in advanced heart failure, but a mutual interconditioning cannot be excluded.
Conclusion: Anemia and lower serum lipid fractions are risk factors for heart failure patients. They are both correlated in patients with severe heart failure, but the nature of this correlation has yet to be established.

107 (626). Coronary Heart Disease: Risk Factors (Date: 22nd May 2005 — Free Paper Session 1.2 (Oral) — (13.30—15:00 Hours))
Does post-load hyperglycemia modify the association between high cholesterol and CHD Death?
Mercedes Carnethon, Philip Greenland, Martha Daviglus, Daniel Garside, Renwei Wang United States of America

High cholesterol and hyperglycemia are each established risk factors for CHD. Recent studies suggest that the combination of non-diabetic hyperglycemia and high cholesterol increases the risk of developing CHD beyond the independent effects. We tested whether post-load hyperglycemia modified the association between total cholesterol and 31-year CHD mortality in men and women, ages 18-74 at baseline (1967-73), from the Chicago Heart Association Detection Project in Industry study. Baseline plasma glucose was measured 1-hour after a 50-g oral glucose load; participants with glucose>200 mg/dL, MI, self-reported diabetes, or on diabetes medication were excluded. Fatal CHD was determined by death certificate (ICD 8/9: 410-414, ICD 10: I20-I25). Effect modification was evaluated using a multiplicative interaction term between glucose and serum cholesterol in a Cox proportional hazards model. For men (n=7855) and women (n=6285) aged 40-59, CHD death rates per 10,000 person-years were 49 and 25, respectively. In a model with both glucose and cholesterol, the relative risks (RR) of CHD death were 1.1 (95% CI: 1.0, 1.3) per 47 mg/dL (1 SD) increase in glucose for men and 1.4 (95% CI: 1.2, 1.7) per 43 mg/dL for women. The RR of CHD death was 1.3 (95% CI: 1.2, 1.5) per 37 mg/dL (1 SD) of cholesterol for men and 1.4 (95% CI: 1.2, 1.7) per 40 mg/dL for women. There was no evidence of interaction between glucose and cholesterol for men (p = 0.69) or women (p=0.13) with or without adjustment for CHD risk factors. RR for the association between cholesterol categories and CHD was similar by categories of glucose (Table). Results are similar in men and women aged 18-39 and 60-74 (not shown). Hyperglycemia and high cholesterol were each asso-

RR (95% CI) of CHD by Cholesterol and Post-Load Glucose, Baseline Ages 40-59

		Model 1 (Unadjusted)		Model 2*	
Glucose	Chol (mg/dL)	Men	Women	Men	Women
Normal †	≤199	1 (Referent)	1 (Ref)	1 (Ref)	1 (Ref)
	200 - 240	1.4 (1.1, 1.7)	1.6 (1.2, 2.3)	1.2 (1.0, 1.5)	1.2 (0.9, 1.7)
	240 - 260	1.7 (1.3, 2.1)	1.7 (1.1, 2.7)	1.4 (1.1, 1.8)	1.1 (0.7, 1.7)
High ††	≤ 199	1 (Ref)	1 (Ref)	1 (Ref)	1 (Ref)
	200 - 240	1.4 (0.97, 1.9)	1.2 (0.7, 1.9)	1.3 (0.9, 1.8)	0.9 (0.6, 1.5)
	240 - 260	1.5 (0.98, 2.4)	1.7 (1.0, 3.0)	1.5 (0.97, 2.4)	1.2 (0.7, 2.1)

*Adjusted for age, race, SBP, BMI, smoking, education.
† Men: 40-159 mg/dL, Women: 36-151 mg/dL
†† Men: 160-200 mg/dL, Women: 152-200 mg/dL

ciated with elevated CHD risk and there was no multiplicative effect modification in healthy adults.

171 (668). Coronary Heart Disease: Risk Factors (Date: 22nd May 2005 — Free Paper Session 1.2 (Oral) — (13.30—15:00 Hours))

The Predictive Values of Lipids and Lipoproteins on the Incidence of Ischemic Cardiovascular Disease in Middle Aged Chinese Population

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(Abstract) Objective: The prospective evidence on the associations of cardiovascular disease with dyslipidemia was still rear in China. The purpose of the study is to evaluate the predictive effect of serum lipids and lipoproteins on the incidence of ischemic cardiovascular disease(ICVD) in middle aged Chinese population.
Methods: This prospective study is based on the PRC-USA Collaborative Study on Cardiovascular and Cardiopulmonary Epidemiology (1981~2001). Four cohorts located in Beijing and Guangzhou, urban and rural were included in the study. The baseline data was collected in 1983 and 1984 and the follow up ended in 2000. The follow up time in average was 15.9 years. A total of 10222 individuals (4963men and 5259women) from the 4 coholts, with baseline age 35-59 years old was included. The endpoint was events of ischemic cardiovascular disease (ICVD), including coronary heart disease and ischemic stroke diagnosed with the WHO MONICA criteria.During the follow up period, 378 ICVD cases were diagnosed, including 96 with CHD, 270 with ischemic stroke cases and 12 with both CHD and ischemic stroke.
Results: The results of multivariate Cox regression analyses indicated that with adjusting for age, sex, SBP, diabetes and smoking, the relative risk for ICVD incidence was 1.34(1.00~1.80), 1.61 (1.15~2.26) and 1.70.(1.21~2.37) in TC level 5.17~5.67mmol/L, 5.68~6.19 mmol/L, ≥6.20 mmol/L and 1.62(1.15~2.27),1.67(1.17~2.40) in LDL-C level 3.62~4.12 mmol/L, ≥ 4.13 mmol/L respectively, which was significantly higher than their reference group (TC<5.17mmol/L, LDL-C <3.10mmol/L). With the diagnostic criteria in the suggestion for Prevention and Treatment of Dyslipidemia in China, attributable risk proportion (ARP) was 33.8% and 35.9%, population attributable risk proportion (PARP) was 10.6% and 6.2% for TC≥5.17mmol/L)and ≥5.68mmol/L respectively, and similar values were observed for LDL-C ≥3.10mmol/L and ≥3.62mmo/L. Independent predictive effect was also observed in elevated non-HDL-C (150-169mg/dL,170-189mg/dL,>=190mg/dL) and TC/HDL-C(>=4.5). The incidence of ICVD was positively related to serum TG and inversely to HDL-C in this cohort, but the association was not statistically significant.
Conclusion: Although the level of serum lipids and lipoproteins was relatively low in Chinese middle aged populations compared to that in the westerner, the independent predictive effect on ICVD was confirmed for elevated TC, LDL-C, non-HDL-C, TC/HDL-C; if serum lipids was controlled in ideal level, the incident of ICVD in the population will decline about 10%.
Keywords: Lipids, Lipoproteins, Coronary heart disease, Cerebrovascular disease.

183 (676). Coronary Heart Disease: Risk Factors (Date: 22nd May 2005 — Free Paper Session 1.2 (Oral) — (13.30—15:00 Hours))

Is Low Social Integration and Support a Risk Factor for Acute Coronary Syndrome?

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Background: Acute coronary heart disease is the most common reason for death in Sweden for both men and women. Every year 35000 men and women in Sweden develop myocardial infarction, (MI). Important risk factors are hypertension, smoking, hyperlipidemia, overweight (principally abdominal obesity), diabetes, lack of physical activity, stress and psychosocial factors. During the last decades there is increasing evidence that not only biological risk factors but also psychosocial factors are important for the development of coronary heart disease (CHD). During the last years there have been a decrease in smoking habits and cholesterol levels, on the other hand body mass index (BMI) is increasing.
Women develop MI about 5-10 years later than men, due to their oestrogen protection.
Women with diabetes and/or metabolic syndrome lose their natural defence against coronary heart disease and suffer this risk as well as men do.
Women's way of living and working has changed markedly during the last decades, and has become more identical to the men. In this study we investigated the psychosocial network factors in cases of AMI and population based controls.
Aim: The aim of the study is that from the INTERGENE study lighten the importance of the social network and the risk to develop a new coronary heart disease event. A comparison will be made between cases and controls from the study living in the same area, not the relatives. All are between 45-75 years of age and will be compared from a genus point of view. Confounding factors such as smoking and alcohol consumption will be noticed.
Method: Men and women < 75 years of age hospitalised for coronary heart disease in Gothenburg (three hospitals) during April

2001-August 2004 were consecutively screened and asked for participation in the INTERGENE-study. INTERGENE is a case-control study with cases (550), their first-degree relatives (400) and a random sample of healthy controls living in the same area as the cases (2000). A questionnaire has been used for all participants, with questions about social network and social integration from an adaption of the ISSI-scale, (Interview Schedule for Social Interaction).

Result: We classified social integration in three groups.

1) Low social integration and support
2) Medium social integration and support
3) High social integration and support

We found that among women who were treated with a first coronary heart disease there was a significantly difference between the amount of social integration. 56.3% of the women treated for their first MI or unstable angina was in the first group. The other two groups were equal with 21.9% in each.

For the men there were no differences between cases and controls.

211 (694). Diabetes & Metabolic Syndrome (Date: 23rd May 2005 — Free Paper Session 2.2 (Oral) — (13.30—15:00 Hours))

Fasting Blood Glucose Level and Risk of Ischemic Heart Disease and Stroke Subtypes: Korea Medical Insurance Corporation Study

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Objective: Diabetes is a well-known risk factor of cardiovascular disease, but the normal range of fasting blood glucose is not fully studied in relation with the risk of ischemic heart disease and stroke. The aim of this study was to examine the associations between fasting blood glucose level and the risk of incident ischemic heart disease and stroke.

Methods: We measured fasting blood glucose and other cardiovascular risk factors in 102141 men and 52157 women, aged 35-59 years in 1990 and 1992, in a prospective observational study. Baseline fasting blood glucose levels were the means of two measurements in 1990 and 1992, and they were divided into 7 categories in men and 4 categories in women. Our primary outcomes were hospital admissions and deaths from ischemic heart disease, ischemic stroke, intracerebral hemorrhage, and subarachnoid hemorrhage in 10 year follow-up between 1993 and 2002. Using the Cox proportional hazard model, we estimated the relative risks of ischemic heart disease and stroke subtypes according to the baseline fasting blood glucose level, after adjustment for age, body mass index, blood pressure, total cholesterol and aminotransferase level, cigarette smoking and alcohol intake.

Results: Fasting blood glucose level of diabetic range (≥7.0mmol/l) was positively associated with risk of ischemic heart disease and ischemic stroke. However, moderately elevated fasting glucose (6.0-<7.0mmol/l) was not associated with ischemic heart disease, but with ischemic stroke. Neither intracerebral hemorrhage nor subarachnoid hemorrhage was associated with fasting blood glucose level.

Conclusions: Risk of ischemic heart disease increased at fasting blood glucose level of diabetic range (≥7.0mmol/l), where risk of ischemic stroke increased from the lower fasting blood glucose level (≥6.0mmol/l).

250 (722). Coronary Heart Disease: Risk Factors (Date: 22nd May 2005 — Free Paper Session 1.2 (Oral) — (13.30—15:00 Hours))

Risk Profiles and Onset Age of Coronary Artery Disease (CAD) in Korean CAD Patients with Family History of CAD

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Objectives: We tried to find the characteristics of risk factors in the korean patients with CAD with family history (FH) of CAD. Korea has lower prevalence of CAD compared with western countries and the positive FH of CAD can be found in about 5% of patients with CAD. So analyzing the risk factors of the CAD pa-

Table 1. The risk factors and the onset age in male CAD patients with or without FH of CAD

			Mean ± SE
	FCAD(male)	NFCAD(male)	P-value
Age (year)	55.7±10.4	59.8±10.0	<0.0001
Hypertension (%)	42.8	46.7	0.0285
Diabetes mellitus (%)	23.4	28.0	0.0015
BMI(kg/m^2)	25.1±3.2	24.6±2.8	0.0128
TC (mg/dl)	196.6±45.6	183.8±38.9	0.0003
LDL (mg/dl)	130.9±43.7	117.8±33.4	0.0006

		Adjusted risk ratio (95% CI) for			
		Ischemic heart disease	Ischemic stroke	Intracerebral hemorrhage	Subarachnoid hemorrhage
Men	<4.5	1.00	1.00	1.00	1.00
	4.5—<5.0	0.99 (0.87—1.12)	0.92 (0.78—1.08)	1.13 (0.89—1.45)	0.89 (0.60—1.30)
	5.0—<5.5	0.95 (0.83—1.08)	0.94 (0.79—1.10)	1.08 (0.84—1.38)	0.99 (0.67—1.46)
	5.5—<6.0	1.00 (0.86—1.17)	0.91 (0.76—1.10)	1.01 (0.76—1.35)	0.79 (0.48—1.29)
	6.0—<6.5	0.95 (0.78—1.17)	1.27 (1.01—1.59)	1.14 (0.80—1.63)	0.74 (0.36—1.52)
	6.5—<7.0	1.09 (0.82—1.45)	1.39 (1.02—1.89)	1.25 (0.78—2.01)	0.43 (0.10—1.78)
	≥7.0	1.73 (1.43—2.09)	2.37 (1.93—2.92)	1.07 (0.71—1.63)	0.78 (0.33—1.84)
Women	<5.0	1.00	1.00	1.00	1.00
	5.0—<6.0	0.99 (0.81—1.23)	0.84 (0.62—1.13)	1.37 (0.92—2.03)	0.88 (0.53—1.45)
	6.0—<7.0	1.43 (0.88—2.33)	1.85 (1.06—3.25)	0.96 (0.29—3.09)	2.13 (0.83—5.48)
	≥7.0	3.28 (2.04—5.28)	2.50 (1.25—5.01)	1.56 (0.37—6.56)	—

tients with FH of CAD in Korean may give us a clue to the genetic predispositions involved in Korean patients.
Methods: We analyzed the major risk factors in 312 CAD patients with FH of CAD (FCAD) and in 4,572 CAD patients without FH of CAD (NFCAD). The CAD patients were diagnosed as CAD by coronary angiography at Samsung Medical Center from 1994 to 2003.
Results: The mean age of FCAD was significantly younger than that of NFCAD. The means of body mass index (BMI), total cholesterol (TC) and LDL cholesterol were significantly higher in the FCAD. Significant differences in BMI, TC, and LDL were observed in the subgroup of male patients (Table 1), but not in the subgroup of female.
Conclusion: The risk profiles of FCAD showed significantly younger age, higher TC, LDL, and BMI compared with those of NFCAD, suggesting a genetic predisposition related to TC and LDL metabolism and obesity, especially in themale patients. The presence of FH of CAD lowered the onset age of CAD by 4 years in the male patients.

276. Coronary Heart Disease: Risk Factors (Date: 22nd May 2005 — Free Paper Session 1.2 (Oral) — (13.30—15:00 Hours))
Lack of Ethnic Difference in the Association Between Smoking and Coronary Heart Disease

Background: Smoking is a proven risk factor for coronary heart disease in Europe and the U.S., but uncertainty exists about the strength of its effects in the Asia-Pacific region. Previous studies in Asia have often suggested limited associations, which has led to suggestions that Asians may have genetic or some other natural protection against the ill-effects of smoking.
Methods: An individual participant meta-analysis of data on 562,338 people from 40 cohort studies, 32 in Asia and 8 in Australia or New Zealand (ANZ). Smoking habits recorded at baseline and related to CHD incidence (fatal or non-fatal), over an average follow-up period of 6.3 years in Asia and 8.3 years in ANZ, using Cox survival models, stratified by study and sex and adjusted for age and systolic blood pressure.
Results: Smoking levels were high (30-60%) amongst men from studies in China, Japan, Korea, Singapore, Taiwan and Thailand, but higher amongst women (14%) in ANZ than in any Asian country. During follow-up there were 3010 fatal and 1173 non-fatal CHD events. Smoking was significantly related to CHD in all regions, with no evidence of any heterogeneity of effect (p=0.37); hazard ratios (95% confidence intervals) [HR (CI)] relating smoking to not smoking were 1.64 (1.50-1.80) in ANZ, 1.53 (1.30-1.81) in mainland China, 1.92 (1.44-2.56) in Japan, 1.45 (1.12-1.87) in Korea and 1.41 (1.05-1.91) in the rest of Asia. HRs by average number of cigarettes per day showed a dose-response relationship, with no significant difference (p=0.2) between Asia and ANZ. Although Asian HRs were systematically non-significantly smaller, the differential was explainable by shorter follow-up of subjects and the less mature nature of the smoking epidemic in Asia compared to ANZ. Similarly, there were no significant differences (p=0.12) between Asians and ANZ in the improved outcome after quitting smoking; HR (CI)s for ex-v current smokers were 0.84 (0.70-1.02) in Asia and 0.67 (0.60-0.75) in ANZ.
Conclusions: Asians can expect just as much excess coronary relative risk from smoking as others. Importantly, Asians who quit smoking can expect just as much reduction in coronary relative risk as others. However, the high rates of smoking amongst men in Asia and the worldwide increase in smoking amongst young women suggest that, without intensive tobacco control campaigns, the burden of CHD in the populous regions of Asia will be enormous in years to come.

41 (571). CVD Prevention: Community based Interventions (Date: 24th May 2005 — Free Paper Session 3.1 (Oral) — (13.30—15:00 Hours))
Might Small Changes in UK Cardiovascular Risk Factors Lead to Potentially Big Reductions in Coronary Heart Disease Mortality?
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Objective: The UK government recently called for a 40% reduction in cardiovascular disease mortality, setting a target of 28,000 fewer deaths in 2010. This paper examines the potential for cardiovascular risk factor changes to achieve that target.
Methods: Analysis of risk factor trend data using a previously validated mortality model. This model integrates information on trends in all the major cardiovascular risk factors, plus the uptake and effectiveness of all medical and surgical treatments, stratified by age and sex describing the England and Wales projected population in 2010 (37.1 million, aged 25-84).
The potential reductions in coronary heart disease mortality from the base year, 2000 were calculated for contrasting scenarios:

a) if recent major risk factor trends simply continued to 2010
b) if greater reductions in risk factors were achieved, as in Scandinavia and the USA.

An 'analysis of extremes' sensitivity analysis was then performed.
Results: Continuation of recent risk factor trends should result in 10,685 fewer coronary deaths in 2010 (minimum 10,110, maximum 16,460) than in 2000. Modest additional reductions could potentially achieve 51,270 fewer deaths (minimum 39,435, maximum 71,510). These estimates remained stable after sensitivity analysis. In contrast, optimistic changes in obesity, diabetes and physical activity would only have relatively small effects.
Discussion: Modest additional risk factor reductions already achieved in the USA and Scandinavia could prevent or postpone over 50,000 deaths by 2010, halving current coronary mortality.

60 (588). CVD Prevention: Community Based Interventions (Date: 24th May 2005 — Free Paper Session 3.1 (Oral) — (13.30—15:00 Hours))
Cardiovision 2020: 4 Years of Progress
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Objective: We initiated CardioVision 2020 in 1999 as a community partnership to help Olmsted County, Minnesota become the healthiest county in the United States by the year 2020. We defined personal goals for smoking and environmental tobacco smoke exposure, nutrition, physical activity, blood pressure, and serum cholesterol levels, and we advocated environmental changes to help individuals achieve these goals. We now report program acceptance and progress toward the CardioVision 2020 goals after four years of intervention.
Methods: We interviewed independent samples of the Olmsted County, Minnesota population ages 20 and older in 1999, 2000, 2001, and 2003 and supplemented the interview data with a

mailed dietary questionnaire. We extracted blood pressure and cholesterol data from the records of Olmsted County residents who were treated at Mayo Clinic Rochester and gave permission to have their medical records used in research.
Results: More than 90% of the population considers CardioVision 2020 to be a good, very good, or excellent idea. The program is associated with a 25% reduction in the number of people exposed to environmental tobacco smoke and small but significant increases in consumption of fruits, attempts to increase physical activity, and daily physical activity. The population meeting the serum cholesterol goal increased from 52.0% in 1999 to 57.5% in 2003, and the population meeting the blood pressure goal increased from 53.7% in 1999 to 59.9% in 2003. However, attempts to quit smoking and the amount of time spent in physical activity did not increase. The proportion of people trying to lower their cholesterol declined significantly.
Conclusions: In 4 years, we were able to achieve significant recognition for CardioVision 2020 as a positive attempt to improve the health of Olmsted County. During the 4 years that CardioVision 2020 and others have worked to prevent heart and other chronic diseases in Olmsted County, we observed several positive changes in personal behaviors and risk factor levels.

65 (592). CVD Prevention: Community based Interventions (Date: 24th May 2005 — Free Paper Session 3.1 (Oral) — (13.30—15:00 Hours))

Advice and Attempts to Improve Weight, Diet and Physical Activity in the Community: Do Persons with chd Try Harder?

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Aim: Previous studies suggest that persons with coronary heart disease (CHD) who smoke cigarettes are more likely to stop smoking than persons without CHD, but it is unclear if they are also more likely to improve other lifestyle habits. In addition, physician advice for lifestyle change is moderately effective in the general population, but it is unclear if such advice is as effective in persons with CHD, who may have higher risk lifestyle habits than in the general population.
Methods: We conducted a mailed survey of health behaviors in 2003 in 609 randomly selected persons who were identified in Olmsted County, Minnesota as having had a documented CHD event (myocardial infarction, percutaneous coronary angioplasty, or coronary bypass surgery) between 1997 and 2002. Data were compared to data from a similar survey carried out in the same time frame in the general population (GEN) of the same region (n=1190).
Results: Significantly more individuals in the CHD group reported being either overweight or obese (BMI>25 kg/m2) than in the GEN group (77% vs 57%, p<0.005). Significantly more individuals in the CHD group also reported receiving advice from their physician to lose weight (47% vs 13%, p <0.005), improve their diet (60% vs 29%, p<0.005), and improve exercise habits (92% vs 38%). However, there was no significant difference between the groups in the percentage of those who reported that they were trying to reduce weight (47% vs 48%, NS) or improve exercise habits (61% vs 58%, NS). Slightly more in the CHD group were trying to improve dietary habits (79% vs 70%, p<0.05).
Discussion: Overweight and obesity are more common in persons with CHD than in the general population, among the groups we studied. While individuals with CHD were more likely to report receiving advice from their physician to lose weight and improve dietary and exercise habits, they are only slightly more likely to be attempting such changes. This suggests standard advice from physicians for lifestyle change may be less effective for individuals with CHD as compared to the general population. Since lifestyle changes can help reduce risk in persons with CHD, more effective methods of lifestyle counseling for these individuals are needed at the community level.

105 (625). CVD Prevention: Community based Interventions (Date: 24th May 2005 — Free Paper Session 3.1 (Oral) — (13.30—15:00 Hours))

A Randomized Non-Pharmacological Intervention Study for Prevention of Ischaemic Heart Disease. INTER99

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Objectives: To evaluate the effect of a population based screening and non-pharmacological intervention for prevention of ischaemic heart disease (IHD) in the frame of a medical technology assessment.
Methods: 13,016 persons randomly selected from the background population were invited for a risk assessment for development of IHD by means of a computer programme (PRECARD®). According to predefined criteria participants were classified into a high risk and low risk group. Individuals were a priori randomized to receive a low intensity intervention or a high intensity intervention. Interventions were made in three waves (at base line, after one, and after three years). Intervention focused on smoking cessation, increase in physical activity and change in diet. Effect was calculated as change in life style habits, biological risk factors, and absolute risk of IHD.
Results: Participation rate at baseline was 52% (N=6,784). A total of 60% fulfilled the criteria for life-style intervention and had a health counselling talk. Nearly half accepted group based intervention during a 6 months period. 62% of the high-risk population was re-examined after one year. About one fifth stopped smoking. More persons in the intervention groups stopped smoking and increased physical activity and intake of prudent diet compared to the background population. Systolic blood pressure and the estimated risk of IHD decreased significantly more in the high intensive intervention group compared to the low intensive intervention group (p<0.05).
Discussion: There is an increasing need for life-style counselling in the population. The present study shows a positive effect of population based screening and intervention after one year.

119 (635). CVD Prevention: Community based Interventions (Date: 24th May 2005 — Free Paper Session 3.1 (Oral) — (13.30—15:00 Hours))

Primary Prevention of Cardiovascular Disease: Population Strategy vs High Risk Individuals

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Background and objective: Identification of high risk individuals is one of the main goals of cardiovascular disease (CVD) primary prevention and constitutes the basis for implementing actions towards reducing modifiable risk factors at individual level. High risk individuals (CVD risk≥20% in 10 years) constitute a little proportion of people who fall ill; the majority of events occurs in persons at moderate risk. This analysis aims to evaluate expected events by risk deciles in order to implement a population strategy.

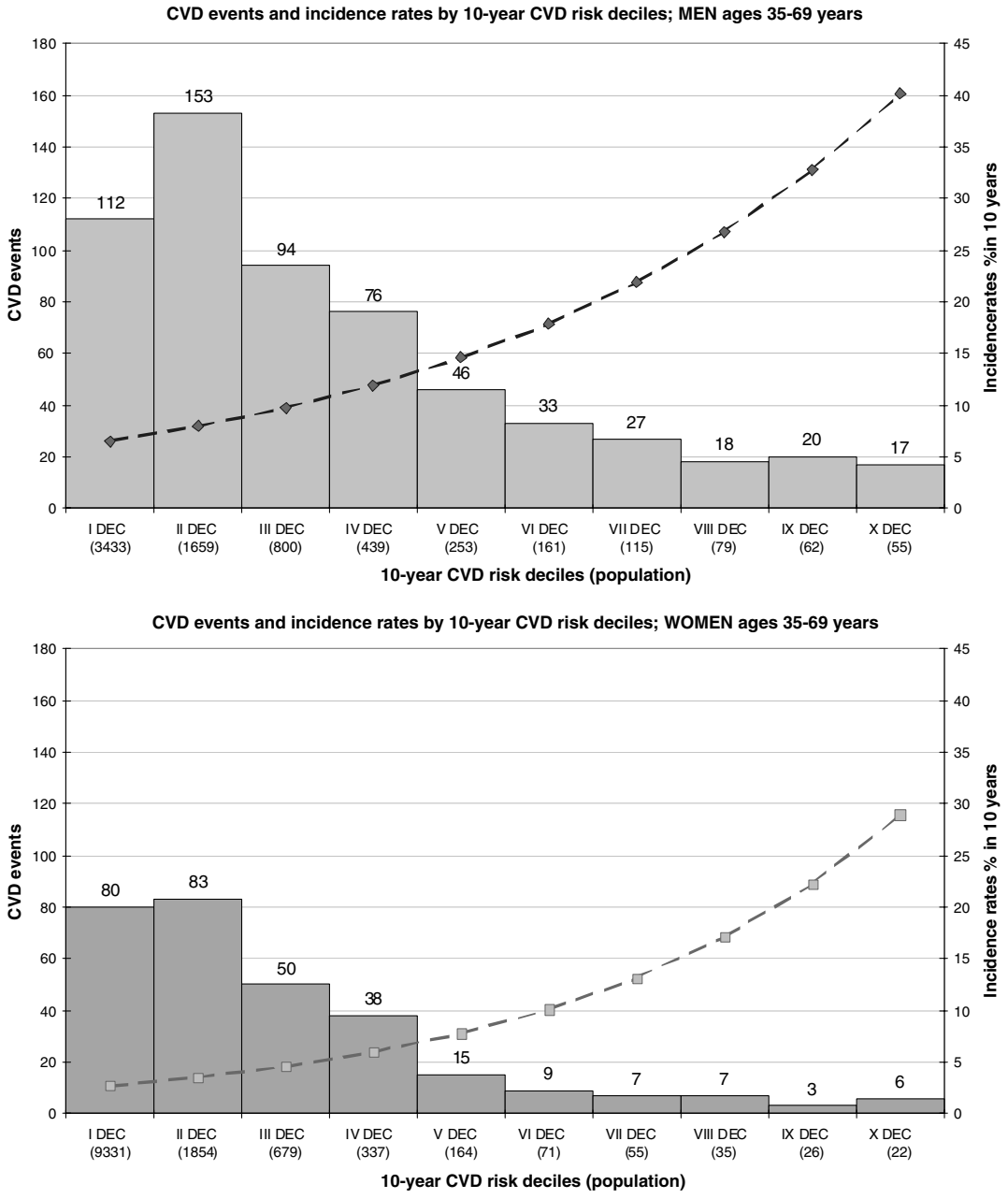

Figure: Abstract 119 (635)

Methods: 10-year prospective study of 12 cohorts (Progetto CUORE) 7,520 men and 13,127 women baseline ages 35-69, free of CVD (myocardial infarction and stroke), followed up for a median period of 9.5 years in men and 8.0 in women; standardized validation of suspected non-fatal and fatal CVD events was based on MONICA diagnostic criteria. Cox proportional hazard models were used to asses CVD risk separately for men and women. CVD risk has been stratified in deciles.
Results: Age-adjusted CVD incidence rates were 80/

224 (703). CVD Prevention: Community based Interventions (Date: 24th May 2005 — Free Paper Session 3.1 (Oral) — (13.30—15:00 Hours))

A Community Intervention Promoting Physical Activity Reduced Weight Gain and Beneficially Affected Cardiovascular Risk Factors in a Low-Income Urban District

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Objectives: We selected a low socio-economic status district in Oslo, Romsås, for an intervention study, using a similar district as control (CD), to investigate the effects of a low cost intervention program based on a combination of total community- and high-risk-approaches to 1) increase the level of physical activity 2) reduce weight gain.
Methods: We applied a set of orchestrated intervention initiatives to promote physical activity in the district[1]. We also addressed dietary and smoking habits. Pre-and post-tests

including questionnaires, physical examination and blood samples were performed in 2000 and 2003. A total of 2950 persons (48%) 30-67 years of age, met at baseline - 22% non-Western immigrants. Of those still alive and living in the area 1776 (67%) met in 2003. For each subject the changes in outcome variables were calculated. The net change (categorical data) in each district was the proportion with positive − negative change.

Differences in changes between intervention and CD: Self-reported physical activity increased in Romsås relative to CD, as measured by three different variables. The net increase in heavy physical activity was 9.5% (p=0.008), 12.2% for men (p=0.025) and 6.9% for women (p=0.127). There was an increase to more active levels in stages of change variable (p=0.02), and subjects >50 years at baseline reported more physical activity in leisure time (p= 0.049 for men and 0.039 for women). Mean body weight increased in both districts. The increase was 46% lower in Romsås vs CD, (0.6 vs 1.8kg, p=<0.001) for men and 1.0 vs 1.3kg (NS) for women. For those >50 years, the mean increase was 0.2kg for both genders vs 1.5kg (p<0.001) for men and 1.0kg (p=0.09) for women in CD. For men the weight gain in Romsås was significantly lower also for non-Westerners, for high and low education levels, for those with diabetes or without. For men in Romsås vs CD the net change in cholesterol/Hdl-ratio was -0.21 (p=0.006), non-fasting triglycerides -0.22 mmol/l (p=0.01) and glucose -0.35mmol/l (p=0.03). For women >50 years in Romsås vs CD the net change in cholesterol/Hdl-ratio was -0.15 (p=0.05) and non-fasting triglycerides -0.25 mmol/l (p=0.003).

Conclusions: These results strongly indicate that it is possible to increase physical activity levels, to reduce weight gain and associated risk factors, and thereby reduce the risk of future diabetes and CVD in a high risk population by means of a low-cost community intervention.

[1]AK Jenum, C Lorentzen, SA. Anderssen, KI. Birkeland, I Holme, PG. Lund-Larsen, Y Ommundsen, T Raastad, DS. Thelle, R Bahr. Promoting physical activity in a multi-ethnic district − methods and baseline results of a pseudo-experimental intervention study. Eur. J Cardiovasc. Prev and Rehab. 2003; 10, (5): 387-396.

402 (851). CVD Prevention: Community based Interventions (Date: 24th May 2005 — Free Paper Session 3.1 (Oral) — (13.30—15:00 Hours))

Isfahan Healthy Heart Program: A Practical Model for Comprehensive Community-Based Intervention Program on Non-Communicable Disease Prevention and Health Promotion in Developing Countries

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Background: Isfahan Healthy Heart Program (IHHP) − a six year, actionoriented, comprehensive, and integrated community-based demonstration study − was launched late in 1999 to address the ongoing epidemic of noncommunicable diseases (NCDs) and their major risk factors in Iran. It is a quasiexperimental trial that includes a reference area and several levels of evaluation including process, impact and outcome evaluations.

IHHP involves individual, community and environmental changes to support health behaviour modification.

Methods: 12600 randomly selected individuals aged ⩾ 18 years from 5 to 10 percent of the households in Isfahan and NajafAbad were selected and surveyed. They were questioned on personal habits and demographics. Blood pressure and body mass index (BM/) measurements were done and fasting blood samples were taken for two hours post load plasma glucose (2 hpp), serum *total, HDL and LDL) cholesterol and triglyceride levels. A twelve-lead electrocardiogram was recorded in all persons above 35 years of age. Communitywide of deaths, hospital discharges, myocardial infarction and stroke registry was carried out in the intervention and control areas. In addition to the 12600 adults, the baseline study was performed also among 2000 adolescents, ages 1118, 2000 health professionals and 2000 high risk and CVD patients in both intervention and reference communities. Three simultaneous studies about the CVD new risk factors, CVD associated risk behaviors in children, ages 210, and nutritional habits at macro and micronutrient levels are being done, as well.

Results: A significant increase in the consumption of liquid oil was observed among males and females in the intervention community compared to the reference area (P<0.05). While daily smoking decreased and daily exercise increased among males in the intervention community, less favorable changes were observed among women.

Daily exercise and liquid oil consumption increased significantly, and attempts to quit smoking decreased among adolescents in the intervention community (P<0.05). The knowledge about healthy life style was significantly improved in physicians, nurses, health carrers in intervention compared to reference areas (p<0.05). Age, sex, level of education and place of residence as urban or rural modified the response to intervention activities.

Conclusion: The implementation and evaluation of a comprehensive integrated communitybased program for NCD prevention in a developing country is feasible and successful in obtaining at least shortterm improvement in several lifestyle behaviours.

121 (637). CVD Prevention: Policy (Date: 23rd May 2005 — Free Paper Session 2.9 (Oral) — (13.30—15:00 Hours))

Prediction of Major Cardiovascular Diseases in Italy. A Public Health Perspective

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Background and objective: For decades Italy has been experiencing decreasing mortality rates for cardiovascular disease (CVD) even if throughout these years lower coronary heart disease mortality rates have been corresponding to higher stroke mortality rates, a neglected adverse public health finding. This study aims to estimate incidence of coronary and stroke events in the Italian general population, to evaluate impact of multiple risk factors, and potential for CVD prevention.

Methods: 10-year prospective study of 12 cohorts (Progetto CUORE) 7,520 men and 13,127 women baseline ages 35-69 years, free of CVD, followed up for a median period of 9.5 years in men and 8.0 in women. Suspected non-fatal and fatal CVD events were validated using MONICA diagnostic criteria. Cox proportional hazard models were implemented to asses CVD risk separately for men and women. Persons have been stratified in low-risk (LR), unfavourable but not high risk (U-NHR) and high-risk (HiR) categories, according to systolic and diastolic blood pressure (SBP, DBP), total cholesterol (TC), body mass index (BMI), smoking habit, hypertension treatment, diabetes and family history of CVD.

Results: 85% of the population were assessed at HiR at baseline; only 2% at LR. Age-adjusted CVD incidence rates were 80/

270 (745). CVD Prevention: Policy (Date: 23rd May 2005 — Free Paper Session 2.9 (Oral) — (13.30—15:00 Hours))
The Polypill: At What Price Would It Become Cost-Effective?
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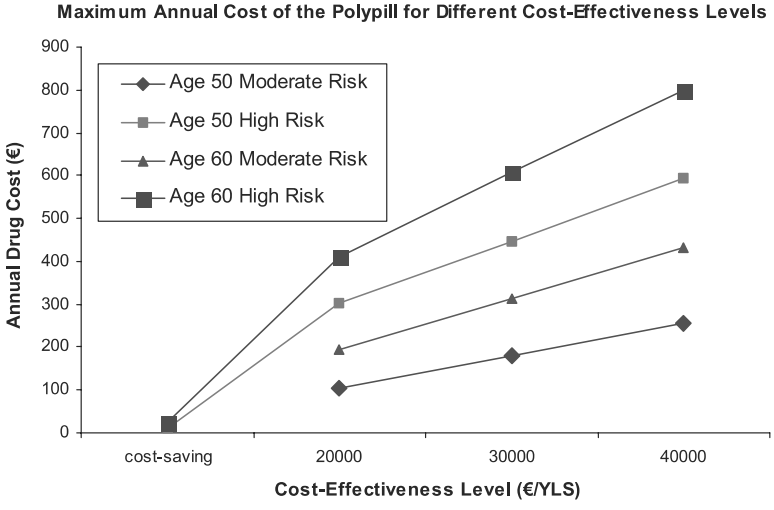
Introduction: A promising concept in cardiovascular risk management: ''The Polypill'' was introduced in 2003. Although the Polypill may appear as an effective intervention, data on its costs and cost-effectiveness remains unknown.
The objective of this paper is to determine the maximum price of the polypill in order to be a cost-effective alternative in the primary prevention of cardiovascular disease.
Methods: Data on the hypothetical effects of the Polypill was taken from the literature. Using data from the Framingham Heart Study and the Framingham Offspring study, we built life tables to model the assumed benefits of the Polypill. Using a third party payer perspective and a 10-years time horizon, we calculated what should be the medication cost of the Polypill in order to be cost-effective (using a 20000 €/Year of Life Saved threshold) in the primary prevention of cardiovascular disease among populations at different levels of absolute risk of coronary heart disease and age.
Results: To be cost-effective among populations at levels of 10-year coronary heart disease risk over 20% (high risk), the annual cost of medication for the Polypill therapy should be no more than € 302 or € 410 for age 50 and 60 respectively. For cost-effective prevention in populations at levels of coronary heart disease risk between 10 and 20% the costs should be 2 to 3 times lower.



Conclusion: Although the Polypill could theoretically be a highly effective intervention, the costs of the medication could be its caveat for implementing it in the primary prevention of cardiovascular disease.

320 (781). CVD Prevention: Policy (Date: 23rd May 2005 — Free Paper Session 2.9 (Oral) — (13.30—15:00 Hours))
Rank of Cardiovascular Diseases (CVD) and their Recognized Risk Factors (RF) Among Health Problems Appointed as Public Health Priorities in Brazil: An Inquiry to Brazilian Experts

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The group of CVD and their associated risks/co-morbidities (Hypertension, Stroke, Coronary Artery Disease, Diabetes, Obesity, Peripheral Vascular Disease, Aortic Aneurysm, Thrombo-embolic conditions, Smoking, Lipid Metabolism disturbances, Sedentary Life Style, Stress, Inflammatory instability, and other not well established risk factors) are recognized as important health problems throughout the world, independent from the level of development or richness of the population.
All these entities are somewhere linked or overlapped, and from etiology to preventive action it is necessary to consider them as a cluster.
Taken as isolated entities their importance vanishes and interventions are limited to late phases of the natural history, limited to strict medical grounds.
However, as stated by Murray and Lopez (2004), ''the global burden of disease study was initiated in part because the sum of deaths claimed by different WHO programmes exceeded the total number of deaths in the world several times. The intense pressure on technical programmes to keep their figures as large as possible was evident (1)''. Since the global burden of disease study (1996), a new standard was set for establishing the relevance of a condition or group of conditions regarding the public health agenda: comprehensive information regarding competing causes of diseases and deaths should be taken in account.
Policy, including in the health field, is not strictly a rational or scientific process. It suffers many affective influences, conflict of interests and remains of outdated misconceptions.
Aiming to drill the perception from public health specialists and cardiologists a questionnaire was sent to a selected and expressive group to start a process of evaluation, updating and revision of the public health priorities in Brazil.
This work evaluates the rank of CVD and their associated risks/co-morbid among identified public health priorities, as perceived by the group of experts (cardiologists, public health specialists, epidemiologists).
The results were arranged in clusters to fit to categories from the Global Burden of Disease (GBD-B) study, and compared with the correspondent study made in the country with data from 1998.

The research is still ongoing. Preliminary results: Group II (Non Communicable Disease) 40.85%, Group I (Infectious & Mother and Infant Diseases) 39.44%, Group III (External Causes) 18.31%,Group IV (Human Social & Service Development) 12.66%. Excluding the last category, to stay in medical grounds, and comparing with the GBD-B study the results were respectively as follows: GII=46.77% and 66.26%; GI=45.16% and 23.47%; GIII=20.97% and 10.25%.
Inside the Group II (NCD): CVD & RF=58.62% and 62.09%; Mental Stress=27.59% and 5.09%; Smoking & Drugs=6,90 and 11.33%; Cancer=3.45% and 21.49%.
Differences and intervention proposals are object of discussion and deserve further consideration and study.

326 (782). CVD Prevention: Policy (Date: 23rd May 2005 — Free Paper Session 2.9 (Oral) — (13.30—15:00 Hours))
Tobacco Control in India: A Review of Determinants that Enabled a Tobacco Producing Nation to Enact Strong Tobacco Control Policies

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India is the second largest country in the world with a billion plus population and the second largest producer and consumer of tobacco. Deaths due to tobacco are expected to rise dramatically in many developing nations of the world in the next two decades. World Health Organization, estimated that the proportion of deaths due to tobacco will rise in India from 1.4% of all deaths in 1990 to 13.3% of all deaths in 2020. Problem of tobacco use in India is unique as compared to any other country, due to myriad varieties in which tobacco is used in India. In India, cigarette smoking forms a small part of the overall tobacco consumption. Bidi smoking and oral use of smokeless tobacco products form a major part of tobacco consumption in India.
Like any other tobacco producing nation, the interplay of economic interests and public health concerns are complex in Indian scenario. Despite this challenge, India has set a model for the world, highlighting the multi-sectoral efforts that need to be followed by a tobacco producing country for enacting effective national legislations for tobacco control. India has achieved stupendous success in ensuring a strict legislation on tobacco control at national level and at the same time was a leader in negotiations for the WHO's Framework Convention on Tobacco Control (FCTC). India was one among the first few countries that signed and ratified the FCTC. Within the country, the strong role played, in recent years, by the Civil Society, Judiciary, National Human Rights Commission, Parliamentarians and other policy-makers, resulted in an environment conducive to enforcing a stringent national law for tobacco control in 2003. This transformation, from India previously viewed as a country which values the revenue and employment generation potential of tobacco agriculture and manufacture, to India being acclaimed as a leader in global tobacco control efforts is worth highlighting as a success of public health efforts. Factors that have cumulatively contributed to the emergence of this national consensus on tobacco control include: increase in health awareness, vigorous advocacy by civil societies, public interest litigations, laws enforced by Supreme Court of India and state high courts to protect rights of non smokers and enactment of state-level laws for tobacco control. This presentation will provide a comprehensive overview of the tobacco problem in India from public health challenges to policy responses, as a success story to be shared with other developing countries.

375 (830). CVD Prevention: Policy (Date: 23rd May 2005 — Free Paper Session 2.9 (Oral) — (13.30—15:00 Hours))
The Failure of American Public Health Education to Confront Global Chronic Disease

Introduction: Chronic diseases (CD) are the leading cause of mortality and morbidity in the less developed economies at the beginning of the 21st century. Although this transition has taken place over decades, neither the U.S. government nor the non-profit organizations that support global health assistance devote resources to confronting these illnesses.
Hypothesis: A significant portion of program officers of global health assistance organizations hold a Masters of Public Health degree (MPH). If that degree program does not emphasize CD, the program officers will not have an awareness of the CD issues in developing economies. Hence one possible explanation for under funding of CD assistance would be educational lacunae within the granting organizations.
Methods: All institutions accredited by the Association of Schools of Public Health (ASPH) were surveyed on line to determine the role of CD in the MPH curriculum. A concentration in CD was considered a definite commitment; a global health concentration that emphasized CD was considered a minor commitment. The first survey was in 2002; the second in 2004. Data on enrollment categorizations was supplied by the ASPH in 2002 reflecting enrollment for the 2000-2001 academic year.
Results: No school offers a concentration in CD. One school, Yale, emphasizes CD in its epidemiology concentration, and, in 2004, in its global health concentration. Hence if a quarter of Yale MPH candidates (n=25) chose either of these concentrations, of the nearly 4000 students granted MPH degrees annually only 0.6 % could get relevant exposure to the global CD problem.
Discussion: American MPH students are not exposed to CD during their core educational preparation. Hence, the lack of support for CD from global health organizations is not without expectation. If the global health community wants to engage the major pressing issues of the day, the educational infrastructure that girds the field needs to be changed.

376 (831). CVD Prevention: Policy (Date: 23rd May 2005 — Free Paper Session 2.9 (Oral) — (13.30—15:00 Hours))
Assessment of National Cardiovascular Disease (CVD) Prevention Policy in a Country Undergoing Economical And Social Transition: Example of Georgia

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The objective of the study*:* For assessment of Georgian National Policy for CVD Prevention in order to support review and update of the National Health Policy components related to CVD, the survey was carried out by CINDI team of Georgian Medical Association in the framework of APW between WHO/ EURO (Chronic Disease Prevention) and Georgian Medical Association.
A brief description of the methods used: The assessment methodology had two main dirrections: (1) The study and analisis of the NCD prevention documents; (2) Collecting qualitative and quantitative data by questioning of the persons involved in elaboration and involvement of CVD prevention policy.
Summary of results: CVD represents the greatest burden of mortality and morbidity in Georgia and is among the declared priorities for Georgian Health Policy. In 1999-2002 the State (National) Program regarding cardiovascular diseases prevention named ''State Program on Prevention of Circulatory System Diseases'' covered a wide range of preventive activities. The Min-

istry of Labor, Health and Social Affairs had a budget line for CVD but actually the financing was irregular and incomplete. In general, programs were poorly integrated within the primary health care system. There were good examples of policy development for CVD prevention (publishing strategic documents, establishing alliances and joint committees, public educational materials, preventive practice guidelines, professional education etc), but the quality and quantity of these activities in these fields should be improved, especially in coordination, legislation and regulation, social marketing, mass media involvement, community mobilization, implementation of primary care guidelines.
Conclusions: More intensive implementation of integral approach is recommended. Establishment of joint structure for managing CVD and other main non communicable diseases prevention and control (formal or non-formal) appears reasonable.

88 (613). CVD Prevention: Primary Health Care Providers (Date: 24th May 2005 — Free Paper Session 3.9 (Oral) — (13.30—15:00 Hours))
Knowledge, Attitudes, Believe and Practice Concerning HBP of Nurses Working at Primary Health Care Settings. Iribarren Municipality Lara State, Venezuala
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Data on Capacity of Primary Health Care (PHC) to deal with HBP is Deficient. One Area of Relevance is Knowledge, Attitudes and Believes of PHC Nurses Concerning HBP. The High Prevalence of HBP Indicates that PHC is the Key Element to any Successful Program for the Prevention Early Detection And Control of HBP at Community Level.
Methods: The data came from a survey done in a non probabilistic sample of PHC nurses, from the Municipality of Iribarren, Lara State, Venezuela 2004. The sample includes a wide arrange of PHC settings: government and NGO. The questionnaire was develop and validated according to generally accepted methodology and its content is accordance to internationally accept guidelines.
Results : The sample was 306 nurses, 94% were female, 41.9% were 31 to 40 years old, 51.9% were practitioners (1 year technical) 24.8% technicians (3 years degree). 2 out of 3 nurses never attended continue education activities on HBP or did so more than 2 years in the past. One in 3 got their information about cut points for HBP while attending school. 98% are willing to attend workshops.
About BP measurement : a- 1 out of 3 nurses could not identified the arm circumference as key for cuff selection. b- 57.2% believe cut point for abnormal BP is SBP>140 and or DBP>92. c- Only 10.5% could identified ''Normal BP'' as SBP<118 and DBP<78. d- 10% of the nurses believe people's BP remains unchanged during the day/night. One out of 3 nurses believe that for all patients, HBP cannot be controlled without pharmaceutical treatment. Seven out of 10 nurses never go outside their clinics to do community activities that involve BP taking, and 46% do not have any materials for dissemination of information concerning HBP.
Discussion : The epidemic of HBP is a global public health problem that needs to be faced systematically given its multi-factorial nature. Theses results unveils a rather dismal situation: a significant proportion of the nurses do not have knowledge and skills to measure PB correctly. Only 1 in 10 could identify correctly the current cut point for ''Normal BP'' therefore leaving out many people in need of assistance. This is of particular importance given the fact that nurses and not MD are in charge of measuring BP at most PHC settings. These are main issues that needs to be addressed if any prevention and control program of HBP is to be successful.

126 (608). CVD Prevention: Primary Health Care Providers (Date: 24th May 2005 — Free Paper Session 3.9 (Oral) — (13.30—15:00 Hours))
Bulgarian Survey of General Practitioners Awareness of Cardiovascular Risk Factors: Diabetes Type 2 Treatment Targets and Algorithms
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Evidence based data from the large studies at the end of last century caused a rapid decrease in the target levels of blood sugar, lipids and blood pressure. General practitioners (GPs) represent the first line in treatment of social important diseases like diabetes.
The aim of this study was to establish the information status of general practitioners (GPs) in Bulgaria about diabetes type 2.
Materials and methods: 497 GPs who were taking care of 24607 diabetic patients have been interviewed. The questionnaire have consisted of 28 basic questions about diagnosis, monitoring, prevention and treatment of metabolic syndrome and diabetes type 2 and its late complications. Data about awareness of diabetes treatment goals and algorithms is reported here.
Results: 55.5% of the GPs have recognized the target HbA1c level according to the last guidelines and one of five (19.7%) have not known any value. Every third GP (36.6%) has not controlled HbA1c at all. More than the half of the interviewed (54.1%) have preferred monotherapy, 27.4% have had a preference for combined oral therapy and only 4.6% have started early insulin treatment. Statins, fibrates and glucagon have been considered primary blood sugar lowering drugs by 5.8, 6.2 and 4.6% respectively. Only half of the physicians have designated the maximal dose of metformin and 17.3% have thought it could have caused hypoglycemia. The target levels for total cholesterol (C), LDL-C, HDL-C and triglycerides have been determined by 39.4, 52.5, 40.0 and 63.4% of the GPs respectively. 47.9% of the doctors have known the new target levels for blood pressure and 48.3% would have started treatment if it had been higher than 130/80 mm Hg.
Conclusion: The data of this study showed that sometimes there is a gap between recent guidelines and the community health care.

137 (608). CVD Prevention: Primary Health Care Providers (Date: 24th May 2005 — Free Paper Session 3.9 (Oral) — (13.30—15:00 Hours))
The General Practitioners' Continuous Education and its Influence on the Management of Hypertension with Respect to the Target Values Achievement
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Objectives: We analyzed the general practitioners (GPs) knowledge about the target levels (TLs) treatment achievement in patients (pts) with arterial hypertension (AH) (March 2003 — June 2004). The study was part of BULPRAKT-HEART-project (BULgarian PRospective Analysis of the physicians' Knowledge and Therapy choice in HEART Disease Treatment And Prophylaxis).
Materials and methods: We carried out 2 inquiries with 926 GPs and 830 GPs respectively studying their knowledge about the TLs treatment. Medical education courses aiming at the treatment of cardiovascular diseases according to the existing clinical guidelines were carried out in between the two inquiries.
Results: The 1st inquiry revealed the following data: a strong trend to reach the blood pressure TLs in pts with uncomplicated AH (in mmHg) — <140/90 — 96.3% of GPs and >140/90 — 3.7%; in pts with complicated AH 48.1% of GPs aimed the treatment to values <130/85 and 51.9% - to values >130/85; in pts with diabetes 33.1% of GPs considered the TLs of blood pressure >130/80 and 66.9% - <130/80; in pts with AH and proteinuria — for 30.3% of GPs targeted treatment values were >130/85 and for 59% higher than 125/75, for 69.7% - <130/85 and for 41% - <125/75.
The 2nd inquiry data, after the active education program, was as follows: 98.08% of GPs considered values <140/90 mmHg as being correct in pts with uncomplicated AH and for complicated AH — <130/85 mmHg - 78.6% of GPs; 90.7% of GPs pointed out that values <130/80 mmHg had to be targeted in pts with AH and diabetes and <125/75 mmHg — in pts with AH and proteinuria (more than 1 g protein daily) (66.3 % of GPs).
Conclusions: After one-year education period the GP's knowledge about treatment targets in pts with AH associated with different clinical settings changed positively. Only a small part of GPs showed no information about the TLs of blood pressure in pts with AH and diabetes, complicated hypertension and/or concomitant proteinuria.

146 (656). CVD Prevention: Primary Health Care Providers (Date: 24th May 2005 — Free Paper Session 3.9 (Oral) — (13.30—15:00 Hours))

Physician and Patient Related Factors Explaining the Treatment gap in Coronary Heart Disease: Results from a Survey in Germany

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Objective: Surveys have shown a persistent gap between evidence based guidelines on secondary prevention of coronary heart disease (CHD) and their implementation in clinical practice. The aim of the present study is to identify physician and patient related factors explaining the observed discrepancies.
Methods: We performed an independent physician and patient survey in 2002—2003. A postal questionnaire on secondary prevention of CHD was sent to all general practitioners and internists in the region of Muenster, Germany. Patients with CHD were sampled from seven hospitals and surveyed with a mailed questionnaire on risk factors, lifestyle and compliance. Descriptive statistics and logistic regression models were used for statistical analyses.
Results: In total, 66.6% of physicians (n=681) and 73.2% of patients (n=980) participated in the respective surveys. 69% of physicians claimed to know at least one guideline on secondary prevention of CHD. Generally, physicians expressed positive attitudes towards guidelines. Lack of reimbursement (84%), lack of patient compliance (70%) and lack of time (51%) were the most frequently named barriers to guideline implementation. However, 38% of physicians reported to start drug treatment at systolic blood pressure of $\geqslant$ 150 mmHg, and 42% stated to start lipid lowering drug treatment only at total cholesterol values of $\geqslant$ 250 mg/dl. Internists (p=0.01) and those reporting guideline knowledge (p=0.02) were more likely to start treatment of hypertension and hypercholesterolemia according to the guidelines. Generally, patients reported good knowledge of CHD. 53% were able to correctly define the term 'atherosclerosis' and 62% identified the major risk factors. 77% reported to have no difficulties in complying with treatment. Concerning risk factors, however, a substantial proportion of patients was not willing to change their lifestyle, e.g. 24% of overweight patients and 31% of smokers.
Discussion and conclusions: Physicians underrated the need for vigorous treatment of risk factors in patients with CHD. Patients showed good knowledge of CHD but lack of lifestyle changes. Our findings provide physician and patient related explanations for the gap between guidelines and treatment in secondary prevention of CHD.

179 (673). CVD Prevention: Primary Health Care Providers (Date: 24th May 2005 — Free Paper Session 3.9 (Oral) — (13.30—15:00 Hours))

Nutritional Counselling in Primary Health Care: A Comparison of an Intervention by General Practitioner or Dietician

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Objective: To compare health effects, patient perspective and economic aspects of two strategies for nutritional counselling for patients in primary health care in high risk of ischaemic heart disease (IHD).
Methods: A cluster randomised trial included patients after opportunistically screening. General practitioners (GPs) were randomised to give nutritional counselling or to refer patients to a dietician for five counselling sessions over 12 months. Health effects were measured by changes in weight, waist circumference, blood lipids, and self-reported life style. Data on use of the primary health sector, medicine and admissions to hospital were obtained from registries. A cost-effectiveness-analysis was performed.
Setting: Sixty GPs in the Copenhagen County and 503 patients aged 18-87.
Results: Patients counselled by dietician were more satisfied with guidance (p<0.0001), had better self-rated knowledge on diet (p<0.0001), and more self-reported changes in their diet (p=0.0024). Weight loss was larger in the dietician group (mean 4.3 kg vs. 2.1 kg, p=0.0143) and increase of HDL-cholesterol was larger in the GP group (mean 0.14 mmol/l vs. 0.05 mmol/l, p=0.0011). Reduction of risk of IHD was larger in the GP group. Other health outcomes were not significantly different in the two groups. The price of a gained life year as well as the cost-effectiveness ration is low in both groups.
Discussion: A GP or a dietician could provide nutritional counselling in general practice with slightly different outcomes as regards weight reduction and change in lipids. GPs more effectively obtained risk reduction in relation to risk of IHD. However, GPs needed thorough encouragement to maintain a treatment programme of 12 months. It seems relevant to suggest that the GP is responsible for addressing relevant risk factors, but in the case of obesity or other condition that requires long term prevention the GP should have the possibility of referring to e.g. a dietician.

198 (608). CVD Prevention: Primary Health Care Providers (Date: 24th May 2005 — Free Paper Session 3.9 (Oral) — (13.30—15:00 Hours))

Is There Any Difference Between Guidelines Management and Target Values Definition of Arterial Hypertension and GPS' Preferences About it?

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Objectives: The aim of the study was to analyze the GP's target level blood pressure preferences treating the arterial hypertension. The study was part of the BULPRAKT-HEART-study (BULgarian PRospective Analysis of the physicians' Knowledge and Therapy choice in HEART Disease Treatment And Prophylaxis).
Materials and methods: A questionnaire-based study was carried out among 497 GPs who had followed up and had treated 120 781 patients with arterial hypertension.
Results: Our data showed that target levels for patients with uncomplicated arterial hypertension had been preferred to be maintained below 135/85 mmHg but not lower than 120/77 mmHg. The GPs had preferred to maintain blood pressure below 130/83 mmHg but not lower than 117/75 mmHg for young (20-45 years old) patients without other disease. GPs had considered blood pressure values in patients with hypertension and diabetes to be lower than 133/82 mmHg but not lower than 119/76 mmHg, for patients with hypertension after stroke lower than 133/83 mmHg but not lower than 121/77 mmHg and for patients with arterial hypertension and dyslipidemia the optimal values to be lower than 131/82 mmHg but not lower than 119/77 mmHg. According to the GP's knowledge hypertension has been defined as blood pressure values higher than 128/84 mmHg in cases of previous hypotension (basal blood pressure values lower than 100/70 mmHg).
Conclusions: The GPs had aimed the hypertension treatment to lower target values, even lower than the values being recommended by the European or National Guidelines. Since there had been no definite low limit for blood pressure values, we had found very small amplitude between the upper and low limits as a treatment targets.

230 (709). Diabetes & Metabolic Syndrome (Date: 23rd May 2005 — Free Paper Session 2.2 (Oral) — (13.30—15:00 Hours)) Diabetes, Sex, and Left Ventricular Structure in African-Americans: The ARIC Study

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Objective: To investigate the relationship between left ventricular (LV) structural abnormalities and diabetes in African-American men and women, a link which could partially explain the increased cardiovascular risk seen in this population.
Methods: We studied 514 male and 965 female African-Americans 51 to 70 years old, in the ARIC Study. Diabetes, hypertension and obesity prevalences were 22%, 57% and 45%, respectively. Unindexed LV mass was higher with diabetes in both men (238±79g vs. 214±59g; p<0.001) and women (206±62g vs. 177±50g; p<0.001). Prevalences of left ventricular hypertrophy (LVH = LV mass > $51g/m^{2.7}$) were also higher with diabetes in both men (43% vs. 28%; p=0.01) and women (53% vs. 34%; p <0.001). However, increased relative wall thickness (LV diameter/sum of wall thicknesses > 0.45), was more frequent in women with diabetes (79% vs. 64%; p<0.001); but not in men (59% vs. 65%; NS). Investigating individual components of LVH as LV diameter (upper quartile) and LV wall thickness (upper median) revealed, after multivariable-adjustment, sex-specific associations with diabetes (*Table*). Men but not women with diabetes have greater risk of increased LV diameter, and women with diabetes have somewhat greater risk of increased LV wall thickness than men with diabetes. Throughout these analyses, most of the attenuation in diabetes associations was seen with adjustment for age and obesity indices.
Conclusions: In African-Americans, diabetes is associated with LV structural abnormalities. Associations of diabetes with greater LV diameter and LV wall thickness suggest gender-specific mechanisms of LV adaptive response. Attenuation seen in adjusted associations suggests that the higher frequency of structural abnormalities seen in diabetes may be mediated by factors other than hyperglycemia.

245 (667). Diabetes & Metabolic Syndrome (Date: 23rd May 2005 — Free Paper Session 2.2 (Oral) — (13.30—15:00 Hours)) Prevalence and Characteristics of Metabolic Syndrome: The Need of a New Strategy of Prevention

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Background: Primary prevention of cardiovascular diseases (CVD) is based on early identification of high-risk (HR) patients requiring more aggressive therapy. US and European guidelines have included Metabolic Syndrome (MS) as a key factor associated with HR for CVD. The purpose of this study was to evaluate the prevalence of MS among the participants to the ''Lausanne Health Promotion Program'', which was based on a traditional approach to prevent CVD.
Patients and Methods: This prospective study was carried out in Western part of Switzerland. From January 2001 to June 2004, using a mobile unit, 9'222 free-living participants (P) aged 18-80y were screened with standardized methods for CVD risk factors (RF), lifestyle habits, current drugs history. MS was defined according to ATP-III criteria (JAMA 1999; 285:486).
Results: Among 3,774 females (F) and 5,448 males (M), aged from 18 to 80y, 9.6% of F and 15.7% of M achieved $\geq$ 3 criteria for MS and the prevalence of MS increased with age (decade) from 2% to 29% in F and from 6% to 26% in M. Among P with MS, hypercholesterolemia and hypertension were treated in 8% and 12%, respectively. Current smoking and lack of regular phy-

	Greater LV Diameter		Greater LV Wall Thickness	
Diabetes OR(95%CI)	**Men**	**Women**	**Men**	Women
Unadjusted	2.36 (1.48—3.77)	1.31 (0.94—1.82)	1.77 (1.13—2.79)	2.70 (1.97—3.68)
Multivariable-adjusted[†]	2.13 (1.28—3.53)	1.02 (0.70—1.49)	1.33 (0.81—2.18)	1.89 (1.34—2.66)

[†]Model adjusted for BMI, waist-hip ratio, systolic blood pressure, height, age, total cholesterol, activity level, smoking, education level and antihypertensive medication use.

sical activity were observed in 27% and 45% of these P. Furthermore, the awareness of P for the MS was about zero.
Conclusions: In regard to the high prevalence of MS among our population, new strategies are urgently requested to identify this epidemic and to provide appropriate recommendations in the whole population in order to prevent further morbidity and mortality owing to diabetes and CVD.

316 (778). Diabetes & Metabolic Syndrome (Date: 23rd May 2005 — Free Paper Session 2.2 (Oral) — (13.30—15:00 Hours)) Dietary Magnesium Intake and Incidence of Metabolic Syndrome Among Young Adults: The CARDIA Study

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Background: Experimental and epidemiological studies suggest that magnesium (Mg) intake may be inversely related to risk of type 2 diabetes and hypertension, and higher intake of Mg may decrease blood triglycerides and increase high density lipoprotein cholesterol levels. However, whether dietary Mg intake is associated with incidence of metabolic syndrome (MS) is unknown.

Methods: Using the Coronary Artery Risk Development in Young Adults (CARDIA) Study database, we included 4,863 participants aged 18-30 years at baseline in 1985-86, who were free from MS and diabetes. Incident MS was identified during the follow-up period according to the National Cholesterol Education Program/Adult Treatment Panel III (ATP III) definition. Dietary data were collected at baseline using a diet history and the information on Mg intake was derived from databases developed by the Minnesota Nutrition Coordinating Center. Other lifestyle variables and MS component information were obtained from baseline and 5 follow-up clinical examinations and self-report. Cox Proportional Hazards Models were used to determine the association between dietary Mg intake and incidence of MS.
Results: Over 15 years of follow-up, 654 incident MS events occurred. Dietary Mg intake was inversely associated with incidence of MS with adjustment for major lifestyle variables. Compared to those in the lowest quartile of Mg intake, participants in the highest quartile had a 39% reduced hazard of MS (P for trend <.001). This inverse association was attenuated but not materially altered after further adjustment for baseline body mass index and other dietary factors. Mg intake was also inversely related to incident events of each MS component defined by the ATP III cut-off point. The findings were essentially consistent in each gender-race sub-group.
Conclusion: These prospective data suggest that higher dietary intake of Mg may lead to lower incidence of MS among young adults.

Table — Relative risks and 95% confidence intervals of MS by quartiles of Mg intake

	Quartiles of Mg intake				P for trend
	Q 1	Q 2	Q 3	Q 4	
Metabolic syndrome	1.0	0.87 (0.71—1.07)	0.66 (0.52—0.83)	0.61 (0.47—0.78)	<.0001
Triglyceride	1.0	1.00 (0.83—1.21)	0.82 (0.68—1.01)	0.80 (0.65—0.99)	.01
High density lipoprotein	1.0	0.85 (0.73—0.99)	0.87 (0.74—1.02)	0.77 (0.65—0.92)	<.01
Blood Pressure	1.0	0.92 (0.78—1.09)	0.82 (0.68—0.99)	0.78 (0.64—0.97)	.01
Glucose	1.0	0.95 (0.70—1.29)	0.75 (0.53—1.05)	0.61 (0.42—0.91)	<.01
Waist Circumference	1.0	0.94 (0.80—1.11)	0.74 (0.62—0.89)	0.85 (0.70—1.03)	.03

Adjusted for age, gender, race, years of education, smoking stutus, physical activity, alcohol consumption, diabetes family history, and total energy intake.

328 (783). Diabetes & Metabolic Syndrome (Date: 23rd May 2005 — Free Paper Session 2.2 (Oral) — (13.30—15:00 Hours)) Cardiovascular Risks Associated with Impaired Fasting Glucose in Urban North India

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Objectives: The burden of diabetes and cardiovascular disease (CVD) is rapidly increasing in India, especially in urban areas. Data regarding the CV risk of persons having impaired fasting glucose (IFG), with high rate of progression to diabetes, are scarce in India. This study investigated the prevalence of impaired fasting glucose and its associated CVD risks in a cross-sectional community based survey carried out in urban Delhi.

CV Risk factors	Normoglycemia (FPG<100mg/dl)	Impaired fasting glucose (FPG= 100mg/dl)	P
Mean(Median) Serum Insulin	20 (17)	25 (19)	<0.001
Hypertension (%)	23	29	<0.001
Total: HDL cholesterol ratio $\geq$ 5 (%)	34	42	<0.001
Serum Triglycerides $\geq$ 150 mg/dl (%)	36	46	<0.001
BMI $\geq$ 25 kg/m^2 (%)	37	47	<0.001
Waist circumference >90 cm in men and 85 cm in women (%)	31	43	<0.001
Metabolic Syndrome (NCEP ATP III) %	15	38	<0.001

Methods: 2859 urban adults (52% women), aged 35-64, selected using multistage startified sampling, underwent comprehensive assessment for cardiovascular risk. ADA criteria were used to define diabetes and impaired fasting glucose (fasting plasma glucose≥100 mg/dl in absence of diabetes).Diabetics (403 in number) were excluded from this analysis.
Results: The mean age of those with or without IFG was same, 47 years. The prevalence of IFG was 28% in men and 26% in women, and did not show any significant changes with age, sex, or educational status. This was much higher than the prevalence obtained with the previous criteria(fasting plasma glucose≥ 110 mg/dl). Mean levels and prevalence of the various risk factors were significantly higher in those with IFG as compared to persons with normoglycemia (see Table). Over a third of individuals with IFG had metabolic syndrome (by NCEP ATP III criteria), while 6% had more than 20% 10-year risk of CHD by framingham criteria. On multi-variate analysis, waist circumference >90 cm in men and >85 cm in women (OR 1.6 95% CI, 1.3-2.0), and presence of high blood pressure (OR 1.3 95%CI, 1.1-1.6) were independent predictors for IFG.
Conclusion: The study demonstrates the high prevalence of impaired fasting glucose in urban Asian Indians, irrespective of age, sex or educational status. Furthermore there is a siginificant clustering of metabolic risk factors with IFG in urban Indians which has implications for routine comprehensive cardiovascular risk screening in such identified individuals.

379 (833). Diabetes & Metabolic Syndrome (Date: 23rd May 2005 — Free Paper Session 2.2 (Oral) — (13.30—15:00 Hours)) The Burden and Impact of Cardio-vascular Disease Among Diabetics in Canada: Improved Surveillance for Better Prevention

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Cardio-vascular disease is a significant co-morbidity associated with diabetes worldwide. The burden and impact of cardio-vascular disease among diabetics in Canada was examined and measured using comprehensive, population-based data from the National Diabetes Surveillance System (NDSS). The NDSS is based on the linkage of provincial and territorial administrative health data (physician visits, hospitalizations, mortality, and health care registration files) covering over 98% of the Canadian population. The system also includes aboriginal populations. The NDSS produces, on an ongoing basis, data on the prevalence, incidence, premature mortality, complications/co-morbidities (including cardio-vascular disease or CVD) and health services utilization for diabetes at the national and regional levels. Overall, the prevalence of diabetes in 2002/2003 was approximately 6.2 % of the population aged 20 and over in Canada. The annual age-standardized prevalence rate-ratios for CVD requiring hospitalization among diabetics as compared to non-diabetics were 2.8-3.6 among females, and 2.2-2.9 among males. Results for heart failure, hypertensive disease, ischemic heart disease, stroke, and acute myocardial infarction specifically were similar, and patterns among high risk groups were also examined. These findings are used at the national and regional levels for the development of enhanced strategies and interventions aimed at reducing the burden and impact of cardio-vascular disease among diabetics through enhanced prevention, early detection, and management, in particular among high risk groups.

37 (554). Early Life and Childhood Influences (Date: 23rd May 2005 — Free Paper Session 2.4 (Oral) — (13.30—15:00 Hours)) Within-Person and Year-to-Year Variability in Plasma Cholesterol Levels among Participants from age 8 to 18

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Abstract: Variability in blood lipids levels with increase in age has implications for cholesterol screening and accurate assignment of children to risk categories. This study was conducted to assess the within-person variability in plasma lipid and lipoproteins, over time.
In Project HeartBeat!, 678 healthy children aged 8, 11 and 14 years at baseline were enrolled and examined at 4-monthly intervals for up to 4 years. We used a mixed longitudinal, or synthetic cohort design with continuous observations from age 8 to 18 years to estimate within-person variance of plasma total cholesterol (TC), high-density lipoprotein-cholesterol (HDL-C), low-density lipoprotein-cholesterol (LDL-C) and triglycerides (TG). A multilevel linear model was used. The relationship of within-person and inter-individual variance with age, sex and body mass index was evaluated. Likelihood ratio tests were conducted by calculating the deviation of −2log(likelihood) within the basic model and alternative models. The square root of within-person variance provided the retest reliability (within-person standard deviation) for plasma TC, HDL-C, LDL-C and TG.
A total of 5809 measurements were available. We found ±13.6 percent retest reliability for plasma cholesterol, ±6.1 percent for HDL-cholesterol, ±11.9 percent for LDL-cholesterol and ±32.4 percent for triglycerides. The change in within-person variance over age showed a curvilinear pattern for plasma TC, HDL-C and LDL-C with least changes observed at age 12 for TC and LDL-C and at age 10 to 12 for HLD-C. A steady increase in within-person variance was noted for TG from age 8 to 18. Intra-individual variability in plasma lipids was significantly related to age and body mass index.
These findings have implications for screening guidelines as the magnitude of within-person variability of plasma lipids influences the ability to classify children into risk categories recommended by the National Cholesterol Education Program.

44 (572). Early Life and Childhood Influences (Date: 23rd May 2005 — Free Paper Session 2.4 (Oral) — (13.30—15:00 Hours)) Exploration of the Fetal Origins Hypothesis: Does Impaired Fetal Growth Materially Influence Subsequent Blood Cholesterol Levels?

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Objectives: There is much current interest in promoting ''healthy heart'' awareness amongst women. However, little is known about the reasons behind the lower rates of heart disease amongst women compared with men, and why this risk difference diminishes with age. Some of the classical risk factors for coronary death may act differently amongst men and women. Previous comparative studies have generally had insufficient numbers of women to quantify such differences reliably.

Methods: We carried out an individual participant data meta-analysis of 41 cohort studies. Cox models, adjusted for age and stratified by study, were used to estimate hazard ratios for coronary death, comparing men to women. Further adjustments were made for several proven coronary risk factors to quantify their contributions to the gender differential. Sex interactions were tested for the same risk factors.
Results: During 4 million years of follow-up there were 1989 (926 female) deaths from coronary heart disease (CHD). Age-adjusted distributions of blood pressure were similar in both sexes, but mean levels of cholesterol and triglycerides were substantially greater in postmenopausal women compared with men of the same age. The age- and study-adjusted male to female hazard ratio (95% confidence interval) was 2.05 (1.89-2.22). Adjustment for cigarette smoking (current versus not) explained the largest component (20%) of this hazard ratio. Systolic blood pressure was much more strongly related to coronary death for women than men (p=0.002), but body mass index was a stronger risk factor for men (p=0.001). In contrast to previous claims in the literature, women with diabetes were not at significantly greater risk of death from CHD compared with men with diabetes (p=0.61). Simultaneous adjustment for all risk factors explained about a quarter of the excess relative risk of CHD in men compared with women.
Conclusions: Only a small amount of the sex differential in coronary death could be explained by differences in classical risk factors including blood pressure, lipids and cigarette smoking. The finding of a greater hazard associated with increases in blood pressure in women, together with more adverse lipid profiles in postmenopausal women, may partially explain the attenuation of the sex difference with age and suggest that more aggressive blood pressure and lipid lowering strategies may help to offset the increase in CHD risk that is apparent in older women.

168 (666). Early Life and Childhood Influences (Date: 23rd May 2005 — Free Paper Session 2.4 (Oral) — (13.30—15:00 Hours))

Overweight/Obesity Prevalence in Children and Adolescents at a Population in the South of Brazil

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Objective: To determine the prevalence of overweight and obesity in children and adolescents of Florianopolis, Santa Catarina State, Brazil. To determine the association between overweight/obesity and others coronary heart disease risks factors.
Methods: A questionnaire, physical examination and blood analyses were collected from randomized sample from school kids aged range from 7 to 18 years old. For the overweight/obesity diagnosis, we used the BMI-for-age growth charts, for the National Center for Health Statistics — Centers for Disease Control and Prevention — USA. For associations between overweight/obesity and others risk factors we used chi-square method.
Results: 1,053 students participated, with age ranged from 7 to 18 years old. 14% of the sample was overweight, 10% was obese and less than 1% was underweight. Findings show that children with age ranged between 7 and 12 years old were more frequently overweight and obese (29% versus 19%, p=0.011). Children and adolescents overweight or obese more likely have hypertension (21% versus 12% p=0.005), with higher levels of triglycerides (31% versus 20% p=0.006), higher levels of LDL-cholesterol (26% versus 18% p=0.037) and C-reactive protein upper quartile (46% versus 18% p<0.001) .We didn't find any association between overweight/obesity and dietetic characteristics, physical activity.
Discussion: Our study demonstrated that, when compared with the national and literature, the results showed high prevalence of overweight and obesity at this sample, and associated with others high impact cardiovascular risk factors. These findings suggest that this population is at a nutritional transition from underweight to overweight, like others Latin America samples. Therefore, primary prevention programs must be carrying out, to control this risk factor with epidemic proportions. This intervention could prevent ischemic heart disease in adulthood.

192 (684). Early Life and Childhood Influences (Date: 23rd May 2005 — Free Paper Session 2.4 (Oral) — (13.30—15:00 Hours))

The Cardiovascular Risk Factor Profile of Grandparents and its Contribution to Infant Birthweight in the Lifeways Cross-generation COHORT Study

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The Republic of Ireland has the highest rate of cardiovascular disease in pre-enlargement European Union, a phenomenon not fully explained by classical risk factors. The contribution of material and psychosocial risk factors is not well understood and longitudinal data are sparse. The Lifeways Cross-Generation Study is a unique cohort study of three generations of 1000 Irish families established to examine the influence of classical and psycho-social risk factors across the life-course.
Objective: To describe the cardiovascular risk factor profile of grandparents and to relate in particular maternal grandparental characteristics to infant birth-weight.
Methods: 1124 Mothers were recruited at the first antenatal visit between October 2001 and June 2002 and hospital linkage data, including birth-weight, on their infants are available. 958 Grandparents have to date completed a detailed validated questionnaire. Height, weight, family history of CHD, systemic blood pressure and a blood sample for serum total cholesterol, lipoprotein profile and plasma fibrinogen level were recorded Analysis was by ancova and logistic regression, with baby's birth-weight as the independent variable.
Results: Mean age (SD) was 58.5(8.9) for grandmothers and 61.1(9.6) for grandfathers. Grandmothers were more likely to be current smokers, 33% versus 24.2%. Seventy six percent of grandmothers and 81.2 % of grandfathers were overweight, with a body mass index (BMI) of >25 kg/m^2, with 37.4% and 35% obese (BMI of >30 kg/m^2).
Twenty eight percent of grandmothers and 27% of grandfathers were on anti-hypertensive medication. Mean systolic blood pressure (SD), 138.1(20.3) and 140.7(19.7) and diastolic blood pressure 83.2(10.3) and 84.6(11.71) respectively, was comparable between grandparents.
Grandmothers had a higher mean cholesterol than grandfathers 5.7(1.07) versus 5.4(1.04) p= 0.002. Eighteen percent of grandmothers and 13.5% of grandfathers had a serum fibrinogen of >4gm/L. Twenty five percent of grandfathers had an LDL/HDL ratio of > 3 versus 19% of grandmothers, indicating moderate risk.
Infant's birth weight was significantly and independently associated with maternal grandmother's level of education (p=0.04) and her BMI (p=0.08).
Discussion: These data indicate that grandparents have a more adverse risk factor profile than the general population, which may reflect some self-selection bias at recruitment. However preliminary findings in relation to BMI also indicate that factors

across generations may be influential, both related to socio-cultural and possibly genetic influences.
Conclusion: The Lifeways project is unique in Ireland, is one of few such studies Internationally and has to potential to contribute significantly to our understanding of life-course processes in the aetiology of cardio-vascular disease.

203 (690). Early Life and Childhood Influences (Date: 23rd May 2005 — Free Paper Session 2.4 (Oral) — (13.30—15:00 Hours))

Low Birthweight and Markers of Inflammation and Endothelial Activation in Adults — The Aric Study

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Background: To test the hypothesis that low birthweight, reflecting unfavorable stimuli during a critical prenatal period, might produce a longstanding proinflammatory tendency, we investigated whether low birthweight is associated with alteration in blood levels of markers of inflammation and endothelial activation in middle-aged adults.
Methods: The Atherosclerosis Risk in Communities (ARIC) Study enrolled white and African-American subjects aged 45-64 years sampled from four U.S. communities. Participants were asked their birthweight. Respondents indicating qualitatively a low birthweight or quantitatively a birthweight < 2500g were classified as having low birthweight. An inflammation/endothelial activation score from 0 to 6 was created, one point being given for each above-median value of white blood cell count, fibrinogen, von Willebrand factor and Factor VIII, and for each below-median value of albumin and aPTT. Multiple logistic regression evaluated the adjusted association of low birthweight with a high (> 4 points) score.
Results: Of the 10555 individuals reporting birthweight and with available information on all markers and covariates, 361 (3.6%) reported low birthweight. The mean (standard deviation) score was 3.5 (1.4) for those with low birthweight and 3.1 (1.6) for those in other birthweight groups (P<0.001). In logistic regression models adjusted for gender, ethnicity, age, study center, educational level, and current drinking and smoking status, those with low birthweight had an increased odds of having a high score (OR = 1.35, 95% CI = 1.09 -1.68) compared to participants with normal or high birthweight. Additional adjustment for BMI and WHR modestly increased the odds ratio for the overall association (OR=1.43, 95% CI = 1.15 -1.79).
Conclusion: In the ARIC Study, low birthweight predicted greater inflammation and endothelial activation, as indicated by the higher score of blood markers, consistent with the hypothesis that fetal stressors may result in a hyper-responsive innate immune system. This could be mediated by altered gene expression (fetal programming). Such a pro-inflammatory tendency could help explain the association of low birthweight with elements of the metabolic syndrome and atherosclerosis.

205 (691). Early Life and Childhood Influences (Date: 23rd May 2005 — Free Paper Session 2.4 (Oral) — (13.30—15:00 Hours))

Body Mass Index and Waist Circumference Cut-off Values for the Identification of Cardiovascular Risk Factors in Chinese Children

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Background: There is mounting evidence to show that body mass index (BMI) and waist circumference correlate well with cardiovascular risk factors (high blood pressure, high blood lipids and insulin level) in obese subjects. Optimal BMI and waist circumference thresholds for black and white children to predict risk factor clustering have recently become available. The corresponding information is lacking in Chinese children.
Objective: To study the relationship between BMI/ waist circumference and cardiovascular risk factors in Chinese children and to explore the possibility of using cut-off values for BMI and waist circumference to predict cardiovascular risk factors.
Methods: A cross-sectional study of 719 normal weight and overweight/obese children (382 boys, 337 girls) of age 6 to 12 years recruited from the community. Cardiovascular risk profiles (high-density lipoprotein, low-density lipoprotein, triglyceride, glucose and insulin levels), blood pressure and anthropometric indices were measured.
Results: Waist circumference exhibited stronger correlation with almost all of the cardiovascular risk factors than BMI. Among the studied metabolic variables, systolic blood pressure showed the highest degree of association with both BMI and waist circumference, followed by insulin level, triglyceride level, and high density lipoprotein (negative). Plasma glucose and low density lipoprotein had a small but significant correlation with the two obesity indices. ROC analyses revealed that the areas under the curves ranged from 0.78 to 0.83. The optimal cut-off values for BMI were at the 69th and 77th percentiles for boys and girls, respectively; and for waist circumference at the 62th and 59th percentiles respectively. The sensitivity and specificity at the cut-off values for predicting clustering of cardiovascular risk factors (> 3 factors) ranged from 64% to 87%.
Conclusion: Waist circumference is better correlated with cardiovascular risk than BMI in Chinese children. Since waist circumference is a straightforward and simpler measurement than BMI, the use of waist cut-off values may provide a simple and practical way to identify children with increased CVS risks.
Keywords: Obesity, Body mass index, Waist circumference, Cardiovascular risk factor.

318 (779). Early Life and Childhood Influences (Date: 23rd May 2005 — Free Paper Session 2.4 (Oral) — (13.30—15:00 Hours))

Blood Pressure and Overweight in Adolescence and their Association with Insulin Resistance and Metabolic Syndrome after a 10 years-period in a Brazilian Young Population. The Rio de Janeiro Study

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Background: Insulin resistance (IR) and metabolic syndrome (MS) have been associated to a poor cardiovascular prognosis in adults. In young populations, identification of factors that could be associated to these conditions in the future might be very important for primary prevention.
Objective: We investigated MS characteristics and IR by HOMA index, and their relationships with blood pressure (BP) percentile and body mass index (BMI) obtained 10 years earlier in young subjects.

Methods: 281 young subjects (145M) were evaluated at their schools in 1987-88 (12.74±1.65 y). BP was measured 3 times, and the third measure was used for analysis. Body mass index (BMI) was obtained. In 1997-98 (21,61±1,86 y), they were examined at the hospital. BP and BMI were obtained and cholesterol (C), tryglicerides (TG), LDL-C, HDL-C, glucose (G) and insulin (I) were measured after a 12h fasting. HOMA was calculated with the formula: [I (μUI/ml) X G (mmol/l)]/22.5. They were normotensive when BP <= 50^{th} percentile at school or < 140/90 mmHg at the hospital and hipertensive when BP percentile $\geq$ 95 at school or >= 140/90 mmHg at the hospital. When BMI was >= 85^{th} percentile for age and sex at school or >= 25kg/m^2at the hospital, overweight was present. IR was considered when HOMA percentile >=80 obtained in a Brazilian population survey for risk factors, including this sample (n=2264, 4-94 y). MS was defined when 3 or more alterations were present: hypertension; overweight; diabetes or fasting glucose intolerance (ADA); low HDL-C and/or high TG (NCEP-ATP III); insulin resistance (HOMA >=4.48 for male and >=4.11 for female in the group $\geq$ 18 years old). They were stratified according to the presence of MS: G1 with MS (n=26, 15M) and G2 without MS (n=255, 130M).
Results: 1)MS was detected in 9.3% and IR in 18.5% of subjects; 2)Groups were not different by age or sex; 3)G1 had higher BMI, systolic and diastolic BP (p<.001) 10 years earlier; 4)G1 had higher positive BMI, systolic and diastolic BP variation between the two evaluations (p<.001); 5)Ten years earlier, G1 had 69.2% with BP percentile >=95 and 48% with overweight, compared to G2 (34.1% and 18.4%, respectively)(p<.01); 6) Ten years earlier, G1 had 38.5% of hypertensive with overweight, 26.9% of hypertensive without overweight, 7.7% normotensive with overweight, and 23.1% normotensive without overweight, while G2 had 9.8%, 24.3%, 8.6% and 57.3%, respectively (χ^2=21.382, p<.001); 7)Among those with MS, 88.5% had IR, 88.5% had overweight, 80.8% were hypertensive, 57.7% had low HDL-C and/or high TG (p<.001) and 15.4% were diabetics or had glucose intolerance (p<.004); 8) In logistic regression, high BP and overweight at school were significantly related to MS in a 10-year-period (RR=3.23, 3.07 respectively; p<.02).
Conclusion: Metabolic syndrome and insulin resistance are present in young adults and are associated to blood pressure and BMI in adolescence, emphasizing that primary prevention must begin early in life.

40 (571). Epidemiology of Coronary Heart Disease (Date: 22nd May 2005 — Free Paper Session 1.1 (Oral) — (13.30—15:00 Hours))

Short-Term and Long-Term Outcomes in 133,429 Emergency Patients Admitted with Unstable Angina or Myocardial Infarction in Scotland 1990-2000

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Objective: Though unstable angina is often thought to have a relatively benign prognosis, but has rarely been studied in unselected patients. We therefore examined short-term and longer-term outcomes in all individuals following a first emergency admission for acute coronary syndrome in Scotland between 1990 and 2000.
Methods: Using the Scottish Record Linkage System, we identified all first emergency admissions for acute myocardial infarction and angina between 1990 and 2000 in the Scottish population (5.1 million). We excluded patients admitted electively and any with a prior admission for heart disease or chest pain. Survival to five years was examined using Cox multivariate modelling to examine the independent prognostic effects of diagnosis, age, sex, year of admission, socio-economic deprivation, and co-morbidity. All differences reported were statistically significant at the p<0.01 level.
Results: In Scotland between 1990-2000, 133,429 individual patients had a first emergency admission for suspected acute coronary syndrome: 96,026 with acute myocardial infarction and 37,403 with angina. Angina patients were slightly younger.
Crude 30-day case-fatality was high for myocardial infarction patients (15.7% in men, 25.7% in women), and low for unstable angina (2.0% and 1.8% respectively). However, after excluding deaths within 30 days, crude five year case-fatality was similarly poor for angina patients as for myocardial infarction patients (23.9% versus 21.6% in men and 23.5% versus 26.0% in women). After adjusting for key factors, short-term and longer-term case-fatality in all patient groups approximately doubled for each decade of increasing age, increased substantially with a wide range of co-morbidities and modestly with deprivation.
The longer-term risk of a subsequent fatal or non-fatal event in the five years following first hospital admission was high, 54% in men after myocardial infarction (53% in women) and 56% following unstable angina (49% in women).
Discussion: Emergency admissions with unstable angina had a low initial risk of death. However, longer-term case-fatality was almost as high in patients with angina as in acute myocardial infarction survivors, approximately 5% per year. The risk of non-fatal infarction, stroke, heart failure or re-vascularisation was also substantial. Half the patients therefore experienced a fatal or non-fatal event within five years. These data strengthen the case for aggressive secondary prevention in all patients presenting with acute coronary syndrome.

43 (572). Epidemiology of Coronary Heart Disease (Date: 22nd May 2005 — Free Paper Session 1.1 (Oral) — (13.30—15:00 Hours))

Does Sex Matter in the Associations Between Classical Risk Factors and Fatal Coronary Heart Disease?

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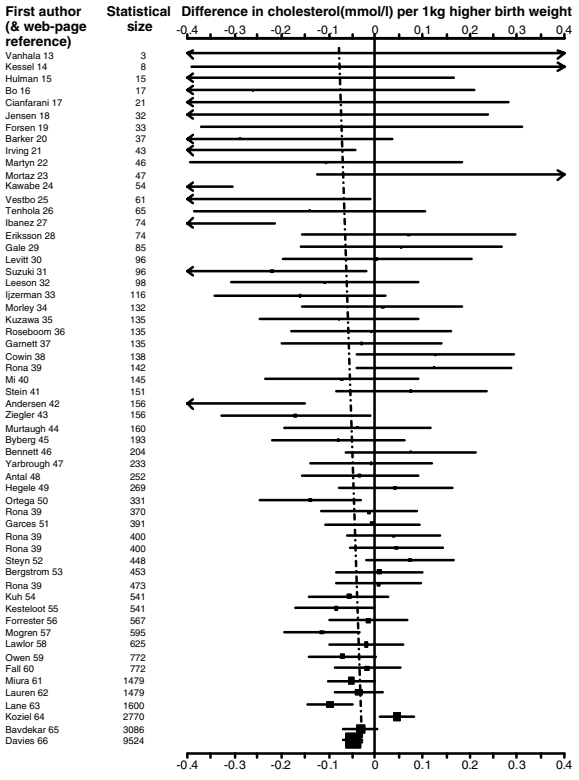
Objective: An inverse association between birthweight (BW) and subsequent blood cholesterol levels has been observed in some studies, and used to support the ''fetal-origins'' hypothesis of adult disease. To conduct a systematic review of the association between BW and blood cholesterol levels.
Methods: Studies were identified through EMBASE and MEDLINE. Studies reporting qualitative or quantitative estimates of the association between BW and subsequent blood total cholesterol levels by May 2003, or studies that had measured both BW and cholesterol but had not reported on their association, were included.
Results: Seventy-nine studies of BW and subsequent blood total cholesterol among a total of 74,122 people were identified. Regression coefficients had been published for only 11 studies, but regression coefficients were obtained for a total of 58 studies among 68,974 individuals. Inverse associations were observed in 11 of the 14 studies that had previously published quantitative estimates, but in only 18 of the remaining 51 that had reported on the direction of this association (heterogeneity p=0.004). Overall, the age and sex-adjusted estimate from the 58 contributing studies was −0.036mmol/L/kg (95% Confidence Intervals: −0.047 to −0.025), but there was significant heterogeneity between the results (p<0.0001). Part of this heterogeneity appears



to reflect stronger associations reported from the smaller studies and from the studies of cholesterol levels in infants (Figure 1).

Conclusions: These findings do not suggest that impaired fetal growth has effects on blood cholesterol levels that would have a material impact on vascular disease risk.

277 Epidemiology of Coronary Heart Disease (Date: 22nd May 2005 — Free Paper Session 1.1 (Oral) — (13.30—15:00 Hours)) The Joint Effects of Blood Pressure and Total Cholesterol on Cornary Heart Disease: An Individual Participant Meteanalysis

Background: Although there has been a recent, welcome, move towards assessing coronary risk from clusters of risk factors, available data on the joint effects of two of the strongest risk factors, systolic blood pressure (SBP) and serum total cholesterol (TC) are limited. Furthermore, no reliable data on this joint effect in the Asia-Pacific region have previously been published.

Methods: A pooled analysis, using data from 36 cohorts that provided data on SBP and TC at baseline in the Asia Pacific Cohort Studies Collaboration. Altogether, there were 373,187 participants, 79% from Asian cohorts (China, Hong Kong, Japan, Korea, Singapore, Taiwan and Thailand) and 21% from Australia or New Zealand (ANZ). Analyses through Cox proportional hazards regression models, stratified by sex and cohort and adjusted for age, body mass index and smoking, with incident (fatal or non-fatal) coronary heart disease (CHD) as the end-point. Repeat measures on all covariates were used to adjust results for regression dilution bias error.

Results: Mean SBP at baseline was 123 mmHg in Asia and 126 mmHg in ANZ; TC was 5.0 mmol/l and 5.2 mmol/l. Over 2.5 million person-years of follow-up, 3,007 CHD events were observed (64% in Asia; 72% fatal). A 10 mmHg lower SBP was associated with 34% (30-37%), 28% (21-35%), 25% (18-32%) and 21% (13-27%) lower risk of total CHD in <4.75 mmol/l, 4.75-5.49 mmol/l, 5.50-6.24 mmol/l and 6.25+ mmol/l TC groups, respectively. Similarly, there were continuous associations of cholesterol with CHD risk in all SBP groups. The associations of SBP with CHD risk were steeper in those with lower TC levels (P<0.0001). This effect modification was more pronounced in those aged <70 years compared to 71+ years, and in those residing in the Australasian region compared with the Asian region.

Conclusion: The hazard for CHD increased with increasing SBP at all levels of TC (and vice-versa). The proportional effects of lowering blood pressure may be greater when cholesterol is lower (or is lowered simultaneously). Therapy that simultaneously lowers both risk factors may thus have additional benefits over those expected from the estimated effects of independently lowering each alone.

294 (760). Epidemiology of Coronary Heart Disease (Date: 22nd May 2005 — Free Paper Session 1.1 (Oral) — (13.30—15:00 Hours))

The Incidence of Acute Myocardial Infarction Among the Elderly Population of Spain: The Epicardian and Erice Studies

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Objective: To estimate the fatal and non-fatal age- and sex-specific rates of MI for the elderly in Spain, a Mediterranean population with lower risk of coronary heart disease than other Europeans populations.

Methods: Population-based cohort study in three regions of Spain: Lugo (Galicia), Avila and Madrid. Study population: age-sex- stratified random sample of 6395 elderly persons aged 65 to 103 years old (the inception cohort), selected from the census lists of these areas in 1994. 4769 (75%) were eligible and examined at baseline. 4069 (85%) of sujects were re-examined in 1998 (four years follow-up); and ten years later(2004). Baseline Measurements (1994): Sociodemographics, personal history of CVDs, blood pressure, smoking, total cholesterol, anthropometry and fasting glucose. Outcome measurements during follow-up according to the WHO-MONICA categories for **AMI:** Definitive AMI, possible AMI or death of coronary origin, no AMI and case with insufficient data.

Results: At the fourth year, the overall fatality rate was 44% (95%CI:37-52); 50% in men and 38% in women; and increased with age in both sexes.After ten years of follow-up, we were able to obtain conclusive information on the primary outcomes in 74% of the initial cohort.

Conclusions: Incidence of AMI in Spain is 4 times higher for the elderly than for the middle-aged population. It increases with age; and is bigger in men than in women. Case fatality rate is bigger in men for all age groups. In Spain, a Mediterranean country with low risk of CHD in midle adult population, rates among the elderly are similar to countries with higher risk.

343 (792). Epidemiology of Coronary Heart Disease (Date: 22nd May 2005 — Free Paper Session 1.1 (Oral) — (13.30—15:00 Hours))

NORDAMI Project: Monitoring Trends in Incidence and Case-Fatality of Myocardial Infarction in Denmark, Sweden and Finland 1985-2002

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Background: Although ischemic heart disease is one of the leading causes of death, reliable and comparable monitoring indicators are still lacking. The EUROCISS project initiated under EU Health Monitoring Programme aims to define indicators for monitoring ischemic heart disease and other cardiovascular diseases to be used all over Europe. The NORDAMI project utilizes that the Nordic countries have comparable health information systems and comparable health care systems. In these countries registries of acute myocardial infarction (AMI) have been established based on record linkage of mortality and hospital discharge records from administrative registries. The registries are linked by person identification numbre. Based on these registries it is possible to establish reliable and comparable indicators for monitoring ischemic heart disease in line with the reccomendations from the EUROCISS project.
Purpose: To study trends in incidence and case-fatality of myocardial infarction in Denmark, Sweden and Finland 1985-2002.
Methods: *Incidence* of AMI is defined as a first time admission to hospital with AMI or death from AMI outside hospital with no AMI related admissions to hospital within the last 7 years. Three different definitions are used: a) AMI as primary or secondary diagnosis or underlying or contributory cause of death. b) definition a or other ischemic heart disease as underlying cause of death and c) definition b or sudden death as underlying cause of death. *Case-fatality* is measured as a) mortality within the first day after the AMI event, b) mortality day 1-27 days after the AMI and c) mortality 28-365 days after the AMI.
Results: The AMI diagnosis in the AMI registries has been carefully validated in each of the three countries. The sensitivity of the AMI diagnosis is 78% - 88% and the positive predictive value 90% - 96% compared to the MONICA diagnosis for the same cases. The incidence of AMI is decreasing from 1985 to 1999 for all definitions of AMI and all three countries. After 2000 when the new diagnostic criteria were established the incidence has increased. The incidence in the agegroup 25-74 years is similar in the three countries but with a more pronounced decrease in Denmark than in Finland and Sweden. Case fatality show a marked decreasing trend in all three countries especially for the mortality 1-27 days after the AMI.
Conclusion: Administrative databases of hospitalisation and mortality are valuable tools for monitoring AMI when the data can be linked by person identification number as in the Nordic countries.

74 (603). Epidemiology of Stroke (Date: 22nd May 2005 — Free Paper Session 1.3 (Oral) — (13.30—15:00 Hours))
Correlation Coefficient of Monthly Stroke Incidence with Mean of Home Blood Pressure
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Objective of the study: Relationship of blood pressure (BP) and long-term physical activity in the general population is not yet clear. On the other hand, seasonal variation of stroke incidence and outside air temperature (OAT) is well known. This study aimed to compare monthly variations in BP, physical activity, incidence of stroke and OAT for clear the interaction of these factors that concerned with stroke incidence and find out the preventive strategy for stroke.
Method: Monthly incidence of stroke was used stroke register in Akita. Observation period is from 1984 to 2000. In 2002, home BP was measured with an automatic sphygmomanometer and exercise was quantified as a step-count by a pedometer in 112 healthy volunteers. Official mean OAT by month, as reported by the Akita meteorological observatory, was used in this study. These measurements were compared with stroke incidence.
Results: Systolic BP in the morning was 7.1 mmHg higher than in the evening. Viewed by month, the lowest values in systolic and diastolic BP were observed in August. Monthly changes in BP and OAT showed a strong inverse correlation (-0.82, P=0.001). There was also a strong inverse correlation (-0.79, P=0.006) between mean systolic BP and mean step-count for all months apart from July and August, suggesting that physical activity (walking) is an important factor in decreasing BP. Correlation coefficient between cerebral hemorrhage and home BP is 0.8, and that between subarachnoid hemorrhage is 0.7.
Conclusion: The results demonstrated that OAT and walking influenced BP. Seasonal variation of hemorrhagic stroke was strongly influenced by these two factors. Long-term physical activity, even at low intensity, was effective for decreasing BP.

110 (629). Epidemiology of Stroke (Date: 22nd May 2005 — Free Paper Session 1.3 (Oral) — (13.30—15:00 Hours))
Elevated Serum Aminotransferase Level as a Risk Factor of IntraCerebral Hemorrhage: Korea Medical Insurance Corporation Study
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Background: Serum aspartate and alanine aminotransferase levels are known to be related with the risk factors of stroke, but the relation with the disease itself is not well known. We investigated the relationship between serum aminotransferase levels and the incidence of stroke.
Methods and Results: We measured the serum aminotransferase levels and traditional cardiovascular risk factors for 100147 Korean men, aged 35 to 59 years in 1990, in a prospective study. Aminotransferase levels were classified into three categories (<35, 35—<70 and $\geqslant$70IU/l). The outcomes were hospital admissions and deaths from stroke and its subtypes (ischemic, hemorrhagic, intracerebral hemorrhage [ICH], and subarachnoid hemorrhage) from 1993 to 2002. During the ten years, 1423 ischemic, 923 hemorrhagic (628 intracerebral and 201 subarachnoid), and 204 unspecified stroke events occurred. After adjustment for age and other traditional risk factors, using Cox proportional hazard models, the serum aminotransferase levels had independent positive associations with ICH. However, ischemic stroke and subarachnoid hemorrhage were not associated with aminotransferase levels. Compared with the level <35IU/l, the adjusted relative risks of ICH for an aspartate aminotransferase level of 35-<70IU/l and $\geq$70IU/l were 1.45 (95% CI, 1.16 to 1.82) and 3.69 (2.55 to 5.35), respectively. The corresponding risks for alanine aminotransferase were 1.36 (1.09 to 1.70) and 2.63 (1.80 to 3.85), respectively. These associations were consistent regardless of the level of obesity, blood pressure, fasting glucose, alcohol intake and the follow-up length.
Conclusions: These findings suggest that an elevated aminotransferase level is an independent predictor of ICH. The biological significance of the aminotransferase level for the development of ICH merits further study.

130 (644). Epidemiology of Stroke (Date: 22nd May 2005 — Free Paper Session 1.3 (Oral) — (13.30—15:00 Hours))
Burden of Stroke in Italy, Burden Attributable to Major Risk Factors and Avoidable Burden.
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Purpose: To calculate the impact of stroke in Italy in 1998, expressed in terms of disability adjusted life years (DALYs) according to the WHO Global Burden of Disease (GBD) Study.
Method: The data on first-ever stroke incidence (FES), remission rate and case fatality derived from the health information system and a research on post-FES disability of the Friuli Venezia-Giulia (FVG) Region, were used to compute the years of life lived with disability (YLDs), which were added to the years of life lost due to premature mortality (YLLs), calculated from stroke mortality data, to obtain the DALYs. The results were extrapolated to the rest of Italy after examination of national stroke registries data.
Results: Standardized estimated incidence of FES in FVG in 1998 was lower (135 cases of FES per 100,000 inhabitants) than that reported in other published national and international studies. Estimated case fatality rate and distribution of post-FES disability did not differ from other similar studies. About 100,000 YLLs and 273,000 YLDs due to FES were estimated in 1998 for Italy. Estimates of Population Attributable Risk (PAR) due to various risk factors are given, although a national statistically representative survey of major risk factors is not available. Hypertension, cigarette smoking, physical inactivity and a raised total/HDL cholesterol ratio account for most of the PAR. Avoidable burden of stroke is also calculated under several alternative hypotheses for the achievable counterfactual distribution of exposure for each major risk factor.
Conclusions: The estimated proportion of the YLDs for stroke on total DALYs (27%) is comparable with that obtained in the EURO-A group (the European area including Italy) of the GBD 2000 Study (31%), and the Australian BoD Study (35%).

172 (668). Epidemiology of Stroke (Date: 22nd May 2005 — Free Paper Session 1.3 (Oral) — (13.30—15:00 Hours))
Serum TC/HDL-C Ratio and the Risk of Ischemic and Hemorrhagic Stroke Incidence in middle aged Chinese population
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[Abstract] Objective: The relationship of blood cholesterol with stroke, or its subclasses, ischemic or hemorrhagic stroke remains controversial. The ratio of total cholesterol over high density lipoprotein cholesterol(TC/HDL-C) was proved more efficient predictive for the risk of coronary heart disease than that of TC or LDL-C and was also a independent risk factor of ischemic stroke in recent case-control studies. The purpose of this study was to explore the predictive effect of serum TC/HDL-C ratio on the incidence of ischemic and hemorrhagic stroke in middle aged Chinese populations.
Methods: This prospective study is based on the PRC-USA Collaborative Study on Cardiovascular and Cardiopulmonary Epidemiology (1981~2001). Four cohorts located in Beijing and Guangzhou, urban and rural were included in the study. The baseline data was collected in 1983 and 1984 and the follow up ended in 2000. The follow up time in average was 15.9 years. A total of 10 121 individuals (4921 men and 5200 women) from the 4 cohorts, with baseline age 35~59 years old was included in the study. During the follow-up period, 277 ischemic and 125 hemorrhagic stroke events were diagnosed.
Results: The age adjusted incidence rate of ischemic stroke was 144.1, 169.4, 166.7, 226.9 and 282.2 by the level of TC/HDL-C ratio <3.0, 3.0~, 3.5~, 4.0~,and ≥4.5 respectively, and elevated markedly in the group of TC/HDL-C 4.0~ and ≥4.5. Cox regression analyses indicated that with adjusting age, sex, site, diastolic blood pressure, blood glucose and smoking status, the relative risk of ischemic stroke incidence was 1.58 (1.06~2.37) and 1.85 (1.29~2.66) in the group of TC/HDL-C 4.0~4.5 and ≥4.5 respectively, which was significantly higher than their reference group (TC/HDL-C <3.0). It was noted that the relative risk of ischemic stroke was elevated linearly by the cut point of quintile, the value was 1.15(0.73~1.82), 1.35(0.88~2.09), 1.54 (1.00 ~2.35), 1.76(1.18~2.63), from the 2th to the 5th quintile of TC/HDL-C respectively. The relationship of hemorrhagic stroke with the level of TC/HDL-C ratio was not consistent and no statistical significance.
Conclusion: Elevated TC/HDL-C ratio was independently predictive for ischemic stroke incidence in Chinese middle aged population and might be more predictive than that of TC or LDL-C. No significant association was observed for hemorrhagic stroke.
Keywords: TC/HDL-C ratio, Ischemic stroke, Hemorrhagic stroke.

207 (692). Epidemiology of Stroke (Date: 22nd May 2005 — Free Paper Session 1.3 (Oral) — (13.30—15:00 Hours))
Predictors of Ischemic Stroke: A Prospective Community-Based Study
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Purpose: We undertook to characterize the predictors of incident ischemic stroke (IS) during 10 years of follow-up in a community-based population.
Methods: We evaluate 3,452 participants, 20 years of age or older, free of stroke and cancer, from 6,312 participants who were recruiting in the CardioVascilar Disease risk FACtor in Two-township Study. Death Certification and medical administrative records in the database of National Health Insurance till Dec 31 2002 were carried out as identification of onset of IS (ICD-9 code=432, 433, 436). Multiple laboratory measures from plasma and urine, questionnaire information, and physical examinations were obtained. Cox proportional hazard models were used to estimate the risk ratio (RR).
Results: During an average follow-up of 10.4±1.9 years, 132 incident IS cases developed (rate 3.68/1,000 person-year). For risk of IS onset, age is the most important risk factor, especially older than 65years, and greater in men than in women. Factor after adjusting age, gender and area were independent predicators of IS: diagnosed hypertension (RR=2.22 and 2.98, p=0.003 and <0.0001 for blood pressure 130-140/85-95mmHg and ≥140 /95mmHg or had antihypertensive medicines); Hyperglycemia (RR=2.81, p<0.0001 for ≥126 mg/dL or taking medicines); BMI (RR=1.6 and 2.45, p=0.0242 and <0.0001 for 24-27 and ≥27); WHR (RR=1.76, p=0.0030 for men≥0.9/women≥0.8); family history of stroke (RR=2.41, p=0.0007); plasma HDL-C (RR=1.61, p=0.0170 for men≤40/women≤50 mg/dL); apolipoprotein B (RR=2.18, p=0.0019 for ≥117mg/dL); insulin (RR=2.11, p=0.0010 for ≥12.4μIU/mL); fibrinogen (RR=1.72 and 2.18, p=0.0366 and 0.0015 for 238-304 and ≥304 mg/dL); plasminogen

(RR=2.16, p=0.0005 for ≥132%); factor VIIIc (RR=1.63, p=0.0342 for ≥144%); and urinary albumin (RR=2.04, p=0.0003 for ≥3.0g/dL). In the final multivariate model, older, male, family history of stroke, hypertension, hyperglycemia, high plasma fibrinogen and urinary albumin levels were highly significantly independent predicators for IS onset. Greater BMI, high plasma apolipoprotein B and plasminogen levels predicated borderlinely IS onset.
Conclusion: The incidence of IS is related to age, gender, family history, obesity, and chronic disease such as hypertension and diabetes. Despite the borderline relative risk of some characteristics, plasma fibrinogen, plasminogen, and apolipoprotein B levels, and microalbuminuria could predicate IS onset during 10 years follow-up.

220 (701). Epidemiology of Stroke (Date: 22nd May 2005 — Free Paper Session 1.3 (Oral) — (13.30—15:00 Hours))
General Obesity Contributes to Risk of Ischemic Stroke in Addition to Metabolic Syndrome
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Objective: Waist circumference was adopted as the indicator of fat accumulation in the definition of metabolic syndrome (MS) in the ATP III guideline. But evidence is needed to clarify if general obesity contributes to cardiovascular risk further than MS. This study examines the roles of MS and general obesity (OBE) in development of ischemic stroke (IS).

RR (95% CI)				
	Men		Women	
	OBE −	OBE +	OBE −	OBE +
0	1.0 −	NA	1.0 −	NA
1~2	3.2 (1.1~9.2)	4.8 (1.2~19.5)	1.6 (0.5~5.4)	2.8 (0.7~11.8)
>=3	5.2 (1.7~15.6)	6.5 (2.1~20.0)	1.9 (0.5~6.8)	3.4 (1.0~11.8)

Method: Residents were recruited from two Taiwanese townships- Chutung and Puzhi- at the baseline examination. After excluding those who reported having pre-existing stroke or cancers, and who had missing value of any MS component variable, baseline data from 3452 adults (>=20 years old) was used here. We linked subjects' medical charge records in the database of National Health Insurance, and information from death certificates to identify the onset of IS (ICD-9=432, 433, 436) up to the record on Dec.31 2002. Average follow-up time was 10.4 years. Cox's model was applied to analyze the relative risk (hazard ratio) of MS and OBE on IS, adjusted for age, age square, township, smoking, alcohol, activity, and education level. MS was defined by ATP III criteria, except the definition of central obesity were lowered to waist circumference >=90/80 cm for men/women. OBE was defined by Taiwanese definition as BMI>=27.
Result: In 3452 eligible adults, there were 132 incident IS cases. Incidence rates are 0.9, 4.8, 9.6 /1000 person-years in men with 0, 1~2, >=3 MS component disorders and are 0.6, 2.2, 7.6 /1000 person-years in women, respectively. Compared to those who had neither MS nor OBE, people with one or more MS component disorders have higher risk to IS, and the risk increases further when OBE exists. The stratum of subjects with OBE and without any component disorder was excluded from the analysis because only 8 subjects can be categorized into this group and did not develop IS, which reflects that people with obesity tend to be co-morbid with other MS component disorders.
Conclusion: When assessing the risk of IS, in addition to metabolic syndrome, general obesity should be taken into consideration.

66 (591). Genetics (Date: 23rd May 2005 — Free Paper Session 2.6 (Oral) — (13.30—15:00 Hours))
Allele t of Polymorphism —491 of APO E Gene is Associated with Atherosclerotic Lesion in Argentinean Women
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Apolipoprotein E (APO E) plays a crucial role in lipid metabolism. Quantitative variation of mRNA expression could acts as a risk factor. APO E —491 A/T polymorphism have been associated with apo E plasma levels.
Objectives: The aim of the study was to investigate the relationship of polymorphism —491 A/T in the promotor region of the APO E gene and atherosclerotic lesions in Argentinean patients of clinic in Buenos Aires.

Methods: The study population of this case-control study consisted of 260 men and 130 women (n=390) who were referred for coronary angiography because clinically suspected CHD. Genotypes, serum total cholesterol (CT), HDL and triglycerides (TG) were obtained from blood measurements of 314 participants. In addition, coronary angiography of the study participants revealed that 209 had atherosclerotic lesion (≥ 20% arterial stenosis) (66.6%) and 105 (33.4%) without lesion were considered controls.
Results: Women with allele T and younger than 61 years-old were less likely to have lesions (OR=0.16; 95% confidence interval (CI): 0.03-0.79) after adjustment for smoking, cholesterol and triglycerides. For males no significant differences were found. Only serum cholesterol level (OR: 1.01) and being men (OR: 2.33) were significantly related to risk of atherosclerotic lesions.
Conclusions: Our results indicate that a lack of allele T on APO E -491 may increase the risk of atherosclerotic lesions among middle-aged women.

78 (607). Genetics (Date: 23rd May 2005 — Free Paper Session 2.6 (Oral) — (13.30—15:00 Hours))

Large Artery Properties, Homocysteine and Genetic Polymorphism of Endothelial Nitric Oxid Synthase

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Background: Homocysteine (tHcy) was identified as a strong predictor of cardiovascular diseases, its established pathophysiological mechanism included endothelial dysfunction, oxidative stress and pro-coagulation. The aim of our study was to estimate the association between tHcy and mechanical properties of large arteries, moreover to prove the potential co-influence of polymorphism of endothelial nitric oxid synhase (eNOS).
Methods: 249 subjects (m125, f124, mean age 48.0±0.69) randomly selected from Pilsen sample of MONICA population survey. Following large artery properties were measured using automatic Sphygmocor device: radial augmentation index (AIx), showing the extend of wave reflection, central pulse wave velocity (PWV), measured between carotid and femoral artery (reflecting aortic stiffness) and peripheral PWV, measured between femoral and dorsalis pedis artery. Polymorphism of eNOS (ie. 786CT and G894T mutation) was asessed using PCR based methodology.
Results: (mean±SEM; *ANOVA; adjusted for age)
Positive association between tHcy and centrall PWV remained also, if adjusted for potential confounders (age, gender, current smoking, body mass index, mean arterial pressure, LDL cholesterol and glycaemia), odds ratio for tHcy in the 4th quartile (using central PWV in the 4th qurtile, ie. > 8.46 m/sec as dependend variable) was 4.12 (1.88-9.12). On the other hand no association was found neither with 786CT or G894T mutation of eNOS.

tHcy quartiles [μmol/l]:	I. (≤8.9μmol/l)	II. (9.0—10.6 μmol/l)	III. (10.7—12.9μmol/l)	IV. (≥13μmol/l)	p for trend *
N	64	68	55	62	—
age [years]	43.6±1.27	48.7±1.20	50.4±1.49	49.3±1.53	0.91
central PWV[m/sec]	6.81±0.18	7.19±0.20	7.51±0.29	8.71±0.44	<0.001
Peripheral PWV [m/sec]	11.21±0.41	14.0±1.19	14.5±1.62	13.4±1.21	0.96
radial AIx [%]	67.4±2.33	72.4±2.40	75.2±2.82	69.1±3.19	0.40

Conclusion: In our study we found a strong association between tHcy and aortic stiffness, independently from conventional risk profile.
Supported by grant of Ministry of Health CR

111 (630). Genetics (Date: 23rd May 2005 — Free Paper Session 2.6 (Oral) — (13.30—15:00 Hours))

Potential Effect of Apolipoprotein B100, Lipoprotein (a), and Angiotensin Converting Enzyme Gene Polymorphism in Coronary Artery Disease in Indians

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Objective: Prevalence of conventional risk factors do not account for high risk of coronary artery disease (CAD) in Asian Indians. Hence there is need to look for newer risk factors. Data regarding role of ApoB100 and ACE gene polymorphism are lacking in these patients. We studied the role of Lipoprotein [Lp (a)], Apolipoprotein B100 (Apo B100) levels and Angiotensin converting enzyme (ACE) gene polymorphism in patients having CAD.
Methods: A total of 908 subjects (490 patients of angiographically proven CAD and 418 controls with either normal coronary angiogram or negative stress test) were evaluated for Lp(a) and ApoB100 levels, with ACE deletion/insertion (DD, ID and II) genotypes being ascertained by polymerase chain reaction besides conventional risk factors.
Results: Mean age (Standard deviation SD) was 48.27 (12.07) and 49.38(12.27) years in patients with CAD and controls respectively. Prevalence of diabetes (21.8% vs. 26.3%, p=NS), hypertension (35.9% vs. 34.5%, p=NS), positive family history of premature CAD (15.7% vs. 19.1%, p=NS) and total cholesterol levels [180.4 (46.1) vs. 178.1 (48.1) mg/dl, p=NS] were similar whereas smoking (45.7% vs. 37%, p<0.01), triglyceride levels [217.84 (98.3) vs. 176.2(91.4) mg/dl, p<0.01] and LDL cholesterol levels [115.3(41.6) vs. 108.8(40.6) mg/dl, p=0.02] were higher in patients with CAD. Lp (a) and ApoB100 levels were significantly higher in patients as compared to controls [35.83(20.11) vs. 18.28(12.56) mg/dl and 171.43(62.8) vs. 107.25(59.37) mg/dl respectively, p<0.01]. Elevated Lp(a)[>20 mg/dl] and ApoB100 [>114 mg/dl] were more prevalent in patients as compared to controls (83% vs. 35.6% and 86% vs.43.1% respectively, p<0.01). Patients with normal LDL levels (<100 mg/dl) were having higher proportion of cohort with elevated ApoB100 (>114 mg/dl) levels (83.5% vs. 16.5%, p<0.01). ACE-DD genotype was more common in patients with CAD as compared to controls (64.1% vs.23.7%, p<0.01) whereas II and ID were more common in control group (43.5% vs.16.5% and 32% vs.19.4% respectively, p<0.01). On multivariate analysis, elevated Lp(a) (OR=3.89, 95% C.I.=2.42-6.27, p<0.01), Apo B100 (OR=7.56, 95% C.I=5.09-11.24, p<0.01), triglyceride (OR=3.17, 95% CI=2.17-4.63, p<0.01), smoking (OR=1.78, 95% CI=1.02-2.14, p<0.01) and ACE DD genotype were significant predictors of CAD.
Conclusion: Our population had similar conventional risk factors of diabetes, hypertension, family history and total cholesterol. In their presence elevated Lp(a), ApoB100 levels and ACE-DD genotypes were significantly associated with CAD. ApoB100 levels helps to further predict CAD in patients with normal LDL levels.

383 (836). Genetics (Date: 23rd May 2005 — Free Paper Session 2.6 (Oral) — (13.30—15:00 Hours))

Cardiac Gene Expression of Natriuretic Peptides in Different Forms of Experimental Left Ventricular Hypertrophy
Are the Changes of Gene Expressions of Natriuretic Peptides Sensitive Enough to Indicate Left Ventricular Hypertrophy in Divers Experimental Models?

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Objective: Cardiac hypertrophy is a common adaptive response of the heart to divers hemodynamic stress however, sustained intense of stimuli leads to maladaptive phenotype changes which is an independent factor for sudden cardiac death. Increased ventricular expression of several genes, including atrial- and B-type natriuretic peptide (ANP, BNP) and adrenomedullin (AM) has been reported in several experimental models of left ventricular hypertrophy (LVH). Yet, it remained to be clarified if altered expression of these genes is a consistent marker of LVH.
Design and Methods: Using three different acute in vivo models of LVH, we assessed the relationship between gene inductions, hemodynamics and the development of LVH. Conscious male SD (n=330) rats were treated by NOS inhibitor N(G)-nitro-L-arginine methyl ester (L-NAME 100mg/kg/day in drinking water) or infused subcutaneously by angiotensin II (Ang II, 33 μg/kg/h), β-agonist, isoproterenol (ISO, 100 μg/kg/h) or saline for 6, 12, 72 hours, 1 week or 2 weeks.
Results: Examination by in vivo telemetry, L-NAME and Ang II markedly elevated mean arterial pressure, meanwhile it was not altered by ISO. Ratio of LV weight to body weight was significantly elevated by L-NAME (+11.8 %, 2 weeks), Ang II (+15.4 %, 2 weeks) and ISO (25.7 %, 72 hours) (P<0.001). In parallel with the development of LVH, ANP mRNA levels were increased 8.9-, 20.4- and 4.8-fold (P<0.001) by L-NAME, Ang II and ISO, respectively. BNP mRNA expression was increased throughout the whole experiment with L-NAME, while Ang II and ISO caused only transiently elevation: 5.2- and 3.2-fold (6 hours, P<0.001) respectively. Ang II produced a rapid, transient increase in ventricular AM mRNA levels (1.4-fold, 12 hours, P<0.05). In contrast, ISO resulted in a marked decline in AM mRNA levels (0.4-fold, 6 and 12 hours, P<0.001), but L-NAME did not have effect on AM geneexpression. Changes in ANP, BNP mRNA levels were followed by an increase in ventricular and plasma peptide levels.
Conclusions: The present results show that in all three models alteration in ventricular gene expression of ANP is a sensitive indicator in the acute phase of LVH. However BNP gene expression is early, transiently upregulated at Ang II and ISO treatment, while constantly increased at L-NAME treatment during the 2 weeks of treatment. Meanwhile the gene expression of AM is differentially regulated by various forms of hypertrophic stimuli.

392 (839). Genetics (Date: 23rd May 2005 — Free Paper Session 2.6 (Oral) — (13.30—15:00 Hours)
Candidate genes TGF-â1 and PAI-1 and risk of atherosclerosis and osteoporosis in females
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Introduction: Recent knowledge's have suggested that two common diseases — atherosclerosis and osteoporosis - could share the similar risk factors. Cytokine transforming growth factor β-1 (TGFβ-1) plays an important role in many physiological processes including atherosclerotic lesions development and differentiation of steam cells to bone cells. One of the regulatory molecules, influencing concentration of TGFβ-1 is plasminogen activator inhibitor 1 (PAI-1). In both genes, functional variants in promoters have been described. We have analyzed, if the variants in TGFβ-1 (Leu10>Pro and Arg25>Pro) and PAI-1 (4G/5G) play a role in genetic determination of myocardial infarction or osteoporosis in females.
Methods: Using PCR-RFLP we have analyzed TGFβ-1 and PAI-1 variants in 1368 control healthy females, in 49 females suffering myocardial infarction, in 172 females with osteoporosis, and in 90 females with high bone density.
Results: Frequencies of the TGFβ-1 genotypes were similar in all analyzed groups. PAI-1 variant significantly affect the risk of osteoporosis development (trend P = 0.05), but not the risk of myocardial infarction.
Conclusions: We conclude that TGFβ-1 and PAI-1 gene variants did not affect risk of myocardial infarction development in females. PAI-1 4G4G homozygotes could be under higher risk of osteoporosis, but not atherosclerosis development.
Supported by research grant 7380-3 (Ministry of Health of the Czech Republic) and 1M6798582302 (Ministry of Education of the Czech Republic).

108 (627). High Blood Pressure (Date: 22nd May 2005 — Free Paper Session 1.5 (Oral) — (13.30—15:00 Hours))
A Cohort Study on the Relationship Between Nutrients Intake and the Incidence of Hypertension in Middle-aged Chinese
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Objective : To explore the relationship between nutrients intake and the incidence of hypertension in middle-aged Chinese.
Methods: A prospective study was conducted in 1048 men and women aged 35-59 years in China. The baseline nutrients intake information was collected using 24-hour recall method on three consecutive days in 1983-1984. The incidence of hypertension was determined through a resurvey in 1993-1994. The subjects were categorized into three groups according to tritiles of each nutrient intake and the relative risk of each group was calculated using the logistic regression model with the first group as the reference.
Results: During the period of 1983-1984 to 1993-1994, 171 have developed hypertension, 93 were men and 78 were women. After adjusting for drinking, baseline BMI, baseline SBP and including dietary protein and dietary sodium in the same model, the relative risk of hypertension for different protein intake group was 1.0, 0.84 (95%CI 0.53-1.34) and 0.53 (95%CI 0.32-0.86), respectively, p for trend was 0.010; the relative risk of stroke for different sodium intake groups was 1.0, 1.17(95%CI 0.71-1.95) and 1.92 (95%CI 1.17-3.17), respectively, p for trend was 0.007. There was no significant relationship between other nutrients intake and hypertension incidence.
Conclusion: Among middle-aged Chinese, protein and sodium were two of the most important dietary factors that affect the incidence of hypertension, and increasing the intake of protein and reducing the intake of sodium might be helpful to the prevention of hypertension.

129 (643). High Blood Pressure (Date: 22nd May 2005 — Free Paper Session 1.5 (Oral) — (13.30—15:00 Hours))
The Association Between Alcohol Consumption and Blood Pressure Level in Koreans
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Background: The long term heavy drinking has been known as the major risk factor of cardiovascular disorders. But, in some cardiovascular disorders such as hypertension, the prevalence of them of the groups with minimal or moderate alcohol drinking history was lower than that in abstainers.

Objectives: This study was conducted to identify the association between alcohol consumption between blood pressure level or hypertension in Koreans.
Method: The database used was 1998 National Health and Nutrition Survey Data representative for Koreans. The study subjects for final analysis were 9,322 matched all variables for analysis. The analytic method used were analysis of covariance for the association between blood pressure and level of alcohol consumption, and logistic regression analysis for the association hypertension and level of alcohol consumption (set abstainers as a referent group). Total alcohol drinking amount for a month as an independent variable was calculated by multiplying the number of drinking days/a month by mean drinking amount/a drinking day (by glass of Soju, the most popular alcoholic beverage in Korea. And the variables considered as putative confounders were the age, sex, educational status, income status, the level of total cholesterol and triglyceride, status of stress, BMI, the health-related behaviors such as cigarette smoking, regular exercise.
Results: The association between level of alcohol consumption and blood pressure were as follows; in the case of systolic blood pressure, the relationship between them was J-shaped, especially in the females and in the males after adjusting with covariates; but, in the case of diastolic blood pressure, the relationship between them was rather linear than J-shaped with higher alcohol consumption increasing blood pressure. And the OR of alcohol for hypertension in the group drinking below 2/3 bottle for a month was 0.786(95% CI:0.655-0.943) and those in the groups drinking more than 2 bottles for a month were above 1.0 significantly.
Discussion and Conclusion: Further study would be necessary to identify the reason why J-shaped relationship was prominent in female and the effect the type of alcoholic beverages other than Soju on blood pressure in Koreans.

255 (726). High Blood Pressure (Date: 22nd May 2005 — Free Paper Session 1.5 (Oral) — (13.30—15:00 Hours))
The Relationship Between Afternoon Nap and Blood Pressure: Results from Chinese Muca Study
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Objectives: To investigate the association between afternoon nap and blood pressure value and incidence of hypertension in Chinese adults.
Methods: A cross-sectional survey of 15,573 men and women aged 35-59 years from 15 population samples was conducted in 1998 in the China Multi-center Study of Cardiovascular Epidemiology. Blood pressure was taken according to WHO standard method and a standardized questionnaire was used to enquire information on habit of taking an afternoon nap (siesta) and hours of siesta. Five siesta frequency categories (no, daily <0.5h, daily [≥0.5h and <1h], daily [≥1h and <2h], daily [≥2h and ≤4h]) were used to describe the trends of the means of blood pressure and to calculate the odds ratio (OR) by multivariate regression.
Results: The means of SBP across five siesta frequency categories are 123.6, 124.2, 123.9, 126.5, 128.6 mmHg in men and 121.2, 121.7, 121.7, 124.4, 122.6 mmHg in women, respectively, and the means of DBP are 80.0, 79.4, 79.8, 81.4, 83.1 mmHg in men and 76.7, 76.3, 76.7, 78.3, 77.1 mmHg in women, respectively. The association of SBP and DBP to siesta is still positively significant (*P*=0.00 for SBP, *P*=0.01 for DBP) after adjusting for age, sex, BMI, and area.
Compared to those who did not take a siesta, the OR for hypertension in those in the highest frequency category was 1.64 (95% CI: 1.19 to 2.26). After adjusting for age, sex, BMI, and area, the OR across the siesta categories were 1.0, 0.96, 0.96, 1.28, and 1.60 (95% CI: 1.09 to 2.35) (P for trend =0.004).
Conclusions: Those subjects who took long daily siestas had increased blood pressure and increased prevalence of hypertension. It is still unknown whether this association is causal. It will be necessary to confirm our finding in prospective studies.

278 (606). High Blood Pressure (Date: 22nd May 2005 — Free Paper Session 1.5 (Oral) — (13.30—15:00 Hours))
Decreasing Population Blood Pressure: 15 years of Follow-up in the Copenhagen City Heart Study (CCHS). Sources of Measurement Variation
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The Copenhagen City Heart Study (CCHS) is a longitudinal epidemiological study of 19698 subjects followed up since 1976.
Objective: Population blood pressure (BP) levels from longitudinal observations were analysed for trends during a period of 15 years. Systematic and random variation of BP was evaluated for the purpose of identifying relevant errors in population surveys. Trends from unadjusted data are reported as well as trends adjusted for major cardiovascular (CV) risk factors and use of antihypertensive therapy, thus allowing assessment of independent BP trends.
Design: Three population surveys were performed: 1976-78 (n=14000), 1981 — 83 (n= 12675) and 1991 —94 (n = 9661).
Methods: BP was measured by a London School of Hygiene Sphygmomanometer. Measurements were strictly standardized and unchanged in the three surveys.
Time of day and year, body weight and height, body mass index (BMI), plasma cholesterol, smoking status, diabetes, hypertension, and medication were registered.
Results: Unadjusted systolic BP (SBP) levels decreased during 15 years of follow-up, and unadjusted diastolic BP (DBP) levels increased. The most important factors to consider were seasonal variation, BMI, the use of antihypertensive drug therapy, plasma cholesterol, smoking status and diabetes.
Adjustments for BMI, cholesterol, diabetes, use of antihypertensive therapy and smoking status were made in the final analyses of BP trend. The adjusted trend model demonstrated that SBP levels remained lower than SBP levels in the first survey. DBP levels increased slightly.
Conclusions: The results demonstrate a decrease in population SBP. The decrease is independent of major CV risk factors.

411 (859). High Blood Pressure (Date: 22nd May 2005 — Free Paper Session 1.5 (Oral) — (13.30—15:00 Hours))
Distribution of Blood pressure among Isfahan Rural Residents, and its Relationship with BMI
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Introduction: Obesity is an independent risk factor for the incidence CVD, type II diabetes, gall bladder disease, Cancers of several Sites, Osteoarthritis and total mortality. Weight gain during adult life, especially during the third and fourth decades, is associated with increased blood pressure.
Material and Methods: In this study a random sample of near 1500 men and women aged 16 to 85 years was selected from the 12 Villages around Isfahan. In this Corss — Sectional survey, participants visited a survey clinic, where blood pressure,

anthropometric measurments were recorded, age, sex were also used in our analysis.Body mass index (BMI) has been used to measure obesity.
Results: Subjects had mean of BMI 23.37, Systolic blood pressure 122 mmmHg and diastolic blood pressure 76mmmHg. Mean of BMI increased with age until 4049 year then decreased, systolic and diastolic blood pressure were also increased with age.Systolic and diastolic blood pressure were significantly correlated with BMI ($p<0.0001$). ANOVA showed significant difference about Systolic blood pressure among different groups of BMI($p<0.0001$).Diastolic blood pressure was also significantly different among BMI groups ($p<0.0001$).
Discussion: The most of subjocts in 3039 years and had BMI 2024.9.
A small group had BMI>40. Another important finding is the correlation between blood pressure and BMI. Usually with body mass index as the measure of relative weight ,our result is similar to such studies that showed blood pressure changes is affected by BMI changes.Increasing weight has been shown to increase salt retention.Results strongly suggesting that weight control is a necessary element of hypertension control.
Intervention to control hypertension through primary prevention i.e by decreasing the rate at which new cases of hypertension develop are emphasized.

27 (546). Hypertension Control (Date: 24th May 2005 — Free Paper Session 3.2 (Oral) — (13.30—15:00 Hours))
Hypertension Control in a Peruvian Elderly Population
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Objective: To report the results of hypertension treatment in an elderly population of a Blood Pressure Control Program in Peru, during its first year of working.
Methods: A total of 683 elderly hypertensive patients were evaluated from March 2002 to February 2003 by cardiovascular specialists (cardiologist and internists). Blood pressure levels, body mass index, lipid and glucose levels, as well as target organ damage and medications were recorded for all patients. Analyzable data were obtained in 662 patients.
Results: Mean age was 78.42 ±12,54 years; most of them were women (62.52%) and natives (93.65%); with a history of hypertension of 23.81±2,63 years; non-smokers(62.24%). Blood pressure control was achieved in 78.1% of total hypertensive patients. Elderly hypertensive had: Dyslipidemia (66.40%), diabetes mellitus (24.38%), obesity (30.32%), renal or hepatic disease (3.76%). Pharmacological treatment was based on: Angiotensin II Receptor Blockers (58.06%); Angiotensin-Converting Enzyme Inhibitors (21.74%); Calcium Antagonists (14.91%); Beta Blockers (3.19%) and diuretics (2.17%). Side effects reported were: cough (20.04%), peripheral edema (15.96%), erectile dysfunction (5.89%). The 24 hours blood pressure mean value was: 135,59/79,92 mmHg (using Ambulatory Blood Pressure Monitoring).
Conclusions: The use of the adequate treatment and global management of elderly hypertensive is related with controlled blood pressure levels and fewer side effects. A long-term intervention program for high risk elderly patients is needed to improve the current situation.

46 (574). Hypertension Control (Date: 24th May 2005 — Free Paper Session 3.2 (Oral) — (13.30—15:00 Hours))
Quinapril-Hydrochlorotyazide Versus Quinapril Alone as First Line Treatment for Severe Essential Hypertension
Dr. Sasa Loncar, Dusko Vulic, Ljilja Keric, Aleksandar Lazarevic

Objective of Study: was to explore antihypertensive effect of quinapril as monotherapy versus combined therapy quinapril-hydrochlorotyazide for new revealed severe essential hypertension without target organ damage in outpatient settings.
Method: Study is statistical sub-analysis of prospective, observational, open label, multicentric study in 11 primary health care settings centers (Results of Hemokvin Effects on Hypertension in Republic of Srpska-ROSHEMS). Follow-up lasted 12 weeks. The dose of hydrochlorotyazide was fixed to 25mg and qiunapril could be titrated according to arterial blood pressure level on follow-up visits 4 and 8 week up to 40mg maximum. Main outcome was defined as achieved target blood pressure $\leq$140 for systolic blood pressure (SBP) and $\leq$90 for diastolic blood pressure (DBP). Data selection criteria were severe hypertension (SBP $\geq$ 180 mmHg and DBP $\geq$ 110 mmHg), age over 40 years and no target organ demage revealed clinically. Out of 1146 patients included in original study the subset include 236 patients (Quinapril monotherapy group 130 and combined quinapril-hydrochlorotyazide 106 patients). We used SPSS for Windows version 10.0.1. for statistical analysis. Treatment effects in different groups was tested with χ^2statistics.
Summary of Results: Blood pressure was reduced by both treatments but the effects of combined quinapril-hydrochlorotyazide were more intensive than quinapril alone treatment. Primary main outcome achieved 60.50% in combined quinapril-hydrochlorothyazide and 39.50% in quinapril alone treatment. Baseline mean SBP of 198.25± 13.96 and 114.56±6, 75 for DBP was in quinapril monotherapy group. In combined quinapril-hydrochlorothyazide group baseline mean SBP was 202.45±21.24 and DBP 116.60±8.50. At the end of study in quinapril monotherapy group mean SBP was 152.47±14, 60 and mean DBP 88.40±7.41. In combined quinapril-hydrochlorotyiazide group mean SBP was 142.83±13.36 and DBP 87.45±7.01. Statistical analysis revealed significant lowering of average systolic blood pressure ($p<0.001$) in combined quinapril-hydrochlorotyazide group at the end of study.
Discussion: According to the antihypertensive guidelines worldwide there is no specific first line treatment for severe essential hypertension unless there is concomitant disease but many trials showed that lower blood pressure reduce risk for cardiovascular target organ damage. This study reveal that combination therapy as first line treatment closely gets to the blood pressure target values than monoterapy and thus lower the risk for cardiovascular disease.

175 (670). Hypertension Control (Date: 24th May 2005 — Free Paper Session 3.2 (Oral) — (13.30—15:00 Hours))
Effects of Different Blood Pressure Lowering Regimens on Major Cardiovascular Events in Important Patient Subgroups
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Objective: To determine the effects different blood pressure lowering regimens on major cardiovascular events in important patient subgroups.
Methods: Prospectively-designed overviews of randomised trials comparing blood pressure lowering regimens based on several different drug classes (angiotensin converting enzyme (ACE) inhibitors, calcium antagonists, angiotensin receptor blockers (ARB) and diuretics or beta-blockers). For each trial and each of six pre-specified outcomes, estimates of relative risk (RR) were calculated for individuals in each patient subgroup (diabetes/no diabetes, male/female and younger/older). Pooled estimates were calculated using standard statistical techniques.

Heterogeneity of the pooled treatment effects between subgroups was evaluated using a chi-squared test.
Results: 29 trials collectively including over 160,000 individuals and 17,000 major vascular events contributed to these overviews. Total major cardiovascular events were reduced to a comparable extent in individuals with and without diabetes by regimens based on angiotensin converting enzyme inhibitors, calcium antagonists, angiotensin receptor blockers or diuretics and/or beta-blockers (all p homogeneity>0.19). With a few exceptions, similar proportional reductions in risk were also observed in patients of different age (aged 65 and $\geq$ 65 years) and sex.
Conclusion: The short-to-medium term effects on major cardiovascular events of the blood pressure lowering regimens studied were broadly comparable in different patient subgroups. Overall, treatment with any number of commonly used blood pressure lowering regimens reduces the risk of total major cardiovascular events. Furthermore, larger blood pressure reductions produce larger reductions in risk.4

228 (707). Hypertension Control (Date: 24th May 2005 — Free Paper Session 3.2 (Oral) — (13.30—15:00 Hours))
A Study of Effect on Hypertension Control by Using the Practice Guidelines on Prevention and Control of Hypertension in Community
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Objective: To evaluate the effect on control of hypertensives by using the Practice Guidelines on Prevention and Control of Hypertension in Community, a hypertension guideline initially funded by the Beijing Bureau of Health and the Science and Technology Department of Beijing and established by a guideline committee comprised of tens of authorized specialists in China, being easier for the community health care workers to understand and apply.
Methods: Four community health centers (two from urban areas and two from rural areas) were selected in Beijing and divided into the intervention group and control group. From each center, 140 patients with uncontrolled hypertension (SBP$\geq$ 140mmHg and/or DBP$\geq$90mmHg) were selected and followed up for one year period. In the intervention group, community health care workers were trained with the Practice Guidelines on Prevention and Control of Hypertension in Community, and were required to use it to manage the patients.
Results: At the end of the follow up, in urban communities average SBP decreased by 21.43 mmHg in the intervention group and 16.43mmHg in the control group (p<0.01), average DBP decreased by 7.75mmHg and 3.57mmHg respectively (p<0.01). In rural communities, average SBP decreased by 20.25mmHg in the intervenition group and 12.81mmHg in the control group (P>0.05), average DBP decreased by 16.99mmHg and 8.83mmHg respectively (P<0.01). In the urban areas, control rate of HBP is 76.7% for the intervention group and 40.7% for the control group (p<0.01), while in the rural areas, the rates are 77.7% and 27.0% respectively (p<0.01). Compared to pre-training, the doctors in the intervention group master more knowledge about HBP treatment and prevention in the end of follow up, much better than their counterparts in the control group.
Conclusion: Using the Practice Guidelines on Prevention and Control of Hypertension in Community is effective in control of hypertension in Chinese communities.

381 (834). Hypertension Control (Date: 24th May 2005 — Free Paper Session 3.2 (Oral) — (13.30—15:00 Hours))
Project of Control of Hypertension in the Municipality of Jaguey Grande, Matanzas, Cuba. (CHAJAG Project)
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Summary: High blood pressure (HBP) is not only a disease, it is also a risk factor of other diseases with higher fatality rate than HBP itself. Currently HBP is not well controlled all over the world; in Cuba only 30% of the hypertensives patients are controlled. The aim of this study was to increase the number of hypertensive under control, decreasing the mean value of systolic and diastolic blood pressure of the population and to achieve a lower morbidity and mortality by diseases related with HBP. In 1997 this project started in this Municipality of 56,873 inhabitants. At the beginning two surveys were made in population samples, one to determine the magnitude of the problem and the other to evaluate the quality of medical care given to the hypertensives; after those, the family doctors and nurses were trained through seminars, lectures, workshops, etc., in the management of this disease as a community problem (*teaching the teacher* method). The results of the surveys were also discussed with the health personal. Since 1997 registers for myocardial infarction and stroke patients were carried out. The local government has increased the production of fruits and vegetables to cover the increasing demand of these products by the population. Mortality statistics are evaluated yearly. Since this year we are evaluating cardiovascular risk in all the adult population. We concluded that high blood pressure can be controlled in the community through a better detection, classification, treatment and education of patients and that increasing the control of arterial hypertension we could lowered the mortality rate by related diseases, mainly by cardiovascular diseases.
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19 (538). Inflammation (Date: 23rd May 2005 — Free Paper Session 2.5 (Oral) — (13.30—15:00 Hours))
Obesity Related Correlation Between C-Reactive Protein and the Calculated 10 Year Framingham Coronary Heart Disease Risk Score
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Objective: To clarify the role of body mass index (BMI) adjustment in predictive models for cardiovascular events that add high sensitivity C-reactive protein (hs-CRP) to the 10-year Framingham Coronary Heart Disease Risk Score (FCRS).
Methods: A cross sectional study in a group of apparently healthy individuals. One thousand five hundred and twelve apparently healthy individuals(955 men and 557 women) at a respective age of 49.7±10.6 and 50.6±9.6 years.
Results: The Pearson correlation between hs-CRP and the calculated 10-year FCRS was lower when adjusted for BMI. This

reduction was especially noted in women were it dropped from 0.247 to 0.09. The dominant role of hs-CRP concentrations was also noted in a linear regression model, again, especially noted in women (drop of the standardized coefficient from 0.517 for BMI to 0.08 for the FCRS).
Conclusions: The correlation between hs-CRP and the 10-year FCRS is partly related to the presence of obesity. Therefore, it is possible that elevated hs-CRP is in part a reflection of the presence of obesity in these individuals suggesting that BMI adjustments should be included in predictive models were hs-CRP is added to the FCRC. Based on the results of the present study we raise the possibility that the addition of BMI to the predictive model of the FCRC might attenuate the cost effectiveness of hs-CRP measurements for this specific risk assessment.

120 (636). Inflammation (Date: 23rd May 2005 — Free Paper Session 2.5 (Oral) — (13.30—15:00 Hours))
Relations of Plasma High-Sensitivity C-Reactive Protein to Various Cardiovascular Risk Factors
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Several prospective studies have demonstrated a independent association between C-reactive protein (CRP) levels and the risks of developing cardiovascular disease. Few studies, however, have explored the interrelations between CRP levels and other cardiovascular risk factors. We evaluated the relation of high-sensitivity C-reactive protein (hsCRP) with several cardiovascular risk factors such as age, blood pressure, smoking habit and serum lipids, body mass index, blood glucose, regular exercise, alcohol drinking, white blood cell counts in a cross-sectional survey. Plasma hsCRP was measured by immunoturbidimetry in 202 subjects, aged over 50 years, who entered out health-check survey in a rural area of Jeollanamdo, Korea. Plasma hsCRP level was 1.9±3.0 mg/dl. There were significant associations between hsCRP levels and age, white blood cell counts, blood glucose, diastolic blood pressure, HDL-cholesterol, body mass index and smoking status. In stepwise multivariate regression analysis, white blood cell counts, age, blood glucose, smoking status and body mass index were independent correlates of hsCRP levels. In conclusion, plasma hsCRP levels were associated with several cardiovascular risk factors, and these data are compatible with the hypothesis that CRP levels may be a marker for preclinical cardiovascular disease. Further what we need now are prospective studies to evaluate the association of C-reactive protein concentrations with subsequent cardiac events.
Keywords: C-reactive protein, Glucose, Body mass index, Risk factors.

170 (666). Inflammation (Date: 23rd May 2005 — Free Paper Session 2.5 (Oral) — (13.30—15:00 Hours))
C-Reactive Protein Distribution in Children and Adolescents at a Sample In the South of Brazil
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Objective: To determine the prevalence of high sensitivity C-reactive protein in children and adolescents of Florianopolis, Santa Catarina State, Brazil. To determine the association between high levels of C-reactive protein and others coronary heart disease risks factors.
Methods: A questionnaire, physical examination and blood analyses were collected from randomized sample from school kids aged range from 7 to 18 years old. For the C-reactive protein quantitative determination, we used the immunonephelometry method. We consider C-reactive protein high levels the upper quartile. To determine associations between C-reactive protein and others risk factors we used chi-square method.
Results: 1,009 students participated, with age ranged from 7 to 18 years old. The upper quartile cut point was 0.9025 mg/L. Findings show positive associations between C-reactive protein high levels and children form public schools (26.4% versus 22.1%, p=0.020), more than 8 years mother instruction (27.9% versus 23.7%, 0.027), high ingestion of saturated fat (26.1% versus 21.7%, p=0.027), negative family history of myocardial infarct (26.4% versus 21.1%, p=0.003), upper quartile of total cholesterol (29.4% versus 23.5%, p=0.005), lower quartile of HDL-cholesterol (33.1% versus 22.6%, p<0.001), upper quartile of LDL-cholesterol (30.9% versus 23.1, p<0.001), overweight/obesity (45.9% versus 18.7%, p<0.001) and black children (29.9% versus 24.6%, p=0.015).
Discussion: Our study demonstrated that many risk factors could be associated with C-reactive high levels, especially the lipoproteins and obesity. We also showed that there are many behavior determinants in children and adolescents that could influence the C-reactive protein values. The control of this risk factors and habits could prevent the acceleration of atherosclerosis progression even in childhood. This intervention could prevent ischemic heart disease in adulthood.

209 (629). Inflammation (Date: 23rd May 2005 — Free Paper Session 2.5 (Oral) — (13.30—15:00 Hours))
Is High-Sensitivity C-Reactive Protein Associated with Carotid Atherosclerosis in Healthy Koreans?
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Background: There is a positive association between chronic inflammation and the risk of cardiovascular disease, but whether there is an association between C-reactive protein and carotid atherosclerosis is controversial. We investigated the relationship between high-sensitivity CRP (hsCRP) levels and carotid intima-media thickness (IMT) in healthy Koreans.
Design: We measured hsCRP levels, the carotid IMT, and conventional cardiovascular risk factors including obesity parameters, blood pressure, lipid profiles, insulin resistance, and smoking habits in 849 volunteers (35—79 years old) in a cross-sectional study.
Results: Higher hsCRP quartile groups had higher mean IMTs, as compared to the lowest quartile ($p < 0.001$ for the trend across quartiles). However, after adjustment for age, the relationship between hsCRP level and IMT was substantially weaker ($p = 0.040$). After additional adjustments for conventional cardiovascular risk factors, no significant association was observed ($p = 0.829$). The unadjusted risk for a high carotid IMT value ($\geq$ 1.0 mm) was also positively related to hsCRP quartile, but this relationship was not significant after adjustment for age and other cardiovascular risk factors.
Conclusions: Both hsCRP levels and the carotid IMT were strongly correlated with conventional cardiovascular risk fac-

Relationship between high hsCRP and carotid IMT

	Unadjusted		Age-adjusted		Age and hypertension—adjusted		Multivariate—adjusted**	
	Mean IMT, mm	p*	Mean IMT, mm	p*	Mean IMT, mm	p*	Mean IMT, mm	p*
Pooled								
1	0.699		0.717		0.721		0.733	
2	0.721	0.249	0.732	0.367	0.733	0.486	0.733	0.981
3	0.756	0.004	0.741	0.164	0.738	0.343	0.735	0.924
4	0.768	<0.001	0.751	0.046	0.749	0.103	0.737	0.836
p for trend	<0.001		0.040		0.103		0.829	
Men								
1	0.710		0.720		0.723		0.744	
2	0.730	0.454	0.745	0.299	0.745	0.369	0.749	0.519
3	0.758	0.081	0.751	0.216	0.747	0.329	0.743	0.703
4	0.774	0.016	0.755	0.141	0.755	0.182	0.741	0.786
p for trend	0.009		0.135		0.187		0.833	
Women								
1	0.688		0.715		0.720		0.728	
2	0.710	0.404	0.716	0.958	0.719	0.947	0.718	0.688
3	0.753	0.016	0.730	0.544	0.727	0.791	0.724	0.880
4	0.762	0.005	0.745	0.211	0.740	0.410	0.734	0.822
p for trend	0.002		0.184		0.391		0.789	

*Compared to first hsCRP quartile.

*Adjusted for age, body mass index, waist circumference, total cholesterol, total per HDL cholesterol ratio, homeostasis model assessment of insulin resistance, hypertension, diabetes mellitus, and smoking.

tors, but there was no independent association between hsCRP levels and carotid IMT in healthy Korean adults.

254 (724). Inflammation (Date: 23rd May 2005 — Free Paper Session 2.5 (Oral) — (13.30—15:00 Hours))

Predictive Value of C Reactive Protein Curves During Acute Coronary Syndromes in Secondary Prevention: A Prospective Study on 2645 Consecutive Patients

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Introduction: Inflammation plays a key role in the outburst of acute coronary syndromes (ACS) through plaque destabilization as well as in the evolution of the ACS by means of the acute phase inflammatory response to myocardial injury. Our aim was to set up the bond between the two inflammatory steps and to perceive how they influence the evolution of ACS.

Methods: 2645 patients with acute coronary syndromes consecutively admitted in our hospital over a ten year period were included in the study. The patients were eligible for enrolment if they presented within four hours of the chest pain suggestive of ACS and if they did not have elevated C reactive protein (CRP) levels at admission explicated by any associated medical condition.

The patients were divided in two groups: A. 1252 patients with acute myocardial infarction, and B. 1393 patients with instable angina.

For each patient the levels of CRP were determined an admission and on days 1—3, 5-7, 10-14 and curves for kinetics of the inflammatory phase proteins were recorded.

We recorded the complications for each subgroup in the first 10 days and at six months and one year.

Results: CRP level rises fast reaching the maximum level in the first 24 hours and descend till day 10 when the average level is lower than on admission (subgroup A1 and B1).

CRP level rises slower reaching the maximum level on day five and descend slowly remaining higher on day ten than at admission (subgroup A2 and B2).

In the A2 and B2 subgroups a larger number of complications were recorded in the first ten days.

After discharge none of the patients have received anti-inflammatory therapy.

At six months and one year the patients in A2 and B2 subgroups have fivefold more recurrentions of ACS.

Conclusions: Inflammation plays an important role in the evolution of the ACS.

The monitoring of the inflammation markers and the treatment of inflammation may contribute to secondary prevention.

The monitoring of the inflammation markers can influence the hospitalization duration and the costs of medical care in ACS.

22 (539). Inflammation, Infection & Hemostatic Factors (Date: 24th May 2005 — Free Paper Session 3.4 (Oral) — (13.30—15:00 Hours))

Which Haemostatic/Inflammatory Variables Add to the Prediction of Cardiovascular Events by Conventional Risk Factors? The Caerphilly Study

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The predictive value of haemostatic variables for cardiovascular events (coronary heart disease (CHD) events and ischaemic stroke (IS)), in addition to that of conventional risk factors, remains to be determined. We therefore analysed the predictive value of 13 haemostatic variables in the Caerphilly cohort of 2208 men aged 49-65 years, at a median follow up of 13.4 years (IQR 10.1, 14.8). 486 men experienced a CHD or IS event (36 had both events). Risk of cardiovascular eents was significantly

associated with fibrinogen (Clauss and nephelometric), fibrin D-dimer (specific and less specific ELISA's), tissue plasminogen activator antigen (t-PA; ELISA), plasminogen activator inhibitor (PAI-1; chromogenic activity), and activated protein C resistance (APTT-based assay); but not with factors VIIc or VIIIc, von Willebrand factor antigen, prothrombin fragment F1 + 2, or thrombin-antithrombin complexes. On multivariate analyses including conventional risk factors, risk of cardiovascular events was significantly associated with previous cardiovascular event, diabetes, systolic blood pressure, total cholesterol, and (hazard ratio (95% CI) per tertile): D-dimer (specific ELISA 1.34; 1.13, 1.58), fibrinogen (nephelometric assay; 1.28; 1.09, 1.50), and PAI-1 (1.27; 1.08, 1.50). We conclude that fibrinogen, D-dimer and PAI-1 may each be independent predictors of cardiovascular events.
This process will be repeated for inflammatory markers IL-6, CRP, total and differential white cell counts, and the combined results will be evaluated.

53 (579). Inflammation, Infection & Hemostatic Factors (Date: 24th May 2005 — Free Paper Session 3.4 (Oral) — (13.30—15:00 Hours))
Significance of Inflammation and Homocysteine in Prognostication of Coronary Artery Disease
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Inflammation and homocysteine are resembled as factors significant in the development of coronary artery disease (CAD). The aim of this study was to examine indices of inflammation /high sensitivity C-reactive protein (hsCRP), neopterin (N)/ and total homocysteine (H) in healthy persons and in different groups of CAD verified by coronary angiography before PTCA and to evaluate observed changes in the progression of CAD. N, hsCRP and H were measured by commercially available immunoassay according to manufacturer's instuctions Statistical significance of changes observed in 1-artery disease, 2- or 3-artery disease and restenosis was calculated by Student's t-test. For the calculation of correlation coefficients the Exel programme of personal computer has been used. In healthy persons the blood serum concentrations of hsCRP are 0 — 5 mg/L, N concentrations are 2.6 — 8.7 nmol/L and H concentrations are 5 — 15 μmol/L. Our results obtained in healthy individuals agree with these data. Table shows the persentage of cases with increased concentration of hsCRP and/or N as well as concentration of H above maximal normal values in different groups of patients with CAD. These results show that acute and chronic inflammation, infection or traumatic injury has a pivotal role in the progression of CAD. The examination of both indices of inflammation: hsCRP and N are necessary to find the presence of inflammation, infection or traumatic injury and so prognosticate the course of CAD. The increase of H concentration points to possible thickening of blood vessels wall and narrowing of lumen. The positive correlation between N and H (r=0.485; p<0.05) found in CAD patients with restenosis points to the call for further investigation.

Groups of patients	1—atery disease	2— or 3—art. disease	Restenosis
hsCRP (%)	13.9	16.7	11.8
hsCRP+N (%)	2.3	20.8	23.5
N (%)	13.9	16.7	41.2
hsCRP and/or			
N in total (%)	30.1	54.2	76.5
H (%)	27.9	33.3	41.2

133 (647). Inflammation, Infection & Hemostatic Factors (Date: 24th May 2005 — Free Paper Session 3.4 (Oral) — (13.30—15:00 Hours))
Inverse Relationship Between Serum Inflammatory Markers and Bilirubin Levels may Contribute to the Protection Against Atherosclerosis in Gilbert Syndrome
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Background: Chronic inflammation plays an important role in the atherogenesis. We have recently demonstrated that mildly elevated serum bilirubin levels protect from both coronary and carotid atherosclerosis. It is generally believed that protective effects of bilirubin are due to its strong antioxidant properties. The aim of the present study was to investigate the impact of elevated serum bilirubin levels in subjects with benign hyperbilirubinemia (Gilbert syndrome, GS) on serum levels of highly sensitive C-reactive protein (hs-CRP) and pentosidine, two important inflammatory markers.
Methods: Serum hs-CRP was determined in 33 subjects with GS (mean age 55 years) and in 25 healthy age-matched controls; serum pentosidine was determined in 23 subjects with GS (mean age 56 years) and in 21 healthy age-matched controls. hs-CRP was determined by immunonephelometry (Behring Nephelometer II), pentosidine was assessed by HPLC.
Results: As expected, significantly higher serum bilirubin levels were found in the GS subjects as compared to controls (29.9±10.2 vs. 9.5±2.5 umol/L, p<0.05). In contrast, serum levels of hs-CRP and pentosidine were significantly lower in the GS group as compared to normobilirubinemic control subjects (1.05±1.0 vs. 1.82±1.7, p=0.0387; and 1.65±0.4 vs. 2.35±24.8 nmol/g albumin, p<0.0001, respectively).
Conclusions: Elevated serum bilirubin levels in subjects with GS are associated not only with increased serum antioxidant capacity, but also with low levels of inflammatory markers. These data suggest that mechanisms of bilirubin-mediated antiatherogenic action are more complex and may include also anti-inflammatory effects.
The study was supported by a grant No. J 13/98:111100002 and Nos. NR/8186-3 and VZ 64165 given by the Czech Ministries of Education and Health, respectively.

176 (671). Inflammation, Infection & Hemostatic Factors (Date: 24th May 2005 — Free Paper Session 3.4 (Oral) — (13.30—15:00 Hours))
Endothelial Function and Serum Levels of Inflammatory Markers in Metabolic Syndrome Patients with Hypercholesterolaemia
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Objectives: The interaction between metabolic syndrome (MS) and hypercholesterolaemia (HC) in terms of inflammation and endothelial dysfunction remains clear. The objective of this study was to compare the serum levels of inflammatory markers

and endothelial function in patients with HC and normocholesterolaemia (NC), with and without MS.
Materials and Methods: A total of 316 subjects with primary HC (n=119) and NC (n=197) were studied. HC and NC were defined as total cholesterol levels of $\geq$6.5 and <5.2mmol/L respectively. MS was defined according to the Adult Treatment Panel III National Cholesterol Education Program (NCEP-ATPIII) criteria but with lower cut-offs for waist circumference (>80cm for females, >90cm for males). Subjects were divided into 4 groups: HCMS+, HCMS-, NCMS+, NCMS-. Anthropometric indices, blood pressure, fasting plasma glucose, serum levels of lipid profile, highly sensitive C-reactive protein (hsCRP), interleukin 6 (IL6) and soluble intercellular adhesion molecule-1 (sICAM-1) were determined. Endothelial function was assessed by brachial artery flow mediated dilatation (FMD).
Results: The HCMS+ had higher hsCRP ($p<0.02$) and IL6 ($p<0.05$) levels compared to the HCMS- group. The NCMS+ had higher hsCRP ($p<0.001$) and lower FMD ($p<0.005$) compared to the NCMS- group. sICAM-1 levels were higher in the HCMS+ than the NCMS+ ($p<0.0001$). The HCMS- compared to the NCMS- had higher levels of IL6 ($p<0.005$) and sICAM-1 ($p<0.0001$), but lower FMD ($p<0.0001$).
Conclusion: Both HC and MS are associated with increased inflammatory state and endothelial dysfunction. There is further enhancement of inflammation by MS in HC patients. In NC patients, MS is associated with increased inflammatory state and endothelial dysfunction. MS may have an important role in accelerating atherogenesis in both HC and NC patients.

302 (765). Inflammation, Infection & Hemostatic Factors (Date: 24th May 2005 — Free Paper Session 3.4 (Oral) — (13.30—15:00 Hours))
Shouldn't The Assumptions Supporting Predictions of CHD Mortality Trends Conform to the Inflammatory (Rather than the Degenerative) Idea?
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For about 50 years, the degenerative paradigm influenced the way we conceived causality and patterns of diseases occurrence in populations. During the last decade, the idea of degeneration has lost its original strength. Several conditions earlier assumed to be degenerative, among them atherosclerosis, have now been increasingly described as inflammatory.
The degenerative paradigm is in accordance with the Platonic understanding of nature, where individuals are defined by their average presentation — conceived as typical, the essence representative of the whole — while actual variations are seen as imperfect or accidental realizations of the idealized types. Within this framework, disease would be modeled as resulting from some external factor (lifestyle, diet) affecting qualitatively similar persons.
Contrarily to the degenerative idea, the idea of inflammation conforms better to the requirements of the modern Darwinian understanding of nature, which sees reality as variation, as multiform individuals within populations.
As explained by Stephen Jay Gould (1) and Richard Lewontin (2), a trends might gain a different interpretation under the Darwinian understanding of nature. Instead of ''entities moving somewhere (1)'', they might be understood as expansions and retractions of different sub-populations integrating the system. Variation in attributes of CHD cases over time suggests a temporal change in the source sub-population of cases. It is proposed that an early 20th Century expansion of a CHD-prone sub-population, characterized by high-serum cholesterol phenotype and high case-fatality — and which contributed with most of the CHD cases and deaths during the 1960s — may have followed the 1918 Influenza Pandemic. The extinction of those birth-cohorts would have resulted in a relative increase in cases coming from a second source sub-population, characterized by insulin resistance and chronic expression of low grade inflammation markers, comparatively less vulnerable to acutely die from CHD. This re-interpretation of the CHD time-trend, and the abandonment of the idea of degeneration (occurring in qualitatively similar individuals) for the idea of inflammation (and its allied concept of variability), calls for a review in our predictions of CHD occurrence in third world countries. Besides exposures (diet, infection...), temporal variations in proportional representations of inherited and acquired phenotypes associated with individual resistance/vulnerability would be important determinants of evolving patterns of diseases occurrences in our populations.

1. Gould SJ. Full house: the spread of excellence from Plato to Darwin. New York: Harmony Books; 1996.
2. Lewontin R. The triple helix. Gene, organism and environment. Cambridge: Harvard University Press; 2001.

401 (850). Inflammation, Infection & Hemostatic Factors (Date: 24th May 2005 — Free Paper Session 3.4 (Oral) — (13.30—15:00 Hours))
Influenza Vaccination: A New Approach to Prevent Cardiovascular Disease
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Influenza is a major cause of morbidity and mortality. However, its cardiovascular impacts are largely neglected. Influenza can trigger acute coronary syndromes. Up to two thirds of myocardial infarctions (MI) in cold seasons are preceded by an upper respiratory infection. Most influenza epidemics and pandemics lead to a considerable increase in cardiovascular disease (CVD) death. Effect of influenza infection on CVD is just being recognized. Multiple recent studies in different settings have shown that influenza vaccination is associated with a remarkable (2575%) reduction in risk of secondary MI, sudden cardiac arrest, stroke, composite interventional endpoints and hospitalization for cardiac causes.
Influenza may trigger acute coronary syndromes by destabilizing the alreadypresent atherosclerotic vulnerable plaques. Influenza infection in apoEdeficient mice causes platelet aggregation and a marked increase in inflammatory cells in atherosclerotic plaques. Influenza infection produces a prothrombotic state and also causes HDL to lose its antiinflammatory and antioxidant effects. We have recently shown presence of influenza virus in high titers in atherosclerotic plaques of apoE deficient mice infected with influenza virus. Also, we have demonstrated presence of influenza genes in the aortic walls of patients undergoing aortic aneurysm repair. These data suggest an important role for influenza in pathogenesis of cardiovascular events and a possible cardioprotective role for influenza vaccine. However, the use of influenza vaccine in cardiac patients in US is below the optimum level. We suggest addition of influenza vaccination to cardiology prevention guidelines and increasing the effort to raise the vaccination coverage rate in high risk cardiovascular subjects. New clinical trials are needed to identify special groups (e.g. patients with asymptomatic CVD or with multiple CVD risk factors) who may additionally benefit from influenza vaccination or use of antiviral agents such as oseltamivir for CVD prevention.

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140 (651). Lipids (Date: 22nd May 2005 — Free Paper Session 1.6 (Oral) — (13.30—15:00 Hours))
Ethnic Differences in Carbohydrate Intake and HDL
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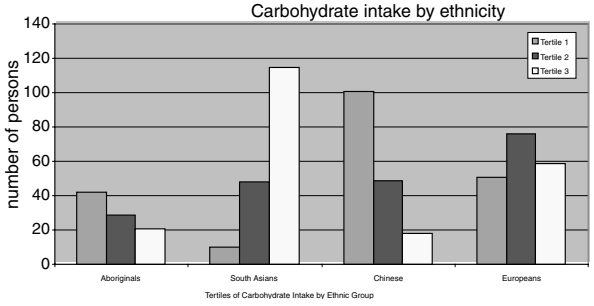
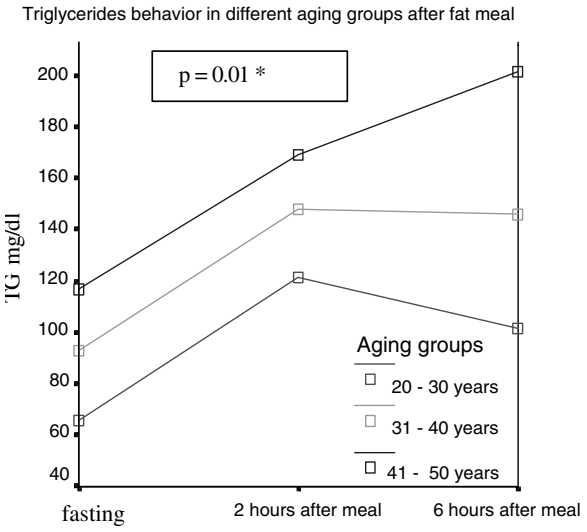
Objective: To compare the carbohydrate intake and HDL levels of Canadians of Aboriginal, South Asian, Chinese, and European backgrounds.
Methods: We conducted a cross-sectional study among Canadians of Aboriginal (N=301), South Asian (N=342), Chinese (N=317), and European origins (N=326). We measured fasting HDL using standard methods and diet using validated, culture specific, interviewer administered food frequency questionnaires. We related tertiles of energy-adjusted carbohydrate intake to HDL in an analysis of covariance model adjusting for age, sex, ethnicity, smoking, alcohol intake, physical activity, waist to hip ratio, total energy, protein, fiber, and fat intakes, to calculate adjusted means of HDL by carbohydrate intake.



Results: South Asians consumed the most carbohydrate and Chinese the least (Figure 1). HDL was 1.23 for Tertile 1 (lowest intake of energy-adjusted carbohydrate), 1.22 for Tertile 2, and 1.06 for Tertile 3, p-value <0.00 after accounting for age, sex, ethnicity, smoking, alcohol intake, physical activity, waist to hip ratio, total energy, protein, fiber, and fat intakes. Differences in HDL persisted by ethnic group after multivariate adjustment not including nutrients in the model (Aboriginals 1.16, South Asians 1.06, Chinese 1.27, and Europeans 1.16).
Conclusions: Ethnic differences in HDL may partially be related to differing carbohydrate intakes.

266 (738). Lipids (Date: 22nd May 2005 — Free Paper Session 1.6 (Oral) — (13.30—15:00 Hours))
Lipemia Postprandial: Aging Influence
Dr. Jaqueline Scholz Issa, Jayme Diament, Neusa Forti

Postprandial lipemia is characterized by accumulation of triglyceride-rich lipoproteins (chylomicrons, VLDL and its respectives remmants) after intake of a fatty meal. A number of studies have showed association between postprandial lipemia and cardiovascular manifestations of atherosclerosis, and also, there are many investigations reporting the relation ship between aging process and atherosclerosis disease.
The purpose of the present study was to investigate postprandial behavior by employing repeated measures of triglycerides (TG) in 24 male and 40 female healthy subjects aged 20 to 50 years.



Lipid profile (total cholesterol and its fractions, triglycerides) and fasting glucose were determined under three conditions: 12-hour fasting, two and six hours after standardized meal with 40g fat.
The subjects were distributed into three groups: GI - 20 to 30 years; GII - 31 to 40 years; GIII - 41 to 50 years. The analysis of repeated measures of TG showed different behaviors among the age groups throughout the six hours. Younger subjects (GI) presented greater TG levels on the 2nd hour and decreased TG levels on the 6th hour, indicating the existence of faster TG elimination rates than in the middle aged group (GII) and the advanced aged group (GIII). For GIII, the levels on the 6th hour were ascending when compared to the 2nd hours, and GII levels were maintained between the 2nd and the 6th hours. Differences in lipemia were significant (p=0.01). (fig 1)
The conclusion is that in healthy adult populations aging process influences post-prandial lipemia.

353 (759). Lipids (Date: 22nd May 2005 — Free Paper Session 1.6 (Oral) — (13.30—15:00 Hours))
Neighborhoods, Poverty and Cholesterol Levels After CHD Diagnosis in the West of Scotland: The Poorer the Area, the Smaller the Reduction
AM Clark, IN Findlay, HK Whelan, AD Cunningham
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Background: Individuals residing in poverty are more likely to develop Coronary Heart Disease (CHD) at a younger age, have more risk factors requiring change and live in social circumstances that do not promote health. To examine the effects of poverty on risk factor change, we compared mean cholesterol levels in patients with and without recorded CHD by neighbourhood deprivation level within a region of Scotland.
Methods: Data were extracted from an integrated CHD register that collated data from a local hospital and 13 general practices on all patients with or at risk from CHD in the Paisley region of the West of Scotland. Poverty was measured by neighbourhood Deprivation Category(DC) as calculated nationally from the 2001 census. DC for each neighbourhood was calculated from mean household DC for that area; low DC indicates higher affluence. Cholesterol levels were collected as part of routine clinical practice.

Findings: From the 11 neighbourhoods studied (n=76355), 2824 patients had a diagnosis of CHD reported (3747 per 100,000 pop), while 10,006 patients had a cholesterol test but no reported diagnosis of CHD (13104 per 100,000 pop). In the non-CHD population who had their cholesterol tested, levels did not vary with poverty ($p>0.1$) but there were marked variations by deprivation level in CHD populations, where areas with higher levels of poverty had higher cholesterol levels (DC 5, 6, 7 > DC 2, 3, $p<0.05$). Patients with CHD who lived in areas of highest poverty (DC 7, n=130) had 2.5% lower mean cholesterol levels than patients without CHD living in areas of equivalent poverty (5.338 to 5.206, $p>0.2$). Conversely, patients residing in more affluent areas (DC 2, n=308; DC 3, n=220) had cholesterol levels 12.4 and 12.6% less than the non-CHD populations living in areas of equal affluence (5.418 to 4.747, $p<0.001$; 5.431 to 4.745, $p<0.001$). Differences between mean cholesterol levels in CHD versus non-CHD patients also varied directly with poverty at intermediate levels (DC 4, n=731, 5.466 to 4.913, $p<0.001$, 10.1%; DC 5, n=863, 5.408 to 5.010, $p<0.001$, 7.4%; DC 6, n=572, 5.399 to 5.045, $p<0.001$, 6.6%).
Conclusion: Cholesterol levels did not vary with poverty in the non-CHD population, however, wide disparities existed in mean cholesterol levels in the CHD population. Reductions in mean cholesterol levels were evident between CHD and non-CHD populations irrespective of poverty. However, rates of reductions in cholesterol declined as poverty increased.

409 (856). Lipids (Date: 22nd May 2005 — Free Paper Session 1.6 (Oral) — (13.30—15:00 Hours))
Effect of Garlic and Onion Extracts on Susceptibility of LDL to Oxidation
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Background: Onion and garlic have been used in cooking and for their medicinal properties for thousands of years. Studies relating to the onion and its antioxidant effects make this a particularly interesting vegetable. The objective of this study was to investigate the antioxidant effect of aqueous extracts of onion and garlic on the LDL oxidation.
Methods: Aqueous onion and garlic's extract were prepared from fresh onion and garlic. LDL (150·g protein/ml) in Phosphate Buffer Saline (PBS) was incubated at 37° C in the presence of Cuso4 (final concentration 5·M) and 0.2 ml of each extract separately. The perox idation process was continuously monitored by the change in absorbance at 234 nm. The electrophoretic mobility of intact and oxidized LDL in the presence and absence of each extract also was performed separately.
Result: The results showed that onion and g arlic's extract at the applied concentration completely inhibit LDL oxidation at the time of incubation. Also showed that electrophoretic mobility of oxidized LDL is faster than native LDL and LDL which incubated with aqueous extracts of onion and garlic.
Conclusion: This study showed that onion and garlic have high inhibitory effects on LDL oxidation and because of suggested that oxidation of LDL may represent an important event in atherogenesis, consumption of onion and garlic regularly could make a signi ficant contribution to antioxidant defenses in the blood and help in protect against several different kinds disease like atherosclerosis.

206 (671). Metabolic Syndrome & Obesity (Date: 24th May 2005 — Free Paper Session 3.3 (Oral) — (13.30—15:00 Hours))
A Small Proportion of Metabolic Syndrome Subjects in a Rural Malay Population are Categorised as High Risk Group
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Introduction: Metabolic syndrome (MS) increases the risk of atherosclerosis and premature coronary heart disease (CHD). However, MS is not considered as a CHD equivalent. The objectives of this study were to examine the prevalence of MS and their risk categorization in a rural Malay Malaysian population.
Materials and Methods: A cross-sectional community-based study was conducted on 499 subjects (281 females, 218 males, age range: 30-65years). MS was defined according to the Adult Treatment Panel III National Cholesterol Education Program (NCEP-ATPIII) and the Asian criteria (AC) which is similar to NCEP ATPIII except for lower waist circumference cut-offs (>80cm in females and >90cm in males). Risk categorization into high, moderate and low risk groups was performed according to NCEP-ATPIII.
Results: The prevalence of MS was 19.2% (96/499) in all patients (21.4% in females, 16.5% in males) according to the NCEP ATPIII, and 28.5% (142/499) by the AC (29.9% in females and 26.6% in males). Among MS by the NCEP ATPIII, 37.5% (36/96), 29.2% (28/96) and 33.3% (32/96) of the subjects were in the low, moderate and high risk categories respectively. Among MS by the AC, 47.2% (67/142), 23.9% (34/142) and 28.9% (41/142) of subjects were in the low, moderate and high risk categories respectively.
Conclusion: There is a higher prevalence of MS according to the Asian than NCEP-ATPIII criteria. However, by both MS criteria, only about a third of MS subjects in this population are categorized as high risk by the NCEP-ATPIII guidelines.

258 (727). Metabolic Syndrome & Obesity (Date: 24th May 2005 — Free Paper Session 3.3 (Oral) — (13.30—15:00 Hours))
The Impact of Obesity in the Prevalence of Hypertension: Comparison Between Populations of Porto Alegre, Brazil, and The United States
Dr. Sandra Fuchs[1.2], Flavio Fuchs[1.2], Leila Moreira[1.2], Miguel Gus, Felipe Fuchs[1]
[1]Federal University of Rio Grande do Sul
[2]Hospital de Clínica de Porto Alegre

Objective: To compare the population attributable risk (PAR) for obesity and overweight in the pathogenesis of hypertension in adults from Porto Alegre, Brazil, and the USA.
Methods: The data from Porto Alegre came from a cross-sectional study of a population-based sample of adults, selected through a multistage probability sampling. Data from the United States population are from NHANES (National Health and Nutrition Examination Survey) 1999-2000. Participants of both samples were interviewed in their homes to ascertain demographic, education, cigarette smoking, alcoholic beverages consumption, among other data. Hypertension was defined as the average of two measurements $\geq$ 140 mm Hg or $\geq$ 90 mm Hg or the use of blood pressure-lowering drugs. Weight and height were measured and the body mass index (BMI) calculated. Prevalence rates for overweight (BMI $\geq$ 25-29 kg/m^2) and obesity (BMI $\geq$ 30 kg/m^2) and the population attributable risk for hypertension were calculated for each gender. PAR was calculated using the formula: [PAR= P(OR-1)/P (OR-1)+1], where P is the prevalence of exposure in the population and OR is the odds ratio. Multiple logistic regression was employed to obtain the adjusted odds ratios (OR) and 95% CI, controlling for age, education, smoking, sedentary, and alcoholic beverage consumption.

Results: Among 1,174 individuals surveyed in Porto Alegre, the prevalence rate for obesity was higher for women (15.4% vs. 11.6%) and of overweight for men (40.3% vs. 28.7%). In NHANES, among 5448 participants, the same pattern was observed for obesity among women (35.9 vs. 25.7) and overweight among men (38.9 vs. 29.5%). The prevalence of hypertension was similar for men and women in Porto Alegre (35.0 vs. 34.4%) and in the USA (34.4 vs. 34.7%). Obesity accounted for lower PAR of hypertension in Porto Alegre than in the United States, while the risks associated with excess of weight were similar among both populations (Table). Excess of weight accounted for approximately 40% of the hypertension cases in both populations.

Population attributable risk for excess of weight in the prevalence of hypertension among populations from Porto Alegre, Brazil, and NHANES 1999-2000

	Porto Alegre		United States	
	Men	Women	Men	Women
25.0—29.9	23.2	22.4	16.9	10.3
$\geq$ 30.0	23.2	28.8	35.6	37.4
$\geq$ 25.0	40.5	39.0	39.9	38.9

Conclusion: The attributable risk to excess of weight in the pathogenesis of hypertension is high for in Porto Alegre and the USA, suggesting that weight control may lower the cardiovascular risk in a large extent in both populations.

269 (743). Metabolic Syndrome & Obesity (Date: 24th May 2005 — Free Paper Session 3.3 (Oral) — (13.30—15:00 Hours)) The Association of Fat Patterning with Blood Pressure in Rural South African Children: Ellisras Longitudinal Growth and Health Study

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Objectives: The main objectives of this study were to determine the prevalence of obesity and hypertension in 6-13 year old Ellisras rural children in South Africa. Additionally the association of fat patterning and blood pressure were investigated.

Method: A total of 1884 subjects (967 boys and 917 girls), aged 6 to 13 years, who were part of the Ellisras Longitudinal Study [3] were studied. The anthropometric variables of height, weight, and triceps, biceps, subscapular, supraspinal skinfolds were measured according to the standard protocols of the International Society for the Advancement of Kinanthropometry. The proportion body fat on the trunk relative to that on the limbs was used as an indicator of the central pattern of body fat (visceral fat). Internationally recommended cut-off points for BMI in children were used in this study. Hypertension was define as average systolic or diastolic blood pressure greater than or equal to the 95th percentile for age and sex measured at least three separate occasion. The association between the changes in the fat patterning ratios and blood pressure was investigated.

Results: Boys had a significantly greater mean ratio of subscapular to triceps, the sum of the trunk skinfold relative to the limb skinfold and trunk than girls in all the age groups while girls had a significantly greater mean sum of skinfolds in all the age groups. These indicates higher levels of visceral and lower fat patterning among boys as compare to girls in this sample. The prevalence of hypertension ranged between 4.4% to 9.1% for boys and 3.8% to 6.0% for girls from the age of 6 to 13 years. The prevalence of overweight in the present sample was relatively low (0 to 0.3% for boys and 0 to 0.7% for girls), however the prediction of these children to have a BMI $\geq$ 30 at adulthood was not prevalent in this sample.

Table 1: The prevalence of hypertension and obesity for Ellisras rural children age 6 to 13 years

Age	N		Hypertension		Overweight	
	Boys	Girls	Boys	Girls	Boys	Girls
			% (n)	% (n)	% (n)	% (n)
6	33	26	—	3.8 (1)	—	—
7	79	65	2.5 (2)	7.5 (5)	—	—
8	97	85	1 (1.0)	3.4 (3)	—	—
9	117	110	5.8 (7)	4.5 (5)	—	—
10	175	177	2.8 (5)	4.5 (8)	1.1 (2)	0.6 (1)
11	216	214	3.7 (8)	6.0 (13)	—	2.8 (6)
12	172	183	2.3 (4)	11.4 (21)	2.9 (5)	3.8 (7)
13	91	62	4.3 (4)	3.1 (3)	2.2 (2)	4.6 (3)

Discussion and Conclusion: Boys and girls exhibited gradual increase in mean systolic blood pressure through out the age range with girls having higher mean systolic blood pressure than girls at the age of 12 years and 13 years. Diastolic blood pressure increase gradually with increasing age and reach a significant level between the ages of 11-12 year old girls. There was relative low hypertensive children in the rural South African population coupled with low prevalence of overweight was found in the population. There was a weak association between fat patterning ratios with systolic and diastolic blood pressure. The need to manage hypertensive individual is evident in this sample so as to combat this chronic disease at an early age. Follow up studies should investigate the relationship between blood pressure and dietary electrolytes (sodium, potassium, calcium), dietary protein, lipids and fibers, alcohol and total energy consumption of these children.

301 (760). Metabolic Syndrome & Obesity (Date: 24th May 2005 — Free Paper Session 3.3 (Oral) — (13.30—15:00 Hours)) Prevalence of the Metabolic Syndrome in Europe Using Four Different Definitions

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Background: The World Health Organization (WHO), the European Group for Study of Insulin Resistance (EGIR), the National Cholesterol Education Program (NCEP) Expert Panel, and the American Association of Clinical Endocrinologists (AACE) have proposed different definitions for the Metabolic Syndrome.

Aim: To estimate the prevalence of the metabolic syndrome in he European population using these definitions.

Study Population: 4190 men and 4950 women from seven DECODE cohorts.

Methods: Seven European epidemiological studies from six countries (Finland, The Netherlands, Sweden, Poland, Spain and the U.K.), on diabetes and milder impairments of glucose regulation, using a standard 2-hour 75g oral glucose tolerance test were included. Individual data on fasting and 2-hour glucose concentrations and a number of other variables were analyzed.
Results: The prevalence of the metabolic syndrome increased with age regardless of the definition used. By all definitions, the age-specific prevalence was below the age of 60 years higher in men than in women, but above the age of 70 years lower in men than in women. The age-standardized prevalence by different definitions ranged from 16.5% to 38.1% in men and 15.2% to 29.4% in women aged 30-77 years, and was highest by the AACE and lowest by the EGIR criteria. The Kappa values for the agreement of the WHO definition with other definitions in men (women) were: 0.68 (0.75) with EGIR, 0.51 (0.55) with NCEP, and 0.42 (0.46) with AACE definition. Obesity clustering with hypertension and abnormalities in triglyceride and HDL-cholesterol was the major combination leading to the fulfilment of the definition of the syndrome regardless the definitions used.
Conclusions: The proposed four definitions for the metabolic syndrome lead to a marked discordance in the classification of individuals with regard to the presence or absence of the syndrome. Optimal cutoffs for the components of the metabolic syndrome may need to be reassessed with regard to relative risk and population attributable risk of mortality and morbidity.

329 (784). Metabolic Syndrome & Obesity (Date: 24th May 2005 — Free Paper Session 3.3 (Oral) — (13.30—15:00 Hours)) Abdominal Obesity and Associated Cardiovascular Risk in Asian Indian Adults

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Objective: Cardiovascular diseases (CVD) are rapidly rising in India in parallel with increasing obesity, especially in the urban areas. We sought to investigate the metabolic and CV risks associated with abdominal obesity in North Indian adults, and its relation to urbanization.
Methods: We conducted a representative cross-sectional community-based study for CVD risk estimation in and around Delhi in adults aged 35-64 years from rural (n=1185), slum (n=497), and urban residences (n=2362). Waist circumference (WC) action levels were generated by ROC and regression analyses, using metabolic risk factors as dependent variables, to define abdominal obesity.
Results: The mean age of the population was ~46 years and 50% of respondents were women, in all areas. The WC thresholds optimally predicting metabolic risks were 75 cm and 85 cm for women and 80 and 90 cm for men. The prevalence of abdominal obesity increased progressively from rural to semi-urban to urban areas, being 11%, 19%, and 42% respectively by level 2 of WC action levels (p for trend <0.001). There was a progressive increase in prevalence of CVD risk factors and estimated CHD risk with increase in WC (see Table). While at any WC level, the overall CV risk increased from rural to urban areas, in each area a rise in WC was associated with a higher CV risk; thus prevalence of metabolic syndrome (as defined by NCEP ATP III) increased from 6% to 40% in rural, 7% to 43% in semi-urban, and 13% to 52% in urban areas for waist category I to III respectively. Using a threshold WC of 85 cm for women and 90 cm for men identified 60 % of those with metabolic syndrome, and ~50% of individuals with hypertension and diabetes.
Conclusion: Metabolic risks are evident at much lower WC thresholds in Asian Indians as compared to western populations. Abdominal obesity increases with urbanization and is associated with significantly elevated CVD risk, irrespective of location. Much of the CVD risk can be opportunistically screened using simple measurements like waist circumference.

354 (796). Metabolic Syndrome & Obesity (Date: 24th May 2005 — Free Paper Session 3.3 (Oral) — (13.30—15:00 Hours)) Depression in Relation to Increased Blood Pressure and Other Components of Metabolic Syndrome

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No presentation type allocated B09 Presenting: Katarzyna Gil
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Objectives: To evaluate the relationship between depression (D) and increased blood pressure (IBP) and other components of metabolic syndrome (MS).
Design and Methods: The study covered 760 consecutive Sopot residents (456 women— W; 304 men- M), aged 40-60, invited to screening project SOPKARD, aimed to increase detectability of hypertension, dyslipidaemia and diabetes mellitus. The following criteria of the MS were used in the study: IBP >=130/85 mmHg or treatment; waist circumference>102 cm in men (M) and >88 cm in women (W) - IWC; serum triglycerides >=150 mg/dL - ITg; HDL-cholesterol <40 mg/dL in M and <50 mg/dL in W - LHdl; serum glucose >=110 mg/dL or treatment - IGlc. Persons with >=10 points in Beck Depression Scales were classified into D group.

	Waist circumference (WC) categories			
CV Risk Factors	**I (WC≤75 in women and ≤ 80 cm in men)**	**II (WC≤85 in women and ≤90 cm in men)**	**III (WC>85 in women and >90 cm in men)**	**p**
Mean Framingham risk score	2.2	3.8	5.2	<0.001
10 year Framingham CHD risk>20% (%)	2.9	5.7	10.1	<0.001
Diabetes (%)	4.1	11.1	19.6	<0.001
Hypertension (%)	12.4	25.4	35.2	<0.001
Total: HDL cholesterol ratio ≥ 5 (%)	22.8	37.5	48.6	<0.001
Serum Triglycerides≥ 150 mg/dl (%)	28.2	44.2	49	<0.001
Metabolic Syndrome (as per NCEP ATP III) (%)	9	21	50	<0.001

Results: IBP was observed in 67% of subjects (W 62%, M 74%); IWC in 32.5% (W 37%, M 26%);; ITg in 36% (W 29%, M 46%); LHdl in 25% (W 65%, M 35%); IGlc in 24% (W 21%, M 30%). D were found in 38% of persons (W 44%, M 28%). IBP was found significantly more often in women with D than in women without D (69% vs 57% p=0.0079). Subjects with D had IGlc significantly more frequently than those without D (31% vs. 20%, p=0.0014; W 26% vs 16%, p=0.0081; M 41% vs 25%, p=0.0077). ITg were found more often in women with D than in women without D (W 35% vs 25%, p=0.027). Men with D had more often IWC than men without D (36% vs 22% p=0.0091). There were no differences in HDL levels between persons with and without D (26% vs 24%, respectively).
Conclusions: 1. The examined group of middle-aged persons, especially women, was characterized by high frequency of depression symptoms. 2. IGlc was observed significantly more frequently in men and women with depression symptoms than in those with no D. 3. IBP and ITg were observed more often in women with D than in those without D. In men such relationship was not found. 4. The results show that IBP and other components of MS are associated with higher occurrence of depression symptoms.

127 (640). Nutrition (Date: 22nd May 2005 — Free Paper Session 1.8 (Oral) — (13.30—15:00 Hours))
Following Dietary Guidelines on Total Energy and Fat Intake in Relation to Cardiovascular Event Risk
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Objective: Dietary guidelines recommend energy intakes of approximately 2200 and 2700 kcal/day for women and men, respectively, with fat contributing < 30% and saturated fat <10%. We examined whether energy- and fat intake are risk factors for early cardiovascular events.
Material and Methods: The Malmö Diet and Cancer Study, a population-based prospective cohort study, was set in Malmö 1991-1996. In all, 28,098 middle aged individuals (61% females) underwent dietary evaluation and physical examination. Subjects were categorised by quartiles of energy intake and relative fat intake, using the first quartiles as reference points in estimating relative risks (Cox regression), adjusted for confounding by age and various dietary, social-, and life-style factors. Information on endpoints was acquired from national registries during a mean follow-up period of 6.6 years.
Results: Concerning total energy, women in the third quartile, ingesting on average 2104 kcal/day, had the lowest relative risk (0.80; CI 0.65-0.99, p=0.039). Women in the first and fourth quartiles had similar risks. No difference was observed between quartiles of total energy intake for men. Subjects in the fourth quartiles ingested on average 20—30% more calories than recommended in national dietary guidelines.
Women in the first quartile of total fat intake derived on average 30.8% of their daily energy from fat, compared to 46.1% for women in the fourth quartile. For men, compatible figures were 31.7% and 47.7%. No trends towards higher cardiovascular event risk for men or women with higher total or saturated fat intakes was observed. No beneficial effects of relatively high intakes of unsaturated fats were observed.
Conclusions: In relation to risk of cardiovascular events, our results do not suggest apparent benefit from following currently used dietary guidelines on fat intake for both sexes and energy intake for men.

178 (586). Nutrition (Date: 22nd May 2005 — Free Paper Session 1.8 (Oral) — (13.30—15:00 Hours))
Different Types of Dietary Fat and Risk of Coronary Heart Disease
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Objective: We did a prospective cohort study in order to examine the association between the energy intake from major types of fat and the risk of coronary heart disease (CHD) while assessing potential effect measure modification by sex and age.
Methods: The study included 3,686 middle-aged Danish men and women without previous CHD enrolled between 1974-93. Dietary intake was assessed at baseline using a 7-day weighed food record. During 16 years follow-up, 326 participants with fatal or non-fatal events of CHD were identified. We used substitution analysis models with adjustment for nondietary and dietary CHD risk factors. The models may be interpreted as substituting 5% of energy from fat for the same amount of energy from carbohydrates.
Results: Energy from saturated fat was strongly positively associated with risk of CHD among the younger women (hazard ratio (HR) = 2.68, 95% confidence interval (CI): 1.40, 5.12), but not among the older women (HR = 1.22, 95% CI: 0.86, 1.71). The same pattern was seen for monounsaturated fat (among the younger women: HR = 2.56, 95% CI: 1.15, 5.73; among the older women: HR = 0.75, 95% CI: 0.40, 1.41). Among men, there was a positive trend between energy from saturated fat and risk of CHD among the younger men (HR = 1.29, 95% CI: 0.87, 1.91), but not among the older men (HR = 0.94, 95% CI: 0.70, 1.28). The same pattern was seen for monounsaturated fat (among the younger men: HR = 1.37, 95% CI: 0.78, 2.40; among the older men: HR = 0.85, 95% CI: 0.57, 1.28). Polyunsaturated fat was inversely associated with CHD among women and among the older men, but not significantly.
Discussion and Conclusions: Our data show differences in the risk of CHD when substituting energy from major types of fat for the same amount of energy from carbohydrates. Intake of saturated fat and monounsaturated were associated with a relatively high risk of CHD, particularly among the young women. In contrast, there was an inverse trend between polyunsaturated fat and risk of CHD among women and among the older men. So, the present study suggests that CHD risk relates both to the quantity and the quality of dietary fats. However, this study cannot predict whether fat promotes disease or whether carbohydrates prevent disease.

191 (683). Nutrition (Date: 22nd May 2005 — Free Paper Session 1.8 (Oral) — (13.30—15:00 Hours))
Simulated Changes in Human Fatty Acid Intake in Response to n-3 Fatty Acid Enrichments of Animal Based Foods
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Background: Due to an increased use of n-6 fatty acids (FA) - both directly in the human food chain and as feed for livestock - and a low consumption of n-3 rich sources, the ratio of n-6 over n-3 FA in the Western diet has increased to values of 10-15,

while pale-ontological research suggest that humans are physiologically adapted to more balanced intakes.
This dietary evolution is of major public health concern in view of accumulating evidence that n-3 FA — alfa-linolenic acid and its long chain derivatives eicosapentaenoic and docosahexaenoic acid — have protective properties against many chronic diseases, particularly cardiovascular diseases.
Objective: To examine the effect of n-3 enrichment of animal products — via feeding alterations - on the intake distributions of FA in the general population.
Methods: Consumption data from adolescents (7-day food diary) were linked to ''current'' and to ''enriched'' FA profiles for more than 500 food items. Enriched FA profiles were derived on the basis of a literature review of the effect of introduction of n-3 rich vegetable oils and oilseeds and/or grass in the feed of pork, beef, milk, chicken and egg.
Results: Under enriched conditions, population intakes for alfa-linolenic acid and for all n-3 FA shifted up to population recommended values (mean intake increased from 2.16g/d to 3.0 g/d for alfa-linolenic acid and from to 2.46 to 3.41g/d for all n-3 FA). For long chain n-3 polyunsaturated FA, the favourable trend in intake was not sufficient to meet recommendations (increase from 0.30 to 0.41 g/d). Saturated fatty acid intake decreased slightly, while the intake of mono-unsaturated and n-6 fatty acids remained unchanged.
The n-6/n-3 ratio decreased considerably from an average value of 6.6 to 4.6.
Discussion: A major concern in the evaluation of such interventions in the food chain is the remaining high saturated fatty acid content of animal products. Another important observation is that these interventions cannot replace the recommendations on fish consumption.
Conclusion: Feasible and realistic n-3 enrichments of animal based food can add substantially to the overall efforts of reversing the balance of the n-6/n-3 ratio and, hence, contribute to prevention of chronic diseases in general and cardiovascular diseases in particular.

243 (672). Nutrition (Date: 22nd May 2005 — Free Paper Session 1.8 (Oral) — (13.30—15:00 Hours))
How Much of the Cardiovascular Disease Burden can be Attributed to Unhealthy Dietary Habits?
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Objective: To estimate the population burden of cardiovascular diseases (CVD) attributable to unhealthy dietary habits with respect to saturated fat (SF), trans fatty acids (TF), fish, fruit and vegetables in the Dutch population.
Methods: We used a multistate transition model (computer simulation model) to estimate the number of cases of CVD that would be prevented in 2 different situations (scenarios). The model contains data on demography, dietary intake (by gender and 5-year age group), disease prevalence data, mortality data and relative risks of the dietary factors mentioned for different diseases. The 'maximum scenario' was defined as optimal dietary habits for all factors, defined as intake levels according to the present guidelines (SF <10 en%, TF <1 en%, fish at least once a week, fruit >= 200 grams/day, vegetables >= 200 grams/day). Although this is considered a 'utopia', the results of this scenario represent the disease burden attributable to unhealthy dietary habits. We also defined a more 'realistic' scenario, in which dietary habits improved (SF <12 en%, TF <1.3 en%, fish 2-4 times a month and both fruit and vegetable intake increase by 50 grams/day). In this abstract only the combined results for these 5 dietary factors will be discussed. All results for incidence and mortality are cumulative over a period of 20 years. In addition the gain in life expectancy will be presented.
Results: In the *maximum scenario* ('utopia') CVD incidence would be reduced by 23% (corresponding to prevention of about 930.000 cases)) and CVD mortality would be reduced by 18% (about 165.000 cases) cumulative over a 20-year period. Life expectancy would increase by 1.2 years, of which half would be disease-free. In the more *realistic scenario* incidence of CVD would be reduced by 13% (500.000 cases) and CVD mortality by 10% (88.000 cases). Life-expectancy would increase by 0.6 years (of which half disease-free). Health effects of the dietary factors separately will be discussed.
Conclusion: Unhealthy dietary habits contribute substantially to the cardiovascular disease burden: over a period of 20 years about 1 million cases (about a quarter of the total number of cases) in the general Dutch population can be attributed to unhealthy dietary habits. In the maximum scenario (all dietary factors according to the guidelines) the increase in life expectancy is comparable to the health effect of a scenario in which smoking is eliminated.

297 (627). Nutrition (Date: 22nd May 2005 — Free Paper Session 1.8 (Oral) — (13.30—15:00 Hours))
Chinese Dietary Pattern and Features of Cardiovascular Diseases
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The purpose of this presentation is to reveal the possible relationship of Chinese dietary pattern to the characteristics of cardiovascular diseases in China. Main sources of data used for the analyses were China Multi-center Collaborative Study of Cardiovascular Epidemiology (China MUCA study) and International Study of Macro-nutrients on Blood Pressure (INTERMAP study). In comparison with western countries, cardiovascular diseases in Chinese population was characterized by high incidence of stroke, higher proportion of hemorrhagic stroke, lower incidence of coronary heart disease, and big variation in incidence among populations within China. Results of ecological analysis showed that the predictive factors for incidence of CHD in a population were mean DBP, serum total cholesterol (TC), HDL-C and BMI. Dietary factors related to lower incidence of CHD compared with western populations were lower total fat, saturated fat and lower Keys score. Among populations within China, each 5 increase in mean Keys score was associated with 7 mg/dl increase in mean TC and roughly 6.7/100,000 increase in annual incidence of CHD. The strong predictive factors for stroke incidence was DBP. Dietary factors related to higher DBP were high salt, low potassium and calcium. Among populations within China, each 3 g difference in mean daily intake of cooking salt was associated with 1.8 mmHg difference in mean level of DBP and roughly 17 /100000 difference in incidence of stroke. Each 50 g increase in mean daily intake of fish or fruits was associated with 3 mmHg or 2 mmHg decrease in mean level of DBP, and then 28 /100000 or 19/100000 decrease in incidence of stroke respectively. The variation in acute phase mortality of stroke among populations was associated inversely with mean daily intake of animal protein and positively with Na/K ratio after adjusting for mean blood pressure and BMI. Public health efforts for preventing CVD in China should be aimed at reducing salt intake, increasing intake of fish and fresh fruits, vegetables, maintaining low levels in intake of total fat, saturated fat and cholesterol.

373 (826). Nutrition (Date: 22nd May 2005 — Free Paper Session 1.8 (Oral) — (13.30—15:00 Hours))
Substantial Decrease of Ischemic Heart Disease Mortality in the Czech Population Due to Changes of Nutrition
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Ischemic heart disease (IHD) mortality in the Czech population ranged among the highest in the world in the 1980's as a result of an upward trend in the 1960's and the 1970's.. Standardized IHD mortality in Czech men has been progressively decreasing since 1990 with the drop almost 50% over the last decade in the below 70 age group. Analysis of dynamics of changes in the numbers of PTCA, stent implantation, coronary artery bypass surgery procedures, and prescription of hypolipemic and hypotensive drugs is not able to explain this decrease.
Government subsidies of meet and diary products were stopped from 1991 resulting to immediate changes of nutrition. A substantial decrease in cholesterol concentrations was documented in a large population sample studied in the Czech MONICA Project and its extensions in the years 1988, 1992, and 1997. This decrease was due to a change in non-HDL cholesterol both in men (−12%) and women (-14%), with only a very small decrease in HDL cholesterol (−2%).
Statistical data demonstrated a substantial decrease in butter, beef and pork consumption whereas consumption of fruit and vegetables, margarine, and vegetable oil increased substantially. Our analysis of a total of 1,600 dietary records of this well selected population sample documented that proportion of saturated to polyunsaturated fatty acid consumption has changed from 3 to 1 to 1 to 1. Vitamin E consumption has almost doubled over this period. We would like to conclude that the decrease in atherogenic lipoprotein particle concentration, together with their protection by increased antioxidant consumption, might stabilize the atherosclerotic plaques already present. It is assumed that, just as with pharmacological LDL-cholesterol intervention, this positive effect might appear very soon after the drop in LDL-cholesterol. Project supported through MSMT CR No.1M6798582302.

45 (573). Overweight & Obesity (Date: 23rd May 2005 — Free Paper Session 2.3 (Oral) — (13.30—15:00 Hours))
Life Style Correlates of Body Mass Index Using Multilevel Analyses. The Tromsø Study 1979 — 2001.
Dr. Tom Wilsgaard Post.doc., Bjarne K Jacobsen Professor, Egil Arnesen Professor

Increase in overweight and obesity is observed globally. In developing countries this problem is more common among middle-aged women, persons in higher socio-economic classes and in urban regions. In developed countries it is also a growing problem among children and young adults. We have assessed the relationship between life style factors and body mass index (BMI) in the Tromsø Study, using both BMI at study start and subsequent BMI change as responses in multilevel analyses. Longitudinally, we included 11,115 men and women aged 20-61 years at baseline, from three or four consecutive population surveys between 1979-80 and 2001-02. Height, alcohol consumption, physical activity at leisure and level of education were inversely associated with baseline BMI, while age, physical activity at work, intake of coffee, and the BMI that the subject would like to have (well being BMI) were directly associated with baseline BMI. Subjects who reported to be current or previous smokers, to eat breakfast every day, to not work shift or night, or not to be under treatment for hypertension were associated with lower BMI values. Most associations were stronger in women than in men and several life style factors were also significantly associated with BMI change. Some of the estimated associations: Current smokers, compared to non-smokers, had an estimated lower baseline BMI of 0.32 $kg/m^2$and 0.28 kg/m^2in men and women respectively. For BMI change this association was even stronger. Current smokers had a 0.37 $kg/m^2$and 0.56 kg/m^2lower 10-year BMI increase in men and women, respectively. The strongest of all associations was for the variable well being BMI reported at the questionnaire in 1994-95. This variable could explain 50 percent of the total variation in baseline BMI and approximately 20 percent of the variation in BMI change, both in men and in women. On average, the reported well BMI in 1994-95 equals the measured BMI at study start in 1979-80, and the average well being BMI in 1994-95 is 1.4 $kg/m^2$and 2.3 kg/m^2lower than the measured BMI in 1994-95, in men and women respectively. In conclusion, the majority of the studied life style factors were associated with baseline BMI, BMI change, or both. In general, the associations in women were stronger than in men.

59 (587). Overweight & Obesity (Date: 23rd May 2005 — Free Paper Session 2.3 (Oral) — (13.30—15:00 Hours))
A Critically Low Hip Circumference may be Related to Early Cardiovascular Morbidity and Mortality in Both Men and Women
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Aims: to examine independent associations between a wide hip circumference and 10-13 year incidence of cardiovascular morbidity and mortality among men and women.
Methods: in total 2987 subjects born either 1922, 1932, 1942, or 1952, and aged 35, 45, 55, or 65 years at examination in 1987/88 participated in the Danish MONICA project with measurements of height, weight, and hip and waist circumference. Through personal identification numbers all causes of death, incident coronary heart and cardiovascular diseases were retrieved in the National Registers of Hospital Discharge until end of 1998 and death until 2001. There was an average of 10 years of follow-up for incidence of CVD and CHD and 13 years of follow up for total mortality. Cox Survival analyses were used to describe associations.
Results: large hip circumference, relative to body size and waist circumference, predicted fewer incidences of CVD and CHD, as well as total death in both men and women, but effects were stronger for women compared to men. For total death HR and 95% CI for highest and lowest deciles were 1.7 [1.0-2.7] vs. 0.8 [0.5-1.2] for men and 3.0 [1.9-4.9] vs. 0.4 [2.2-0.8] for women, corresponding to a mean hip-circumference of 91.0 cm vs. 107.0 cm for men and 89.0 cm vs. 110.0 cm for women. Furthermore, for both genders a threshold effect for hip-circumference was evident around 100 cm, particularly for CVD morbidity.
Conclusion: In both men and women relatively more narrow hips would seem to increase the risk for early death compared to those with the wider hips. Protection from a wide hip circumference seems greater for women than for men. However, a threshold effect seem present for both gender, suggesting a critically low hip circumference around 100 cm. Our data would seem to suggest that there may be no additional benefit to having large hips above this threshold.

68 (593). Overweight & Obesity (Date: 23rd May 2005 — Free Paper Session 2.3 (Oral) — (13.30—15:00 Hours))
Perceptions and Attitudes Related to Obesity in Patients with Coronary Artery Disease.
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Background: Weight control has been included in the American College of Cardiology guidelines for secondary prevention of coronary artery disease (CAD). Although behavioral changes remain the cornerstone for weight control, the perceptions and attitudes towards obesity in patients with CAD have not yet been described.
Methods: We performed a comprehensive behavioral survey in 120 patients recently hospitalized for either an acute coronary syndrome or coronary revascularization. We assessed self-perception of excess weight by estimating the gap between the desirable weight by patients and their body weight at the time of the survey; risk perception was asked using a categorical scale of obesity-related risk for myocardial infarction; Attitude was assessed by using a validated questionnaire for stage of change for weight loss and exercise.
Results: Patients were 65+/-11 years of age and 77% were either overweight or obese. The only factors associated with self-perception of excess weight were real excess weight and body mass index (BMI) ($p<0.01$). However, these variables together could only explain 25% of the variation (R square=0.49). Only history of hyperlipidemia (Odds ratio (OR)=2.9; 95% confidence interval (CI) 1.13-7.37) and physical activity (OR=1.27, 95% CI 1.03-1.57 for each MET-hr/week) were associated with obesity-related risk perception for myocardial infarction. Neither BMI, excess body weight, gender, sex nor several other clinical and demographic variables were associated with obesity-related risk perception for myocardial infarction. The likelihood to be in an active stage of weight loss was unrelated to socio-demographic and clinical characteristics, risk perception or to daily intake of fruits and vegetables.
Conclusions: Contrary to the expected, the perceptions and attitudes towards obesity in patients with CAD are not related to major socio-demographic and clinical characteristics. The perception of risk for myocardial infarction is not associated with an active stage of weight loss. Additional behavioral research is necessary to understand and modify behavior in patients with CAD in order to find effective weight loss strategies in secondary prevention.

139 (650). Overweight & Obesity (Date: 23rd May 2005 — Free Paper Session 2.3 (Oral) — (13.30—15:00 Hours))
Overweight and Obesity Associations with Cardiovascular Risk Facts - A Call for Prevention in a Developing Country
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Objective: To examine the association of excess weight, with other cardiovascular risk factors.
Methods: Cross sectional school-base survey among 1450 students, aged 6 to 18 years from Belo Horizonte city, Brazil. We collected data about body-mass index (BMI), adiposity distribution, physical activity (METs) and blood pressure (BP) values.
Results: Overweight and obesity prevalence was 8.4% and 3.1%, showing a increase tendency of 12% a year, when compared with results of a previous similar study. Students at highest quartile of sub scapular skin fold distribution had 3.68 times more risk of having increased total cholesterol (TC) when compared with those from the lowest quartile (OR=3.68, CI95%: 2.09; 6.46). Considering the sum of 3 skin folds, the upper quartile students had 3.29 (OR=3.29, CI95%: 1.89; 5.74) times more risk of having increased LDL-C versus those at the lower quartile. Students with BMI below the 85 percentile and at the lower quartile of waist-to-hip ratio distribution, had 2.20 (OR=2.20, CI95%: 1.44; 3.35) and 2.45 (OR=2.45, CI95%: 1.06; 5.68) respectively times more risk of having desired HDL-C levels, when compared with those with overweight and those with central fatness. The overweight and obese students had 3.60 times (OR=3.60, CI95%: 2.23; 5.78) more risk to have an increased systolic blood pressure and 2.70 times (OR=2.70, CI95%: 1.85; 3.95) more risk related to increased diastolic blood pressure versus those thinners. The less active students, from the lowest MET distribution quartile, presented 3.80 times greater risk of having increased TC levels than the me active students, at the uppermost quartile (OR=3.80, CI95%: 1.54; 9.40).
Discussion: Most of our findings are in agreement to other important international studies. This study is of paramount importance since it provides evidence for health care decision-makers with the epidemiological knowledge they need to make informed decisions to impact the cardiovascular disease epidemics in this developing country.
Conclusion: The scholars either with excess weight or central adiposity distribution, and the sedentary ones, presented lipid high-risk profile and high blood pressure levels.

177 (672). Overweight & Obesity (Date: 23rd May 2005 — Free Paper Session 2.3 (Oral) — (13.30—15:00 Hours))
Impact of Obesity on the Cardiovascular Disease Burden: How Much Can be Prevented?
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Objective: To estimate the population burden of cardiovascular diseases (CVD) and diabetes mellitus (DM) attributable to overweight and obesity in the Dutch population, and to estimate the extent to which lowering of the body mass index (BMI) would reduce this burden.
Methods: We used a multistate transition model (computer simulation model) to estimate the number of cases of CVD and DM that would be prevented in 2 different scenarios. The model contains data on demography, prevalence of overweight and obesity (by gender and 5-year age group), disease prevalence data, mortality data and relative risks of overweight/obesity on different diseases. The 'maximum scenario' was defined as the absence of overweight and obesity. Although this is considered a 'utopia', the results of this scenario represent the disease burden attributable to overweight/obesity. We also defined a more 'realistic' scenario, in which the BMI distribution in the population was shifted towards lower levels by 1 unit (1 kg/m2, equivalent to approximately 3 kilograms). Overweight was defined as a BMI between 25 and 30 kg/m2, obesity as a BMI of 30 kg/m2 and above. All results for incidence and mortality are cumulative over a period of 20 years. In addition the gain in life expectancy will be presented.
Results: In the *maximum scenario* ('utopia') CVD incidence would be reduced by 13% (corresponding to prevention of about 520.000 cases)) and CVD mortality would be reduced by 8% (about 75.000 cases) cumulative over a 20-year period. Inci-

dence of DM would by reduced by 48% (prevention of about 465.000 cases) and mortality of DM by 25% (about 22.000 cases). Life expectancy would increase by almost 1 year, of which half would be disease-free. In the more *realistic scenario* incidence of CVD would be reduced by 4% (145.000 cases) and CVD mortality by 2% (15.000 cases). Incidence of DM in the realistic scenario would be reduced by 14% (140.000 cases) and mortality of DM by 5% (4.500 cases). Life-expectancy would increase by 0.3 years, of which about half would be disease-free.

Conclusion: The disease burden (CVD and DM) attributable to overweight and obesity is already substantial, and expected to increase in the near future based on the increasing prevalence of obesity. A modest reduction of BMI would lead to the prevention of substantial numbers of CVD and DM cases.

339 (791). Overweight & Obesity (Date: 23rd May 2005 — Free Paper Session 2.3 (Oral) — (13.30—15:00 Hours))

The Spread of the Obesity Epidemic in a Rapidly Developing Country, 1989-2004

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Objective: The increasing prevalence of obesity is no longer limited to the most affluent nations in the world. We assessed the 15-year trends in the distribution of body mass index (BMI) and the prevalence of overweight and obesity in the Seychelles islands (Indian Ocean), a rapidly developing country.

Methods: Weight and height were measured, and BMI calculated, in random samples of the population aged 25-64 participating in surveys carried out in 1989, 1994 and 2004.

Results: The surveys were attended by 1081 persons in 1989 (86.4% participation rate), 1067 in 1994 (87.0%) and 1255 in 2004 (80.2%). Between 1989 and 2004, mean BMI (kg/m^2) increased from 23.4 to 25.6 in men and from 25.8 to 28.2 in women. The prevalence of overweight and obesity combined (BMI$\geq$ 25 kg/m^2) increased from 29.2% to 52.3% in men and from 50.3% to 66.7% in women. The prevalence of obesity (BMI $\geq$30 kg/m^2) increased from 4.3% to 15.1% in men and from 22.7% to 34.2% in women. The overall prevalence of underweight (BMI<18.5 kg/m^2) was 5.3% in 1989 and 3.9% in 2004. The upward shift of body weights in the entire population over calendar years was coupled with an accelerated shift at the highest levels of BMI.

Conclusion: Based on these three nationally representative samples, the prevalence of overweight and obesity increased markedly over the past 15 years in the adult population of Seychelles. The rapid escalation of overweight and obesity emphasizes the need for appropriate primary and secondary prevention measures.

422 (C). Overweight & Obesity (Date: 23rd May 2005 — Free Paper Session 2.3 (Oral) — (13.30—15:00 Hours))

Need for Substantial Revision of Criteria for Obese Among South Asians, Chinese and Aboriginal People: Results from the Share Study

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McMaster University

Introduction: More than 80% of the global burden of cardiovascular disease (CVD) exists in low-income and middle-income countries, yet knowledge of the impact of risk factors for CVD has been derived primarily in high-income countries. Body Mass Index (BMI) is widely used as a measure of risk for CVD, type 2 diabetes and related metabolic abnormalities. Cut-points for the classification of obese (BMI > 30 kg/m^2) have been developed and validated in populations of European (EC) descent. There is controversy as to whether these cut-points are appropriate for non-EC populations. We devised a novel method of directly comparing the metabolic risk associated with a given level of BMI in South Asian (SA), Chinese (CH), Aboriginals (AP) and EC Canadians.

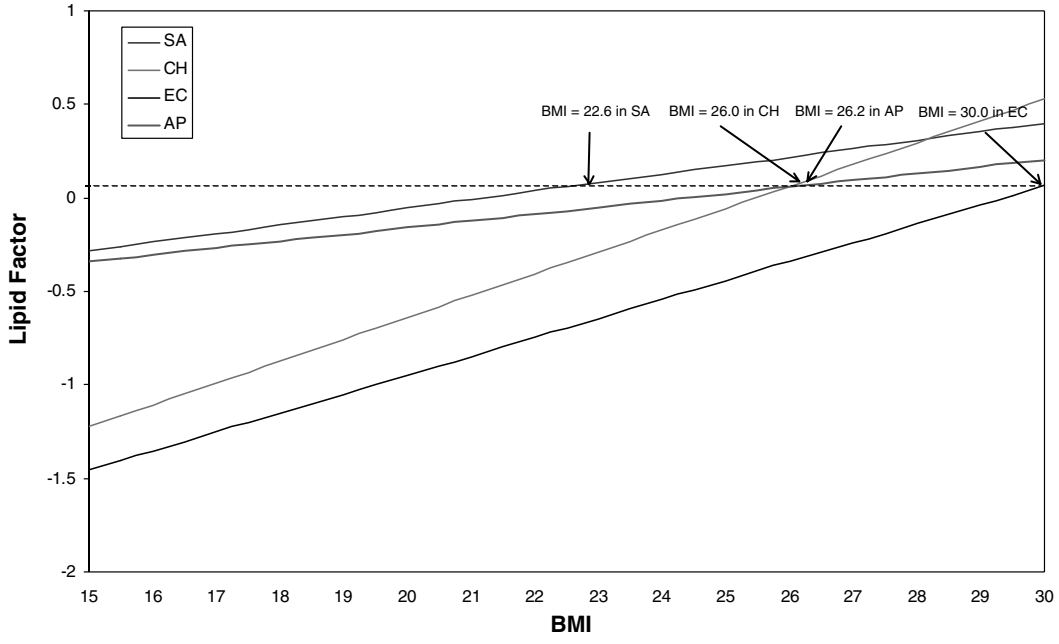

Figure 1: Relationship of Lipid Factor to Body Mass Index Among South Asians, Chinese Aboriginals and Europeans.

Table 1: Corresponding cut-points for obese in SA, CH and AP compared to EC

	Obese (BMI = 30 kg/m^2 in EC)		
	SA	CH	AP
Lipid Factor	22.6	26.0	26.2
Glucose Factor	20.6	21.0	21.5
Blood Pressure Factor	30.0	26.3	—

Methods: 289 SA, 281 CH, 207 AP and 301 EC, free of established type 2 diabetes, were drawn from the Study of Health Assessment and Risk in Ethnic groups (SHARE). We used principal components factor analysis to derive underlying latent factors associated with 14 observed clinical and biochemical markers (fasting and 2-hour glucose, fasting and 2-hour insulin, HbA1c, HOMA-IR, LDL, HDL, fasting and 2-hour triglycerides, fasting and 2-hour free fatty acids, and systolic and diastolic blood pressure). Markers were age and sex adjusted prior to being entered into the factor analysis model. Each derived latent factor was used as the dependant variable in regression models with BMI as the independent variable. When statistically significant, main effect and interaction terms with BMI were included for ethnicity through a backwards elimination approach.
Results: Three primary latent factors emerged representing glucose metabolism, lipid metabolism and blood pressure. At a given BMI, there was excess risk in SA and AP compared to EC in factors related to glucose and lipid metabolism and in CH compared to EC for all three factors. AP demonstrated markedly lower levels of the blood pressure factor across the range of BMI values, and no value corresponding to 30 kg/m^2 in EC was derived for this factor. Derived cut-points in SA, CH and AP corresponding to BMI values of 30 kg/m^2 in EC are presented in Table 1. A sample figure deriving ethnic-specific cut-points for the lipid factor is shown in figure 1.
Conclusions: Major revisions are required for the use of BMI cut-points in SA, CH and AP. Employing these revised cut-points would result in a greatly increased global prevalence of overweight and obese in these groups. Further research is required to extend these findings to clinical events such as CVD. In addition, continued study of the paradoxically low blood pressure values in AP despite their high levels of obesity is merited.

24 (540). Physical Activity (Date: 23rd May 2005 — Free Paper Session 2.1 (Oral) — (13.30—15:00 Hours))
Low Physical Activity as a Predictor for Total and Cardiovascular Disease Mortality in Middle-Aged Men and Women in Finland
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University of Kuopio
National Public Health Institute, Helsinki

Objectives: To investigate separately for men and women whether moderate or high leisure time physical activity, occupational physical activity and commuting activity are associated with a reduced cardiovascular disease (CVD) and all-cause mortality independent of CVD factors and other forms of physical activity.
Methods and Results: Prospective follow-up of 15853 men and 16824 women aged 30-59 years living in eastern and south-western Finland (median follow-up time 19.9 years). The risk reduction in all-cause mortality was 9% (95% confidence interval [CI] 2%-16%) among men who had moderate leisure time physical activity and 21% (95% CI 10%-30%) among those who reported high leisure time physical activity when adjusted for age, body mass index, systolic blood pressure, total cholesterol, education, smoking status, occupational physical activity and commuting activity. The risk reduction of CVD mortality was 9% (95% CI 0%-18%) and 17% (95% CI 1%-31%) among men with moderate and high leisure time physical activity, respectively. A risk reduction in all-cause and CVD mortality was found in women who had at least moderate leisure time physical activity as well (Hazard Ratio (HR) 0.91; 95% CI 0.83-0.99) compared to women who were inactive in their leisure time. Moderate and high occupational activity decreased CVD and all-cause mortality significantly compared to people with low occupational physical activity in both men and women. The risk reduction in men regarding all-cause mortality was 25% (95% CI 17%-32%) for moderate occupational physical activity and 23% (95% CI 16%-29%) for high occupational physical activity. Women with at least moderate occupational physical activity showed a 21% risk reduction of all-cause mortality (95% CI 13%-29%). The risk reduction of CVD mortality varied among men between 23% (high occupational physical activity) and 25% (moderate occupational physical activity).
Conclusion: Moderate and high levels of leisure time physical activity and occupational physical activity are associated with a reduced risk of CVD and all-cause mortality among both sexes. Promoting already moderate levels of leisure time physical activity and occupational physical activity are essential to prevent of CVD and all-cause mortality.

100 (621). Physical Activity (Date: 23rd May 2005 — Free Paper Session 2.1 (Oral) — (13.30—15:00 Hours))
Persistent Physical Activity in Leisure-Time and Mortality from, Coronary Heart Disease, Stroke, Respiratory Diseases and All-Causes The Copenhagen City Heart Study
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Associations of persistent low, moderate and high physical activity in leisure-time and subsequent mortality from coronary heart disease, stroke, respiratory diseases and all-causes were studied in a random sample of 5,139 healthy men and women aged 20-93 years. Physical activity was estimated in both 1976-78 and in 1981-83. Only persons with unchanged physical activity in leisure-time at the two examinations were included. They were followed from 1981-83 until December 2000 or until death. The following covariates were included in the multivariate analyses: smoking, total-cholesterol, HDL-cholesterol, systolic blood pressure, diabetes mellitus, alcohol consumption, body mass index, education, income and FEV1% predicted.
Adjusted relative risks for CHD were, for moderate physical activity: 0.72 (95%CI: 0.53, 1,00) and for high: 0.62 (95%CI: 0.43, 0.90). For all-cause mortality the relative risk were, moderate physical activity: 0.77 (95%CI: 0.68, 0.88) and high physical activity: 0.77 (95%CI: 0.68, 0.89) the two sexes combined.
In conclusion: In this study, persistent moderate or high physical activity in leisure-time was associated with significantly lower risk of deaths of CHD and all-causes in both sexes. The same trend was found for stroke and respiratory disease, but the associations did not reach significance.

181 (675). Physical Activity (Date: 23rd May 2005 — Free Paper Session 2.1 (Oral) — (13.30—15:00 Hours))
Occupational Physical Activity, Overweight and Cardiovascular Mortality During 24 Years' Follow-Up of Norwegian Women and Men
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Objective: The aim was to evaluate the effect of occupational physical activity (OPA) on overweight (BMI > 27kg/m^2) and cardiovascular (CVD) mortality.
Methods: All inhabitants aged 35-49 years were invited to health surveys in three Norwegian counties in 1974-78 and 90 % participated. OPA was measured by self-reports as sedentary, light, moderate heavy or heavy. Information on occupation was obtained from census. Subjects with CVD, disability pension or death prior to 1980 were excluded, and 23,884 men and 23,521 women were followed to the end of 2000. 1971 men and 592 women died from CVD. Associations in cross-sectional data were evaluated by logistic regression. Relative risk (RR with 95-% CI) for mortality was computed by Cox regression for each level of OPA using sedentary work as reference.
Results: In unadjusted data there were small differences in overweight by OPA in men. When adjusting for age, education, county, smoking and leisure time exercise, OPA at any level was associated with lower prevalence of overweight, compared with sedentary work. In women there was a clear positive association of OPA with overweight in crude and adjusted data. These results were consistent by county.
The mortality among men and women with light or moderate heavy OPA was similar to the reference. In men with heavy OPA within farming, fishing or industry adjusted RRs for all-cause, CVD and coronary heart disease (CHD) mortality were 0.84 (0.76-0.93), 0.86 (0.74-0.99) and 0.86 (0.73-1.02), respectively. These results varied somewhat by county. In a northern county with work within fishing and industry, the RR for CVD mortality was 0.94 (0.72-1.24) and in an inland rural county the RR was 0.90 (0.73-1.11). In a hilly coast county with small farms the CVD and CHD mortality was lower by heavy OPA in men, with RRs 0.70 (0.50-0.96) and 0.64 (0.44-0.94), respectively.
In women with heavy OPA, adjusted RR for total and CVD mortality was 0.78 (0.57-1.06) and 1.12 (0.57-1.92). Most women with heavy work did housework or farming.
Conclusions: Heavy work of men within farming, fishing and industry may have been protective with respect to overweight. Heavy farm work may also protect men from CVD. Heavy work in women implied no protective effect in this study and may be different from heavy work in men.

271 (745). Physical Activity (Date: 23rd May 2005 — Free Paper Session 2.1 (Oral) — (13.30—15:00 Hours))

Effects of Physical Activity on Total Life Expectancy and Life Expectancy with and Without Cardiovascular Disease

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Context: Physical inactivity is a modifiable risk factor of cardiovascular disease. However, little is known about the effects of physical activity on life expectancy with (out) cardiovascular disease.
Objectives: To calculate the consequences of different physical activity levels after age 50 in terms of total life expectancy and life expectancy with(out) cardiovascular disease.
Design: Life table analysis using data from a cohort study.
Methods: Using data from the Framingham Heart Study we built life tables to calculate the effects of three levels of physical activity: low, moderate and high; among populations aged over 50 years and of both genders. For the life table calculations we

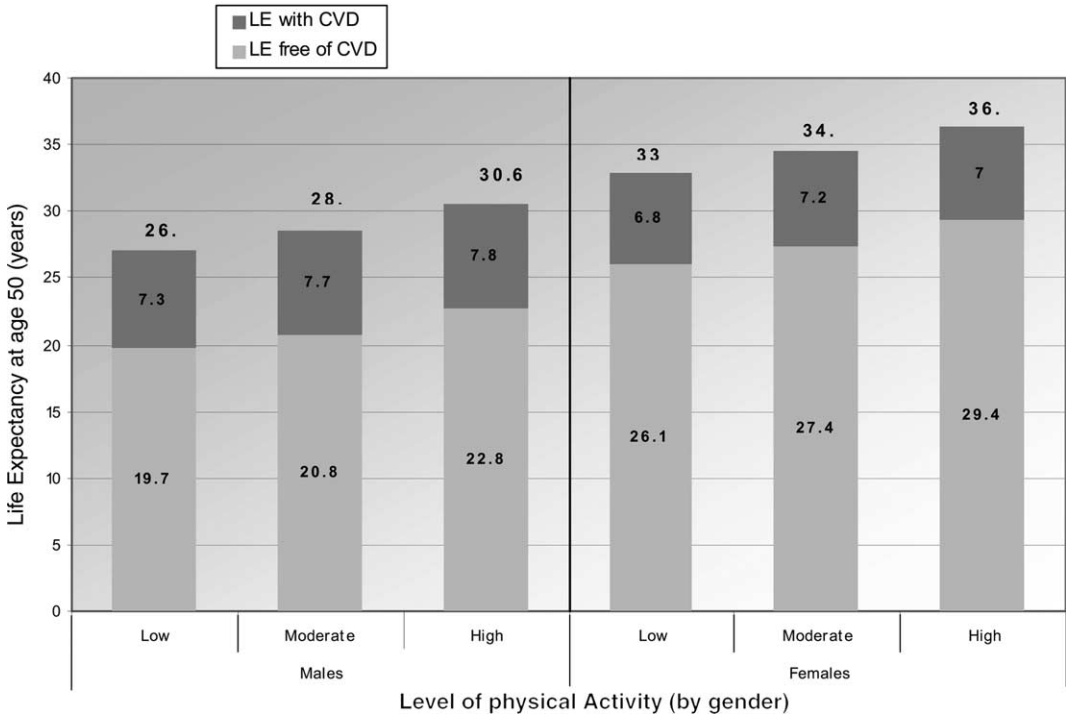

Figure 1. Effect of Physical Activity on Life Expectancy with Cardiovascular Disease.

used hazard ratios for three transitions (healthy to death, healthy to disease, disease to death), by levels of physical activity and adjusted by age, sex and confounders.
Results: Moderate and high physical activity levels represented for men aged 50, 1.5 and 3.7 years more in total life expectancy and 1.0 and 3.1 more years lived without cardiovascular disease compared with participants at low physical activity level. For women the difference was similar.
Conclusions: Avoiding a sedentary lifestyle during adulthood not only prevents cardiovascular disease independently of other risk factors, but also expands the total life expectancy and the cardiovascular disease-free life expectancy for both genders. The effect is even seen at moderate levels of physical activity and more than doubled at higher levels. More intensive efforts to increase the levels of physical activity in the general population are warranted.

346 (774). Physical Activity (Date: 23rd May 2005 — Free Paper Session 2.1 (Oral) — (13.30—15:00 Hours))
Awareness of Arterial Hypertension Makes Patients Reduce Their Physical Activity. Results of Prevention Program GDYNIA-KARD in Year 2001
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[2]City Hall in Gdynia; Poland

Aim: To assess how awareness of hypertension (HT) affects lifestyle in 50-year old patients in large city in Poland.
Material and Methods: In 2001, all 50-year old citizens of Gdynia were invited to screening project aimed to increase detectability of hypertension, dyslipidaemia and diabetes mellitus. The group of 2591 participants consisted of 1563 women (W) and 1028 men (M). Blood pressure (three readings during one visit), anthropometric measurements and questionnaire interviews were performed. The results were analyzed in: 1. normal subjects 2. patients aware of HT, and 3. patients with newly detected HT.
Results: The prevalence of HT (>=140/90 mmHg or medication) was 36.5%: (W 35%; M 38%), detectability - 60% (W 63%; M 55%, p<0.05). Overweight or obesity (BMI>=25 kg/m2) were found in 68% of subjects (W 64%; M 74%; p<0.001). It was more common in patients aware of HT (86%) than in newly detected hypertensives (79%, p<0,004) and normal subjects (60%, p<0,001). Thirty six percent of subjects smoke cigarettes (W 32%; M 41%, p<0.001). Subjects aware of HT smoke less (31.5%) than patients unaware of HT (35%) and normal subjects (37%, p<0,05). Men added salt to prepared dishes more often than women (W 24%; M 44%, p<0,001). Men aware of HT (36%) added salt to prepared meals less often than men with newly detected HT (45%, p=0,05) and normal subjects (46%, p<0,05). No differences were observed in women. Lack of physical activity was declared by 45% of all subjects (W 44%; M 47%, n.s.). Patients aware of HT declared lack of physical activity (51%) more often than patients unaware of HT (44%, p<0,05) and normal subjects (44%, p<0,01).
Conclusions: 1. Prevalence of hypertension in 50-year old residents of large city in Poland is 37%, and detection rate 60%. 2. Life style habits in men are much worse than in women. 3. Awareness of hypertension decreased smoking and adding salt to prepared dishes, however, made patients reduce their physical activity and gain weight. These data clearly indicate the most important tasks of nonpharmacological therapy.

368 (808). Physical Activity (Date: 23rd May 2005 — Free Paper Session 2.1 (Oral) — (13.30—15:00 Hours))
Impact of Five Year Multi-Level Intervention Physical Activity Program on PA-Level
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[1]CELAFISCS
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Introduction: The focus of this paper was to verify the impact of a physical activity (PA) promotion program on population knowledge of the: a-program brand; b-program purpose; and c- PA levels, after 5-year intervention.
Methods: Level of PA (active, irregularly active, sedentary) was determined using the International Physical Activity Questionnaire (IPAQ), version 8, short, last week form, obtained by means of a home-based interview (n: 641 - 1999; n: 651 - 2004

Table 1. Impact of 5-year intervention program on brand and purpose knowledge and PA level

RECALL OF THE PROGRAM & PHYSICAL ACTIVITY LEVEL	YEAR OF THE INTERVENTION PROGRAM			
	1999 (n:641)		2004 (n: 651)	
Recall of the Program Brand	342	53.4%	100	61.4%
Knowledge of the Purpose Program	192	31.0%	147	22.6 %
Active	353	54.8%	333	61.8%
Irregularly Active	195	30.3%	176	27.0%
Sedentary	96	14.9%	73	11.2%

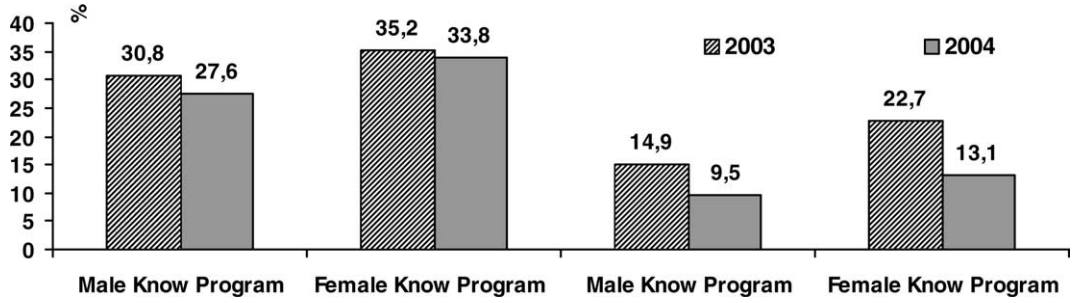

Figure 1. Physical Activity Level after three — year intervention program.

men and women, over 18 yrs-old). It was carried out in three cities of São Paulo Metropolitan area. Sample was randomized according to gender, age, socio-economic, and educational status. PA level was divided into three groups: a-Active: people who met the current physical activity guidelines: vigorous physical activity (VPA): $3d \cdot wk^{-1}$, 20 min per day; or moderate activity (MPA): $5d \cdot wk^{-1}$ 30 min per day; or walking 150 $min \cdot wk^{-1}$; or an accumulation of 150 $min.wk^{-1}$, 5 times per week of VPA, MPA and/or walking; b- Irregularly active: subjects below the recommendation; c-Sedentary: no report of PA during last week.
Results: The PA level results were analyzed according to gender, knowledge of the program name and program purpose as well as the PA categories (vigorous, moderate, and walking).
Positive recall for the program brand remained constant (53.0% x 52.8%, for 1999, 2002, respectively). However, a 60.6% increase (*p<0.01) in program purpose knowledge was observed (19.5 x 31.3%). Data showed a slight increase in active people (54.8 x 56.8%), as light decline in irregularly active (30.3 x 28.1%); and a steady sedenteriness level (14.9 x 15.1%). A significant relative increase (23%) in walking was observed among those who have reached the CDC/ACSM recommendation (22.9 x 28.1%). When walking was not included, a 19.6% droop was observed in active group, and a 12.3% increase of insufficient active groups (60.3 x 67.7%). Among women regular activity decreased by 7.7% (61.0 to 56.3%) while the proportion of active men increased by 17.9% (48.7 to 57.4%). Knowledge of the program purpose seemed to not affect the level of active people (56 x 54%), but it did influence sedentarism, since it was higher (19.3 %) among whose did not know the Agita message than among who knew the program message (10-11%).
Discussion/Conclusion: Positive impact of a three year multi-level intervention included: a- an increase (60.2%) in program purpose knowledge; b- a permanent high index (53%) of brand knowledge; c- an increase of 23% in walking, d- a lower risk for sedentariness among who knew the program purpose.

398 (843). Physical Activity (Date: 23rd May 2005 — Free Paper Session 2.1 (Oral) — (13.30—15:00 Hours))
The Effect of Theraputic Exercise on the Blood Pressure in Mild and Moderate Hypertensive Patients
Dr. Fatma Aboul-Enein, Abd-Moneim Hussein Helal, Tarek El-Badawy, Abel-Latif Gaballah
Alexandria University cardiology department Alexandria University physical therapy department

Background: Hypertension is a major risk factor for coronary heart disease that affects over 25% of the Egyptian population. Non-pharmacological treatment especially aerobic exercise has been studied as a therapeutic measure for controlling hypertension.
The aim of this work was to study aerobic conditioning as a mean of controlling mild to moderate hypertension in female Egyptian hypertensive patients.
Patients and Methods: Patients with severe hypertension, uncontrolled diabetes, angina pectoris, and cerebrovascular stroke were excluded. 20 female hypertensive patients with mean age of 47±5.4 years and mean duration of disease 2.6±4.7 months were subjected to pre-exercising clinical evaluation and baseline stress ECG testing.
The program was individualized to restrict the patients to exercising aerobically; 50-70% of the maximum heart rate was considered the target zone. It lasted for six weeks 3 sessions each, each session lasted from 20-30 minutes, during which patients were monitored for blood pressure and heart rate every 5 minutes to ensure that they exercised without reaching the anaerobic threshold. Exercise stress test was repeated at the end of the program to give an objective assessment of functional status.
Results: Follow-up assessment revealed significant reduction of resting heart rate (77.9±11.2 vs 73.9±9.4, *P* =0.009), systolic blood pressure (144.3±10.5 vs 135.5±10.1, *P*=0.005) and diastolic blood pressure (91.5±4.7 vs 87.8±4.6, *P*=0.04), with a significant decrease in resting RPP (205,345±18,482 vs 107,745±10,432, *P*=0.02). Stress test showed a significant reduction in peak systolic blood pressures and rate pressure product, in conjunction with significant increase in exercise time and METs achieved indicating better aerobic conditioning.
Conclusion: treadmill walking is a feasible, safe, easy and effective aerobic training program that can control mild to moderate hypertensive Egyptian patients.

12 (505). Primary Prevention (Date: 24th May 2005 — Free Paper Session 3.5 (Oral) — (13.30—15:00 Hours))
Multi factorial Intervention Decreases Cardiovascular Disease in Patients with Metabolic Syndrome
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Objective: The metabolic syndrome describes a high-risk population having 3 or more of the following clinical characteristics: upper-bodyobesity, hypertriglyceridemia, hypertension, and abnormal glucose. Cardiovascular morbidity is a major burden in patients with the metabolic syndrome. In this study, we compared the effect of a targeted, intensified, multifactorial intervention with that of conventional treatment on modifiable risk factors for cardiovascular disease in patients with metabolic syndrome.
Methods: The primary end point of this open, parallel trial was a composite of death from cardiovascular causes, nonfatal myocardial infarction, nonfatal stroke, coronary-artery bypass grafting, percutaneous coronary intervention, nonfatal stroke, 160 patients were randomly assigned to receive conventional treatment in accordance with national guidelines and!60 to receive intensive treatment, with a stepwise implementation of behavior modification and pharmacologic therapy that targeted hyperglycemia, dyslipidemia,and,along with secondary prevention of cardiovascular disease with aspirin.
Results: The mean age of the patients was 55.1 years, and the mean follow-up was 7.8 years. The decline in glycosylated hemoglobin values, systolic and diastolic blood pressure, serum cholesterol and triglyceride levels measured after an overnight fast, were all significantly greater in the intensive therapy group than in the conventional-therapy group. Patients receiving intensives therapy also had a significantly lower risk of cardiovascular disease (hazard ratio, 0.47; 95 percent confidence interval, 0.24 to 0.73),retinopathy(hazard ratio,0.42;95 percent confidence interval,0.21-0.86).
Conclusions: A target-driven,long-term,intensified intervention aimed at multiple risk factors in patients with metabolic syndrome reduces the risk of cardiovascular events by about 50 percent.
Keyword: Multifactorial Intervention, Cardiovascular Disease, Metabolic Syndrome.

30 (550). Primary Prevention (Date: 24th May 2005 — Free Paper Session 3.5 (Oral)—(13.30—15:00 Hours))

Improvement in Hemodynamic Responses After 6-Weeks of Tai Chi Exercise in Ethnic Chinese with Coronary Heart Disease Risk Factors

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Background: Physical activity has been shown to reduce coronary heart disease (CHD) risk factors (RF). Reduction in blood pressure (BP) after Tai Chi (TC) exercise programs in persons with CHD RF have been reported, though not in ethnic Chinese living in the United States.
Objective: Examine hemodynamic responses of a TC exercise intervention in ethnic Chinese adults with CHD RF.
Methods: Quasi-experimental design, 6-week TC intervention. Ethnic Chinese >45 years old with at least 1 major RF for CHD, attended 1-hour TC exercise 3x/week for 6 weeks. Intervention adherence, resting & post-exercise hemodynamic responses at baseline and 6 weeks were measured.
Results: A total of 39 subjects, on average 66 (± 8.3) years old, married (85%), Cantonese-speaking (97%), immigrant women (69%) participated. Baseline BP at rest was high. After 6-weeks of TC, a statistically significant reduction in BP was found (p=0.05). Subjects had significantly better aerobic endurance, assessed by a 2-minute step-in-place test (Table 1). Adherence to the TC intervention was high (86%).

Table 1: Changes in Hemodynamic Responses after 6-weeks of tai chi exercise, n=39

Hemodynamic Responses	Baseline mean (SD)	6-weeks mean (SD)	mean change# (SD)	95% LBCI	95% UBCI
Resting					
Systolic Blood Pressure	150.3 (19.8)	134.9 (18.6)	15.38 (19.5)*	9.06	21.71
Diastolic Blood Pressure	85.9 (9.2)	78.0 (9.2)	7.92 (9.7)*	4.77	11.08
Heart Rate	76.4 (14.7)	74.5 (12.6)	1.87 (10.6)	−1.57	5.31
Pressure Rate Product	11.5 (2.9)	10.0 (2.1)	1.49 (2.2)*	0.77	2.21
Post 2-minute step-in-place					
Systolic Blood Pressure	178.7 (23.5)	168.2 (25.1)	10.59 (22.0)*	3.45	17.73
Diastolic Blood Pressure	98.6 (22.4)	82.9 (12.6)	15.74 (24.4)*	7.83	23.66
Heart Rate	92.6 (23.3)	94.2 (21.6)	−1.54 (19.6)	−7.88	4.80
Pressure Rate Product	16.7 (5.3)	15.8 (4.0)	0.96 (4.8)	−0.61	2.52
Number of Steps in 2-minutes	72.9 (13.6)	83.1 (18.1)	10.15 (14.1)*	5.57	14.74

Pressure Rate Product=Systolic Blood Pressure x Heart Rate/1000; LBCI=lower bound confidence interval, UBCI=upper bound confidence interval,#=paired t-test, *p=0.05.

Conclusions: A 6-week intensive TC exercise intervention was able to improve aerobic endurance, and lower BP in ethnic Chinese with CHD RF. TC exercise as an intervention to improve health and lower CHD RF was widely accepted by these subjects, as very high adherence to the intervention was attained.

62 (590). Primary Prevention (Date: 24th May 2005 — Free Paper Session 3.5 (Oral) — (13.30—15:00 Hours))

Detection and Control of Cardiovascular Risk Factors of Primary Care Settings in the District of Florencio Varela, Argentina

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Background: Although risk behaviours and factors for ischemic heart disease are widely known by health professionals, the trend is to focus medical care merely on the reason for consultation and/or prior diagnosis, without a preventive attitude. Valid information obtained directly from the community making use of their perceptions with respect to the health-disease phenomenon and medical consultations has proven crucial when planning changes in health promotion.
Objectives: To assess the self-reported prevalence of cardiovascular (CV) risk factors: smoking, sedentary lifestyle, hypercholesterolemia, obesity and hypertension; and to estimate the performance of local physicians in the identification and control of them, based on patients' reports of the clinical interview, actions taken within physical examination, biochemical assessment, and prescribed therapy.
Setting: Analysis of data from a survey carried out by PROPIA (Program for Prevention of Infarction in Argentina) in the District of Florencio Varela, Greater Buenos Aires. Study population consisted of 1,285 adults aged 15—65.
Materials and Methods: Analytic cross-sectional design, utilising a face-to-face interview household survey. Multistage clustered sampling was selected. Data came from questions on personal history and current habits or conditions associated with increased risk. Period prevalence data on smokers and non smokers was stratified by demographic and socioeconomic data and medical history. Odds ratios of the effect of the smoking condition compared to the non-smoking condition were estimated on several outcomes, including aspects of the physician's performance during the last consultation. Bivariate and multivariate analyses were performed, controlling for important confounders. Also, different patterns of the medical interviews provided were assessed and compared for detected and undetected smokers.
Results: Prevalence of smoking was 33.6%. Sedentary lifestyle reached 65%. Unadjusted and adjusted summary odds ratios comparing smokers with non-smokers are presented for each outcome studied. As the number of coronary risk factors assessed in the same medical consultation increased, the number of people included in each ''interview pattern'' group fell steeply.

Limitations: mainly coming from recall and selection bias, from shortcomings related with the observational tool, and confounding.
Conclusions: In this sample of a suburban population, indirect data show that primary care physicians did not entirely fulfil recommended courses of action when providing care to patients with known CV factors. Smokers who were expected to be inquired about other important conditions like hypertension and cholesterol level were poorly examined. No evidence was found that knowledge of tobacco status significantly changed the physician's approach during patient's consultation.

116 (632). Primary Prevention (Date: 24th May 2005 — Free Paper Session 3.5 (Oral) — (13.30—15:00 Hours))
A Successful Health Education Program to Improve Prevention in People with a Family History of Premature Coronary Heart Disease
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Aim: Large-scale epidemiological studies show that first degree relatives (siblings and offspring) of patients with premature coronary heart disease (CHD) (males younger than 55 years and females younger than 65 years) have themselves a significantly increased risk for CHD (*Sesso et al.,2001*). However screening for CHD risk factors in close relatives of patients with premature CHD is not widely practiced in Europe (*Euroaspire II,2003*).
The Family Screening Project is situated in the primary prevention of cardiovascular diseases.
The project is raised to examine whether a health education program can increase the active screening of family members of patients with CHD. Moreover the cost-effectiveness of the program and the perception of the participants are studied.
Methods: A controlled, randomised study design is used, with a control group and an intervention group. In a pre-test the comparability of the two groups was studied. The health education program that has been implemented in the intervention group, consists of patient visits where health information is given.
Afterwards brochures have been sent to the patients relatives. The post-test will compare the groups again after the intervention.
Results: Only 18.6% of the first degree relatives was examined in the pre-test checking their risk of CHD as a result of the family history of premature CHD (24.1% of the siblings and 10.8% of the offspring). As a consequence of the intervention, the number of family members that is screened increased to 60.1% (67.8% of the siblings and 52.4% of the offspring). The intervention group and the control group were comparable in the pre-test.
The intervention is well accepted by the first degree relatives. Almost everybody consider it important to be informed about their higher risk for CHD and is glad to know better their CHD risk.
Conclusion: The active screening of the relatives has increased through the specific health education program. The Family Screening Project is a feasible and efficacious way to improve primary prevention in people with a family history of premature coronary heart disease.

199 (608). Primary Prevention (Date: 24th May 2005 — Free Paper Session 3.5 (Oral) — (13.30—15:00 Hours))
The Impact of Medical Education on the Desirable Target Lipid Values in Patients with Dyslipidemia
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Objectives: We studied the knowledge of GPs about the target values of lipid parameters in patients (pts) with coronary heart disease (CHD).
Materials and Methods: Two consecutive questionnaire-based analyses had been carried out respectively with 600 and 830 GPs. Medical education, aiming at the treatment of cardio-vascular diseases following the clinical guidelines, had been performed in between both inquiries.
Results: The first inquiry (before the education courses) revealed the following answers by GPs: 1. Pts with CHD should have total cholesterol (TC) levels >5 mmol/L (44.8%) and <5 mmol/L (55.2 %); 2. Pts with a previous myocardial infarction (MI) should have TC levels >5 mmol/L (27.7%) and <5 mmol/L (69%); 3.3.3% of GPs were not aware of the target TC values defined by the guidelines. 4. LDL-C should be <2,6 mmol/L according 60.9% of the GPs and >2,6 mmol/L according 31.3% in pts with CHD; 5. In pts with a previous MI LDL-C values should be <2,6 mmol/L for 66.2% of GPs and >2,6 mmol/L for 25.2%.
The second inquiry showed the following results: 1. The TC values in pts with CHD should be higher than 5 mmol/L (21.2 %) and lower than 5 mmol/L (78.8%); 2. The TC values in pts with previous MI should be higher than 5 mmol/L (18.5%) and lower than 5 mmol/L (81.5%), and lower than 4,5 mmol/l — 50.9%; 3. The LDL-C levels in pts with CHD to be lower than 2,6 mmol/L (75.2 %), 44.9% pointed out levels lower than 2,5 mmol/L, 24.8% of GPs believed the LDL-C levels for the same risk group to be higher than 2,6 mmol/L; 4. The LDL-C levels for pts with previous MI should be lower than 2,6 mmol/L (80.1%), 54.8% aimed values lower than 2,5 mmol/L and higher than 2,6 mmol/L - 19.9%.
Conclusions: The medical educational courses seemed to be important for the knowledge concerning secondary cardio-vascular prevention. There had been a significant increase of the GPs number acquainted with the latest clinical guidelines.

335 (788). Primary Prevention (Date: 24th May 2005 — Free Paper Session 3.5 (Oral) — (13.30—15:00 Hours))
Health Promotion Strategies in a School Population. Its Cost-Effectiveness and Feasibility for Primary Prevention of CVD
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WHF

Objective: To evaluate cost-effectiveness of a program of intervention with strategies to promote healthy life style at the school age, for primary prevention of CVD.
Method: *The study population* is school- children 5° and 6°grade, from 5 selected municipalities of Santiago, the capital city of Chile.
Effectiveness evaluation was assessed through a quasi-experiment, selecting intervention (IP) and reference population (RP) as control. The study population were 2681 children, 1435 for IP and 1246 for the RP. A baseline survey was performed and repeated three years later in the same conditions, as instrument, physical measurements and laboratory tests, in both groups. Indicators selected, were Tobacco (T-C) and Alcohol (OH-C) consumption, plus knowledge, perceptions and attitudes about health and CVD. We didn't expect changes of biological risk factors. Teachers and parents were involved in the strategies. The criterion of Net Change was applied to assess effectiveness.
Cost Evaluation: considered institutional perspective. *Direct, Municipality administration and Program costs* were analyzed.

Incremental costs were calculated regarding the Reference Municipalities. A *univariate sensitivity analysis* was done based on the beneficial discount rate and cost discount rate. *Cost-effectiveness coefficient* was calculated. Cost were translated to US$ at the rate of exchange of the moment of the investigation.
Results *Effectiveness*: Significant Net Change was observed in both indicators, TC and OHC within the IP: For TC: in girls 8.11% (p<0.001), in boys 9.86%(p<0.001); for OHC in girls 8.0% (p<0.0001), in boys 9.46% (p<0.001); association among consumption variables, allowed to estimate the OR, which s: 14.9 when there is TC after OHC; 24.22 when there is Marijuana consumption after TC and 66.45 when there is marijuana consumption after OH and TC.
Costs: The incremental cost per boy prevented from OH -C is US$ 112 (103.,.6-114,3) and prevented from T-C is US$ 154(142,.7-157,.4). Per each girls prevented from OH-C is US132(129, $9-133, 3) and prevented from T-C is US$ 130(122,5-135,2). Result about additional cost per each municipality for the Progam is US11.7/2 year and the cost for treatment for T-C is US1.388/$year and for OH - C, US$ 3.817/2years.
Discussion: Schools are community resources to develop health promotion strategies in children. On the other hand, there is evidence of the beginning at this age of the natural history of atheroesclerosis,
Conclusion: It is possible to apply primary prevention strategies against CVD.

33 (552). Risk Prediction Scores — I (Date: 23rd May 2005 — Free Paper Session 2.8 (Oral) — (13.30—15:00 Hours))
Prediction of Subjects at High Cardiovascular Risk in the Area of the New Bologna AUSL
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The introduction of coronary risk charts has allowed the prediction of cardiovascular events in individual subjects. However, such tool has not been implemented in public health programs. We have calculated the profile of individual coronary risk using the ESC risk chart (1998 release) and the data base of the Osservatorio Epidemiologico Cardiovascolare study population (Emilian cohort in 1998), according to the new Italian risk chart (Progetto Cuore, Istituto Superiore Sanità). Data were related to the 480.000 residents in our Provincia of Bologna (12/31/1998, as reported from the web site according to age classes from 40 to 69 years old), in order to obtain the number of subjects at extremely low, low, mid, high and very high risk of subsequent coronary events. We have found that approximately 7% of subjects are at high coronary risk (greater than 20% at 10-year follow-up, figure 1), when compared to 12% following ESC chart. In absolute terms, an overall number of about 30.000 men and women (40—69 yo) will deserve a prevention approach, because they have been found to be at high risk of MI or stroke. It has been also calculated that each General Practitioner has to contact about 35 assisted high risk subjects during a 1-year period.
Conclusions: The prediction of coronary and cardiovascular global risk in the general population has to be performed with local as well as actuarial models. Such operation may help the cost/effective approach to prevention strategies: accordingly, the diagnostic and therapeutic efforts will be oriented to the small subset of subjects presenting a really high risk of event rate.

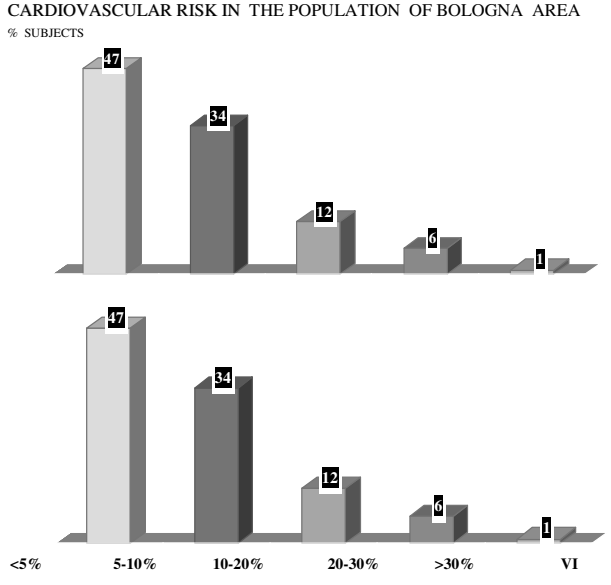

Figure 1. CArdiovascular Risk in the Population of Bologna Area4

132 (646). Risk Prediction Scores — I (Date: 23rd May 2005 — Free Paper Session 2.8 (Oral) — (13.30—15:00 Hours))
Estimation of Ten-year Risk of Fatal and Non-fatal ischemic Cardiovascular Diseases in Chinese
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Objectives: To develop a cardiovascular risk prediction model appropriate for the Chinese population.
Methods: We developed sex specific optimal risk prediction models using Cox proportional hazards regression. These were based on 17 years of clinical follow-up data from a training group consisting of the USA-PRC Collaborative Study of Cardiovascular and Cardiopulmonary Epidemiology cohort after adjustment for long-term change in the major risk factors. The USA-PRC team followed these participants every 2 years for 15.1 years until 2000. Three hundred and sixty ischemic cardiovascular events (ICVD), 105 CHD events and 266 ischemic strokes occurred during the follow-up. These data were used to create the optimal Cox regression models which were then tested in the 17,330 participants in the China Multi-Center Collaborative Study of Cardiovascular Epidemiology cohort.
We tested the predictive capability and accuracy of the models by calculating the area under ROC curve and comparing predicted versus observed cardiovascular disease incidence in an independent Chinese cohort. We built and tested simplified point score prediction models that can be easily applied in Chinese primary care clinics.
Results: ROC curve areas for sex-specific Cox regression models for predicting 10-year risk of ICVD were 0.803 +/- 0.029 for men and 0.885 +/- 0.022 for women in the test group. A simplified point score model resulted in almost identical c statistics when applied to the test group.
Conclusions: The Cox regression prediction models and simplified point score model have satisfying predictive capability for estimating the integrated cardiovascular risk in Chinese.
Keywords: Cardiovascular disease; integrated risk estimation; prediction model; evaluation tools; Chinese population.

145 (655). Risk Prediction Scores — I (Date: 23rd May 2005 — Free Paper Session 2.8 (Oral) — (13.30—15:00 Hours))
A Comparison of the Framingham and Score Risk Functions in a Period with High Cardiovascular Mortality in Norway

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Objective: Guidelines on prevention of cardiovascular disease include an assessment of the individual's total burden of risk. The first functions for absolute risk were based on the Framingham study. The recent European guidelines recommend the calculation of ten-year risk of cardiovascular death according to the SCORE model based on European cohorts. The aim of this study is to compare predictions of total cardiovascular mortality according to the Framingham (Anderson et al, Am Heart J 1990) and the SCORE model (Conroy et al, Eur Heart J 2003) with the observed mortality in a period with high cardiovascular mortality in Norway.
Material and methods: All inhabitants aged 35-49, in three Norwegian counties, were invited to the Norwegian County Study in 1974-78, and 90 percent participated. 16679 men and 16253 women aged 40-49 years, without myocardial infarction at baseline were included in the present study. They have been followed with respect to cause specific mortality through Dec 31 2000. We calculated Spearman rank correlations, percentages of all cardiovascular deaths (CVD) occurring in the upper decile of the risk functions during total follow-up, area under the ROC curves and observed and predicted number of deaths during the first ten years of follow-up.
Results: The rank correlations varied from 0.93 in women aged 40-44 to 0.98 in men 45-49 years at baseline. Percentages of all CVD deaths that occurred in the upper decile of the risk functions during follow-up, were 25 percent for both risk functions in men aged 40-44 and 22-23 percent in men aged 45-49, whereas the percentages were 32 - 33 in both age groups of women for both functions. Areas under the Roc curves were similar for the two risk functions.

Observed and predicted number of CVD deaths during the first 10 years of follow-up were:

		Mean		Predicted		Predicted/observed	
	N	personyears	Observed	Framingham	SCORE	Framingham	SCORE
Men	16679	9.80	392	378	396	0.97	1.01
Women	16253	9.92	87	131	71	1.50	0.81

Conclusion: The SCORE and Framingham risk functions ranked the participants similarly according to cardiovascular risk. Both functions predicted correct level for men in a period with high cardiovascular mortality in Norway. Framingham overestimated and SCORE slightly underestimated the risk in women.

264 (736). Risk Prediction Scores — I (Date: 23rd May 2005 — Free Paper Session 2.8 (Oral) — (13.30—15:00 Hours))
10 Years Follow-up of Coronary Artery Disease Risk Factors of Estonian Diplomats
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Objectives: The European Society of Cardiology (ESC) recently issued guidelines on cardiovascular (CV) prevention (Eur Heart J 2003; 24:1601-10) in which a new procedure is proposed for evaluation of global CV risk, the SCORE system. It provides the practitioners with risk charts, separately for high- and low-risk countries. Estonia is a high-risk country.To examine CV risk factors among employers of Ministry of Foreign Affairs of Estonia.
Methods: Since 1992 up to 2004, 286 employers of Ministry of Foreign Affairs of Estonia both men and woman were surveyed for CV risk factors. Mean age for men 36,8± 8,6 years and for woman 32,9- 9,1 years. Using the risk chart the 10-year risk of fatal CV disease was determined for each subject. Results are calculated according to the classes of CV risk, as they are proposed in ESC issued guidelaines, namely <5%, 5-10%,10-20%, 20-40% and = 40%. The chart makes use of age, gender, smoking status, cholesterol level and systolic blood pressure level.
Results: Globally current CV risk appeared low in this occupational population. Diabetes and history of CV disease were virtually absent. No deaths occurred since the time of the survey. Only 14% of men and 12% of women were atributed to hypertension; 12% of men and 8% of women have high cholesterol level and 5% of men and 3% of women were smokers. Charts permits a fairly good assessment of the CV risk.

Risk of CV Disease for 10 years	<5%	5—10%	10—20%	20—40%	≥ 40%
MEN	79%	10%	6%	3%	2%
WOMEN	82%	8%	8%	2%	0

Conclusion: Use of data from the Framingham study has been criticised when used to evaluate risk in European populations. Employers of Ministry of Foreign Affairs of Estonia had low risk of cardiovascular disease, only 5% of men and 2 % of women had risk more than 20%. Since 2004 we continue survey using new SCORE system, using here the risk chart for high-risk European countries, seems to be quite appropriate.

317 (779). Risk Prediction Scores — I (Date: 23rd May 2005 — Free Paper Session 2.8 (Oral) — (13.30—15:00 Hours))
Application Of Framingham Risk Equation in a Brazilian Sample Population and its Implications for Primary Prevention
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Background: Recent guidelines for the management of hyperlipidaemia have highlighted the importance of estimating absolute coronary heart disease (CHD) risk for effective targeting of lipid lowering drug therapy. Framingham prediction model is the most widely used in different guidelines. There is no data about the distribution of CHD risk in Brazilian population and the impact of current guidelines in terms of the amount of subjects eligible for drug therapy.
Objective: To determine 10-year risk of CHD and the amount of eligible subjects for primary prevention with cholesterol lowering drug therapy in a Brazilian sample population.
Methods: 1090 subjects (894 males), age 30—74 years with no history of cardiovascular disease were evaluated with Framingham model described by Wilson et al (Circulation 1998). Based on the NCEP-ATP III, and using a rigorous criteria, it was be considered the subject eligible for drug therapy if the 10-year risk

was >20% and LDL-C ≥130 mg/dl, or 10-20% and LDL-C ≥160 mg/dl or <10% and LDL-C ≥190 mg/dl. Diabetic subjects (11.9% of males and 11,1 of females) were included in the highest risk category.

Results: 1) 10-year risk of CHD was higher in males, and increased with age in both sexes; 2) In males, mean risk at ages of 30-39; 40-49; 50-59 and ≥ 60 years were respectively: 4.8 ± 2.77%; 9.61 ± 5.56%; 16.65 ± 9.14% and 27.38 ± 12.57%. The corresponding values found in females were: 1,56±1.42%; 5,92±4.34%; 12.12 ± 8.12% and 14.55 ± 17.22%; 3) According to the adopted criteria, 33.9% of men and 32.3% of women were eligible for drug therapy, being 23.3% of men with risk >20%; 8.7% with risk 10-20% and 1.9% with risk <10%, and 11% of women with risk >20%, 14.6% with risk 10-20% and 6.6% with risk <10%.

Conclusion: In the studied sample a great amount of people would be target for drug therapy based on the levels of LDL-C and the 10-year risk of CHD, according to the NCEP-ATP III.The validation of using the Framingham model in a non-Framingham population can be questioned, but in the lack of more representative data this mathematical model was the one proposed in Brazilian guidelines. The impact of these findings in terms of allocation of community resources should be considered.

330 (784). Risk Prediction Scores — I (Date: 23rd May 2005 — Free Paper Session 2.8 (Oral) — (13.30—15:00 Hours))

Utility of a Clinical Risk Score in Predicitng Undiagnosed Diabetes and Increased Vascular Risk in Urban Asian Indians

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Objectives: Individuals with Type 2 diabetes who remain undiagnosed are at high risk for future vascular events. This study aimed to develop a risk score to predict the likelihood of having undetected diabetes and increased vascular risk in individuals, based on identification of clinical risk factors for type 2 diabetes.

Design, settings and participants: The risk score was developed in urban and rural participants of Delhi (aged 35-64 years) from a representative population survey. Multivariate logistic regression with undiagnosed diabetes as the dependent variable was performed and summed β-coefficients used to generate a composite risk score. The validity of the composite risk score was tested in an independent multi-center cross-sectional survey conducted by us in 2001-03 in a different population, by applying derived β-coefficients.

Results: Complete baseline data were available for 4044 individuals (30% rural, 50% women in both areas) in the first population, of whom 440 had diabetes (199 undiagnosed). Age, waist circumference, high blood pressure and family history of diabetes were significant (P<0.05) predictors of diabetes status in the multivariate model. The score had a ROC area-under-curve of 0.72 (95% CI:0.68-0.75) in the first population and 0.69 (0.68-0.72) in the second population (n=5819, of whom 655 had diabetes [218 undiagnosed]). A score value >17 in second population had a sensitivity of 0.70 (95% CI: 0.64-0.76), specificity of 0.59 (0.58-0.60), and a positive likelihood ratio of 1.7 (1.5-1.9) for predicting diabetes in undiagnosed cases. The risk score had better diagnostic accuracy for women. Individuals with risk score>17, but not found to be have diabetes on screening (false positives) still had adverse cardiovascular risk profile (Table).

Conclusion: Application of this risk score identified a substantial proportion of individuals with undiagnosed diabetes as well as increased vascular risk, using tools easily available in low-resource settings.

151 (659). Risk Prediction Scores — II (Date: 24th May 2005 — Free Paper Session 3.8 (Oral) — (13.30—15:00 Hours))

Coronary Heart Diseases and their Risk Factors in Black South Africans — A Case-Control Study

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Background: Coronary heart disease (CHD) was uncommon in black people living in Africa before 1970. Since then CHD risk factor levels have increased, while CHD rates remained low in many regions. Previous authors suggested that CHD will remain uncommon in black people from Africa. Limited data are available on CHD and the relationship to the risk factors among these people.

Objective: To conduct a case-control study to assess the relationship between CHD and its known risk factors in poor, peri-urban black South Africans. The relationship between these risk factors and other atherosclerosis related target organ damage is also investigated.

Methods : This study recruited 89 cases with CHD and 356 controls attending the Kalafong hospital from 1982 to 1986. Categorisation of the cases are based on World Health Organisation criteria. Family and personal medical history were recorded, along with a clinical examination and special investigations to assess risk factor patterns, clinical presentation and target organ damage. Stepwise multiple logistic regression analyses were done to assess the association between risk factors and CHD as well as between the risk factors and target organ damage.

Results: Far more cases than controls had a family and personal medical history, including clinical abnormalities related to CHD and target organ damage. The followin\g risk factors were related to CHD: family history of myocardial infarction (OR 17.29, 95% CI, 5.48-54.51), hypertension (OR 8.38, 95% CI,

Table1: Cardiovascular risk profile according to risk score and diabetes status in individuals with no history of diabetes (n=3043)

Prevalence of risk factors (%)	Risk score≤17 Diabetes — *(True negative)*	Risk score≤17 Diabetes + *(False negative)*	Risk Score>17 Diabetes — *(False positive)*	Risk Score>17 Diabetes + *(True positive)*
High Total cholesterol/HDL ratio (≥ 5)	22	34	35	46
Hypertriglyceridemia(Serum triglyceride≥150 mg/dl)	22	45	38	54
Impaired fasting glucose (Fasting plasma glucose≥110mg/dl)	4	Not applicable	12	Not applicable
Hypertension (as per JNV VI criteria)	10	20	50	65
Overweight (Body mass-index≥25 kg/m^2)	22	38	65	70

3.66-19.17), family history of hypertension (OR 4.33, 95% CI 2.21-8.52), low HDLC/LDLC ratio (OR 2.82, 95% CI, 1.24-7.22), type 2 diabetes (OR 2.99, 95% CI, 1.19-6.68). Hypercholesterolaemia was marginally associated (OR 2.53, 95% CI 0.92-6.89). The risk factors were also related to target organ damage.
Discussion: An association exists between CHD and the major risk factors for cardiovascular diseases in black peri-urban South Africans. A family history of myocardial infarction was strongly associated with CHD, suggesting that genetic factors may play a significant role in the development of CHD in people of African descent.

152 (656). Risk Prediction Scores — II (Date: 24th May 2005 — Free Paper Session 3.8 (Oral) — (13.30—15:00 Hours))
European Risk Chart for Fatal Cardiovascular Events, Tailored to Germany (Score Deutschland)
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Objective: To provide an easy to use risk scoring system to predict 10 year risk for fatal cardiovascular diseases (CVD) due to age, sex, and the classical risk factors smoking, hypertension and hypercholesterolemia, based on European cohort studies and tailored to Germany.
Methods: The SCORE project assembled a pool of datasets from 12 European prospective cohort studies on CVD endpoints and accumulated 2.7 million person years. SCORE calculated 10 year risks of fatal cardiovascular events for high-risk and low-risk regions of Europe. The HeartScore project combines relative risks from the SCORE project with the country specific official mortality data and the country specific data on the distribution of classical risk factors to produce risk charts for single European countries. For the German risk chart, risk factor prevalence was obtained from a representative national health survey. The risk scoring system is provided as a paper chart and as a freely available computer program.
Results: 10 year risks for fatal CVD in Germany lie between those of the high-risk and low-risk charts from SCORE. For example, the 10 year risk for a male smoker, age 65, with 140 mmHg systolic blood pressure and 5 mmol/L total cholesterol is 15% in the high-risk region (Finland, Norway, Denmark), 12% in Germany, and 8% in the low-risk region (Belgium, Italy, Spain).
Discussion and Conclusions: Risk charts are a valuable tool for decision making and risk communication in a clinical setting. Absolute risks for cardiovascular disease are known to show considerable regional variability. Therefore, regional risk charts are needed.

155 (662). Risk Prediction Scores — II (Date: 24th May 2005 — Free Paper Session 3.8 (Oral) — (13.30—15:00 Hours))
The Score Risk Function Applied on Population Surveys in Norway 2000-2003
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Background: European guidelines on cardiovascular disease (CVD) prevention in clinical practice (De Backer et al. 2004, Atherosclerosis) include a new risk algorithm, the SCORE risk function (Conroy et al. 2003, Eur Heart J). SCORE estimates the probability of cardiovascular death within 10 years based on age, blood pressure, cholesterol and cigarette smoking. An estimated risk of 5% or above qualifies for targeted intervention. SCORE divides the European population into high risk and low risk regions, where Norway is classified as a high risk country. SCORE also allows the estimation of total CVD risk to be projected to age 60 for young individuals.
Objective: To study the distribution of 10-year absolute risk of fatal cardiovascular disease assessed by SCORE in a Norwegian population, and estimate the percentage of the population that qualifies for preventive treatment according to age and gender.
Methods: Data was obtained from large epidemiological surveys conducted by the Norwegian Institute of Public Health in five Norwegian counties in 2000-2003. All inhabitants in selected age groups were invited. The participation rate was 49.1%, and the investigation includes 38 530 men and women from these data sets. There were no exclusion criteria with regard to previous cardiovascular disease or drug use. The SCORE algorithm was applied on this population using the high risk coefficients of the SCORE model.
Results: The results are presented in the Table
Conclusions: A considerable percentage of young men reached the level where preventive treatment is recommended, not based on the risk they have today, but based on a risk they will attain in the future. Moreover, for men at age 59 and older, the majority qualified for preventive treatment. Few women can be considered at high risk evaluated by SCORE, also after projection to age 60, with an exception for the oldest women, where almost all qualify for prevention.

194 (685). Risk Prediction Scores — II (Date: 24th May 2005 — Free Paper Session 3.8 (Oral) — (13.30—15:00 Hours))
Contribution of Sociodemographic Factors to Cardiovascular Risk Prediction in 100,776 Participants in the Vorarlberg Health Monitoring & Promotion Programme (VHM&PP)
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Objective: In a recent study we showed that the cardiovascular risk function developed by the European SCORE group proved an appropriate tool for cardiovascular risk estimation in Austrian clinical practice. The SCORE risk function predicts the individuals' 10-year absolute risk for fatal events based on age, smoking, systolic blood pressure, and either total cholesterol or the

Proportions (%) with a 10 year risk of $\geq$ 5% now or if projected to age 60 for developing a fatal CVD event.

	Age groups							
	30-31		40-41		45-46		59-61	75-77
	Now	Projected	Now	Projected	Now	Projected	Now	Now
Men (n=17393)	0	48.2	0	60.7	1.4	66.8	77.9	100
Women (n=21137)	0	0.4	0	1.9	0	4.1	14.2	99.3

cholesterol/HDL ratio. However, there were additional variables showing a significant effect on cardiovascular risk in addition to the SCORE. The aim of this paper was to assess the specific contribution of sociodemographic factors to cardiovascular risk, in addition to the risk explained by established risk factors.
Methods: The Vorarlberg Health Monitoring and Promotion Programme (VHM&PP) in Austria is an ongoing prospective, longitudinal health programme consisting of repeated examinations performed by general practitioners and internists. Data recording started in 1985 and mortality information was linked to the database by 2001. Participants are free-living citizens across the adult age spectrum (20—95 years), and both sexes are represented. In the current study, risk profiles and mortality outcomes of 100,776 individuals (44,179 men and 56,597 women) who were followed up for at least 10 years were analysed.
Results: A total of 1837 deaths (1.8%) from cardiovascular disease within 10 years of follow-up was observed, 981 (2.2%) in men and 856 (1.5%) in women. The SCORE function correctly estimated CVD mortality revealing an Aera-Under-the-Curve value of 0.92 (95%CI 0.91-0.92) in Receiver-Operating-Characteristic analyses. However, multivariate analyses showed that obesity in men only, and for both sexes increased levels of glucose, triglycerides, gamma-glutamyl-transferase, job and marital status significantly contribute to the SCORE as additional independent risk factors. The SCORE underestimated the risk of male blue collar worker by 0.4%, the risk of female blue collar worker by 0.3%. The actual mortality of widowed men was 1.1% higher, the risk of widowed women 0.7% higher than predicted by the SCORE.
Discussion and Conclusion: The high performance of the SCORE confirms the role of the well established risk factors blood pressure, cholesterol, and smoking. However, our analyses showed that social risk factors also contribute independently to risk, not mediated through the classical risk pathways. The fact that blue collar respondents had a worse prognosis may be explained through psycho-social mechanisms which are strongly class related. Second, there is higher compliance with treatment regimens among the more affluent, which we have also demonstrated with VHM&PP.

246 (667). Risk Prediction Scores — II (Date: 24th May 2005 — Free Paper Session 3.8 (Oral) — (13.30—15:00 Hours))
Comparison of Risk Estimates in Metabolic Syndrome Using the Framingham, Procam and Score Methods
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Objective: Risk estimation methods have been developed over the years to calculate risk of coronary heart disease (CHD) and current recommendations base intervention on such total burden of risk. We applied three methods derived from major projects (Framingham Risk Score [FRS], PROCAM and SCORE) to a nondiabetic population with metabolic syndrome (MS) components.
Methods: We prospectively screened 9,137 participants in Western Switzerland from 2001-2004 (60% women, aged 20-69y) for cardiovascular risk factors (RF) using standardized methods (BMI, waist, blood pressure, lipids, glucose, lifestyle, current drug history) with a mobile unit. Metabolic syndrome was defined according to ATPIII (*JAMA* 1999;285:486). Ten-year CHD risk was calculated with FRS (*JAMA* 1998;97:1837) and PROCAM (*Circulation* 2002;105:310), and the 10-year total cardiovascular risk with SCORE (*Eur Heart J* 2003;24:987). Analyses were stratified by 10-y age categories and gender. Threshold for intensified RF intervention was 20% (FRS, PROCAM) and 5% (SCORE).
Results: Risk estimates greatly varied among methods and men had greater risk than women (FRS 8.7±7.2% [men] vs. 3.4±3.4% [women]; PROCAM 4.4±7.1% vs. 1.0±2.0%; SCORE 1.6±2.6% vs. 0.9±2.3%). Furthermore, participants with MS (n=805 men [8.6%], n=317 women [14.8%]) presented greater risk than non-MS individuals with any of the three methods. The number participants requiring intensified RF intervention also varied (FRS *n*=345, PROCAM *n*=56 and SCORE *n*=263).
Conclusions: Large discrepancies existed in risk estimates and number of participants needing intensified RF intervention across the three methods. With the worldwide epidemic of MS, there is an urgent need for CHD prevention to develop a risk estimate method applicable in clinical practice to individuals with MS or MS components with the corresponding recommendations for intensified RF intervention.

212 (695). Risk Prediction Scores — II (Date: 24th May 2005 - Free Paper Session 3.8 (Oral) — (13.30—15:00 Hours))
Prevalence of Cardiovascular Risk Factors in Coronary Heart Disease Patients with Different Low-Density Lipoprotein Phenotypes
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Low-density lipoprotein (LDL) heterogeneity is now well recognized as an important factor reflecting differences in lipoprotein composition, size, metabolism and genetic influences. There is an abundant evidence of data supporting the clinical importance of small, dense LDL in the development of coronary heart disease.
Objective: To assess the prevalence of cardiovascular risk factors in coronary heart disease patients with LDL subclass patterns A and B
Study population: 1220 coronary patients (63,7% male and 36,3% female, mean age 61.3±11) with a diagnosis of coronary artery disease (CAD).
Methods: Demographic, anamnestic and clinical data as well as complete lipid profile — total cholesterol (TC), low-density lipoprotein cholesterol (LDL-C), high-density lipoprotein cholesterol (HDL-C) and triglycerides (TG) have been obtained. Triglicerydе/high-density lipoprotein cholesterol (T/DTL-C) ratio has been calculated. T/HDL-C ratio >3.8 identified patients with LDL phenotype B while ratio <3.8 identified LDL phenotype A patients.
Results and discussion: Using a TG/HDL cholesterol cutpoint of 3.8, LDL profile in 60,5% of patients has been qualified as phenotype A and in 39,5% - as phenotype B. The incidence of CHD risk factors was higher in phenotype B patients as compared to phenotype A subjects (hypertension — 85.1% vs. 72.2%, p<0.001, diabetes mellitus — 13.9% vs. 5.5%, p<0.001, obesity — 46,7% vs. 28.0%, p<0.001, reduced physical activity — 64.5% vs. 57.0%, p<0.001). Metabolic syndrome has been established in 85.1% of phenotype B patients, while this cluster of metabolic disorders have been detected only in 36.8% phenotype A subjects. The incidence of myocardial infarction, presence of multiple high-grade coronary lesions were also higher in phenotype B patients as compared to their counterparts with phenotype A (22.2% vs. 17.2%, p<0.05 and 13,7% vs. 8.7%, p<0.05).
Conclusion: LDL phenotype B was established in 39.5% of coronary heart disease patients. Atherogenic LDL subclass pattern B correlated with higher incidence of major CHD risk factors.

141 (652). Secondary Prevention (Date: 24th May 2005 — Free Paper Session 3.6 (Oral) — (13.30—15:00 Hours))

Significant Difference in use of Secondary Preventive Medication According to Socioeconomic Status in Denmark

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Objective: To examine the influence of socioeconomic status on the use of secondary preventive medication after acute myocardial infarction (AMI) in Denmark.

Methods: Via national registers we examined outpatient use of statins, beta-blockers and angiotensin converting enzyme inhibitors (ACE-i) among all Danish first-time AMI patients, 30 to 65 years old, admitted in 1996 to 2002 and surviving at least 6 months after discharge.

Via the Danish national prescription database, we defined patients as medicine users if at least one prescription of the respective drug was filled within 6 months after discharge.

Because income and education were highly interrelated, patients were divided into 9 socioeconomic groups according to individual income and education.

Odds ratios (OR) and 95% confidence intervals (CI) were calculated separately for each drug using multivariate logistic regression, adjusted for sex, age, year of admittance, diabetes, heart failure, marital status and socioeconomic status.

Results: A total of 16,600 patients were identified (see table).

Note: Socioeconomic groups were highly significant for all three drugs ($p<0.01$).

Conclusion: It seems that there is a relationship between lower socioeconomic status and lesser use of secondary preventive drugs. This could e.g. be due to the likelihood of receiving these drugs or the expenditures. The Danish health care system is a tax-financed public service, ensuring every citizen free access to general practitioners hereby providing equal opportunities in receiving these drugs. Payments to these drugs receive as much as 85% reimbursement, though statins were still somewhat expensive in this period, beta-blockers and ACE-i were inexpensive. It seems that physician's need to be more focused on the lower socioeconomic groups to reassure proper treatment to these patients.

149 (660). Secondary Prevention (Date: 24th May 2005 — Free Paper Session 3.6 (Oral) — (13.30—15:00 Hours))

Lipid Lowering Drug Treatment and Changes in Lipid Levels After First Myocardial Infarction among Younger Men and Women

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Background: Since the presentation of the results from the 4S study in 1994 there has been an increase in the use of lipid lowering drugs. How this has influenced lipid levels in different groups of patients has not been explored. The aim of the study was to investigate among younger patients with a first myocardial infarction how the use of lipid lowering drugs has changed since 1994, and how this has influenced mean levels of serum cholesterol and serum triglycerides.

Method: 611 men (78%) and 173 (22%) women below 65 years of age admitted to Sahlgrenska Universitetssjukhuset/Östra, Göteborg, Sweden, during the years 1994—2002 with a first myocardial infarction were included in the study. At the follow-up 3

Table: Adjusted OR estimates for secondary preventive medication use in 9 socioeconomic groups.

	EDUCATION		
INCOME GROUP	**> 13 years**	11-12 years	8-10 years
Highest third			
Number	1554	2744	1518
Statin users, n (%)	961 (62%)	1631 (59%)	860 (57%)
OR (95% CI)	*1.69 (1.47—1.93)*	*1.56 (1.39—1.75)*	*1.48 (1.29—1.69)*
Beta-blocker users, n (%)	1338 (86%)	2329 (85%)	1271 (84%)
OR (95% CI)	*1.51 (1.27—1.79)*	*1.39 (1.20—1.60)*	*1.41 (1.20—1.67)*
ACE-i users, n (%)	549 (35%)	982 (36%)	513 (34%)
OR (95 % CI)	*1.26 (1.10—1.45)*	*1.30 (1.15—1.46)*	*1.20 (1.04—1.38)*
Middle third			
Number	478	2541	2485
Statin users, n (%)	254 (53%)	1448 (57%)	1335 (54%)
OR (95% CI)	*1.13 (0.92—1.39)*	*1.38 (1.23—1.55)*	*1.26 (1.12—1.41)*
Beta-blocker users, n (%)	390 (82%)	2115 (83%)	2022 (81%)
OR (95% CI)	*1.18 (0.92—1.52)*	*1.26 (1.10—1.45)*	*1.24 (1.08—1.41)*
ACE-i users (%)	173 (36%)	866 (34%)	857 (34%)
OR (95 % CI)	*1.15 (0.93—1.43)*	*1.10 (0.98—1.24)*	*1.10 (0.98—1.24)*
Lowest third			
Number	283	1763	3234
Statin users, n (%)	145 (51%)	898 (51%)	1538 (48%)
OR (95% CI)	*1.06 (0.81—1.38)*	*1.08 (0.95—1.22)*	Reference
Beta-blocker users, n (%)	218 (77%)	1407 (80%)	2433 (75%)
OR (95% CI)	*0.91 (0.67—1.23)*	*1.12 (0.97—1.30)*	Reference
ACE-i users, n (%)	112 (40%)	691 (39%)	1230 (38%)
OR (95 % CI)	*1.26 (0.97—1.64)*	*1.13 (1.00—1.29)*	Reference

months after the MI serum cholesterol and serum triglycerides were collected and use of lipid lowering drugs were registered.
Results: During the period 1994-2002 the use of lipid lowering drugs increased from 10 to 90% for men and from 29 to 91% for women. As expected, serum cholesterol levels fell markedly between 1994 and 2002, but serum triglycerides decreased as well. In 1994 mean serum cholesterol was 6.5 mmol/l for men and 6.3 mmol/l for women. In 2002 mean levels had decreased to 4.3 mmol/l for men and 5.1 mmol/l for women. However, still only 72% of the men and 53% of the women were below the recommended level of 5.0 in 2002. During the same period the means of serum triglycerides decreased from 2.6 mmol/l for men and 2.2 mmol/l for women to 1.7 mmol/l for men and 1.8 mmol/l for women, despite increasing mean body mass index among both men and women.
Conclusion: The proportion that was treated with lipid lowering drugs increased dramatically between 1994-2002. About 90% of all men and women <65 years of age hospitalised with a first myocardial infarction are now treated with lipid lowering drugs. Serum cholesterol decreased from 6.0 to 4.3 mmol/l for men and to 5.1 mmol/l for women. Serum triglycerides decreased from 2.0 to 1.7 mmol/l for men and 1.8 mmol/l for women. However, a significant proportion of patients do still not achieve optimal levels of below 5 mmol/l.

150 (652). Secondary Prevention (Date: 24th May 2005 — Free Paper Session 3.6 (Oral) — (13.30—15:00 Hours))
High Continuation Rate of Statin Treatment Among Patients with Acute Myocardial Infarction
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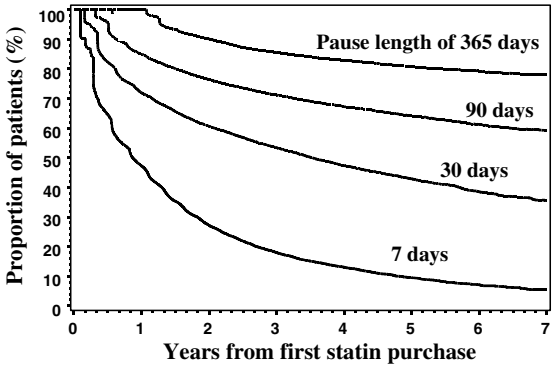
Background: Most population-based studies of statin adherence are hampered by studying selected populations only. We have studied the unselected population of all acute myocardial infarction (AMI) patients of an entire nation (Denmark).
Method: Via the national patient registry, all patients aged 30 years or older discharged alive after a first AMI from 1995-2002 were identified. Via the national prescription registry, containing all prescriptions filled in Danish pharmacies, each patient's long-term statin use was determined.
Results: A total of 58,420 patients were identified. Of these, 26,810 used statins at some point after discharge. In 1995, 10% used statins within 6 months after discharge, this increased to 56% in 2002. Between 6 months and 2 years after discharge, an average of only further 10% initiated statin, and this proportion was decreasing during the period (test for linear trend $p<0.001$).

Proportion of statin treated patients who did not have treatment pauses longer than the various lengths indicated



Among all the patients using statins, the average proportion of days covered (days with a pill available divided by days of observation) was 84%. After 4 years of observation, 50% of the patients had had no pauses longer than 30 days and 70% had had no pauses longer than 90 days. After 7 years, only 21% had had a pause of 365 days or more, including those who discontinued treatment (Fig.).
Conclusion: If AMI patients receive statin treatment, a large proportion continues treatment for many years. If patients are not receiving statin treatment within 6 months after discharge, only few additional patients will initiate treatment.

156 (663). Secondary Prevention (Date: 24th May)
Prevalence of Coronary Risk Factors and Cardiovascular Disease in Peripheral Arterial Disease
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Objective: To compare the prevalence of coronary risk factors and cardiovascular disease between patients with peripheral arterial disease and a control group.
Materials and Methods: Data from 1471 participants who went to the hospital during the week of peripheral arterial disease because of pain in the lower extremities were analyzed. Demographic data, coronary risk factors, and the presence of cardiovascular disease were registered in all patients. Information was obtained by direct questioning, and physical examination. Blood pressure, weight and characteristics of peripheral pulses were recorded. Peripheral arterial disease was defined by the presence of the following criteria: 1) the absence of dorsalis pedis or posterior tibial pulse, and 2) an ankle- arm index = 0,9.

	Control group (n: 1395)	Peripheral arterial disease (n: 76)	OR	IC 95	p
Mean Age ± DS	65.4 ± 11.1	71.4 ± 8.8			0.001
Men (%)	33.1	56.6	2.8	1.7—4.6	0.001
Diabetes (%)	10.8	39.5	14.2	7.1—28.7	0.001
Hypertensión (%)	46.4	68.4	2.4	1.5—3.8	0.001
Smoking (%)	15.5	26.3	2.2	1.2—4.1	0.01
Hyperlipidemia (%)	63.9	63.1	0.9	1.5—0.6	0.9
Myocardial Infarction (%)	4.9	6.6	1.4	0.5—4.2	0.42
Stroke (%)	2,9	10.5	10.5	2.9—38.1	0.03

Results: The mean age was 65,7 years (range 21—97). Peripheral arterial disease was diagnosed in 76 participants (5.5% of the population). The characteristics of the two groups and the statistical differences are mentioned in the following table:
Conclusions: Diabetes, hypertension and smoking were positively associated with peripheral arterial disease. These patients were older and had a higher prevalence of stroke.

180 (674). Secondary Prevention (Date: 24th May 2005 — Free Paper Session 3.6 (Oral) — (13.30—15:00 Hours))
Prevention of Cardiovascular Complication in Diabetic Patients Undergoing Non-Cardiac Surgery: Is there an Effekt of Betablokade? The DIPOM trial
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And The DIPOM Group, Copenhagen Trial Unit, Copenhagen University, Copenhagen, Denmark

Introduction: Cardiovascular complications related to non-cardiac surgery remain a serlous problem, in particular in patients with diabetes. Prevention of perioperative events has been attempted by means of life-style modification (smoking cessation and reduction in alcohol intake) and by medication. Several trials suggest that perioperative ?-blockade may reduce cardiac events. We studied the effect on perioperative cardiac risk in diabetic patients undergoing non-cardiac surgery.
Methods: The **DI**abetic **PO**stoperative **M**ortality and Morbidity Trial is an investigator-controlled, centrally randomized, placebo-controlled, blinded multicenter trial of metoprolol 100 mg daily vs placebo on mortality and cardiovascular morbidity in ?-blocker naive diabetic patients above 39 years. Metoprolol was given during hospitalization to a maximum of 7 days beginning the evening before surgery. Primary outcome was the composite of all-cause mortality, acute myocardial infarction, unstable angina, or congestive heart failure. We aimed at 1000 patients (one-year incidence of primary outcome in the placebo arm=30%, minimal relevant difference=10%, power=90%, alfa=5%).
Results : 2066 patients were eligible; 921 were randomized, 462 to metoprolol and 459 to placebo. Mean treatment duration was 4.6 vs 4.9 days. Day 1-7, 10-68% vs 5-59% received no intervention (contraindication or discharge), but heart rate (±SD) was significantly lower in the metoprolol group (75±13 vs 84±14 bpm, P<0.001). Median follow up was 18 months (range, 6 to 30). Primary outcome incidence was 99/462 (21%) in the metoprolol vs 93/459 (20%) in the placebo group (logrank test, P=0.66). Multivariate Cox regression intention-to-treat analysis showed hazard ratio 1.10 (95% CI 0.82 to 1.46, P=0.53) adjusting for age, gender, history of coronary heart disease, and malignant disease. All-cause mortality was 74/462 (16%) vs 72/459 (16%) (logrank test, P=0.88). Per protocol analyses (n=733) and analyses of secondary outcomes showed similar results. Proportion of serious adverse events incidence was 7.1% in the metoprolol vs 5.2% in the placebo group (χ^2-test, P>0.2).
Conclusion: Operative intervention remain an important time point for the emergence of cardiovascular events. Short-term perioperative metoprolol did not affect mortality, cardiac morbidity or adverse events in diabetic patients undergoing non-cardiac surgery. Results may be different with other dosage regimens and -duration, drugs, and intervention groups. At this moment, medications have not been shown to prevent perioperative cardiovascular events. Life style interventions (in elective patients) seem the only option for reduction in perioperative risk.

304 (767). Secondary Prevention (Date: 24th May 2005 — Free Paper Session 3.6 (Oral) — (13.30—15:00 Hours))
Effect of Long-Acting Nifedipine on Mortality and Cardiovascular Morbidity in Patients with Stable Angina Requiring Treatment: The Action Trial
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Objective : Calcium antagonists are widely prescribed for angina pectoris but their effect on clinical outcome is controversial. ACTION assessed the effect of the addition of 60 mg once daily nifedipine GITS (gastro-intestinal therapeutic system) — relative to placebo — on the combined rate of death, acute myocardial infarction, refractory angina, new overt heart failure, debilitating stroke, and peripheral revascularisation (primary endpoint) in patients with treated stable symptomatic angina.
Methods: We randomly assigned 3825 patients to nifedipine and 3840 to placebo. Mean follow-up was 4.9 years.
Results: Mean age was 63.5 years (SD 9.3). 80% were male. 51% had prior myocardial infarction and 33% had angiographic coronary disease without infarction. The remainder had a positive exercise or radionuclide test. 93% had anginal attacks and 80% were on a beta-blocker. Relative to placebo, nifedipine GITS lowered blood pressure by 6/3 mm Hg (p<0.0001). 310 nifedipine and 291 placebo patients died (1.64 and 1.53 per 100 patient-years respectively, hazard ratio 1.07, 95% CI 0.91 — 1.25, p=0·41). Primary endpoint rates were 4.60 and 4.75 per 100 patient-years respectively (hazard ratio 0.97, 95% CI 0.88 — 1.07, p=0.54). Rates of death, any cardiovascular event or procedure were 9.32 and 10.50 per 100 patient-years respectively (hazard ratio 0.89, 95% CI 0.83 — 0.95, p=0·0012). The difference was mainly due to significant reductions in new overt heart failure, the need for coronary angiography and interventions in patients assigned nifedipine. Nifedipine had no effect on the rate of myocardial infarction but increased the need for peripheral revascularisation (n.s.). In patients with elevated blood pressure at baseline, nifedipine significantly reduced the primary endpoint rate by 13% (subgroup analysis).
Conclusion: The addition of nifedipine GITS to conventional treatment for angina is safe, increases major cardiovascular event-free survival when blood pressure is elevated, and reduces the need for coronary angiography and interventions.

189 (681). Tobacco (Date: 22nd May 2005 — Free Paper Session 1.7 (Oral) — (13.30—15:00 Hours))
Cigarette Smoking and Cause of Death after a Heart Attack — A 35 Year Follow-Up of Post-Coronary Survivors
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Objectives: To examine long-term cause-specific mortality in survivors of a heart attack.
Materials: 555 males, under 60 years, who had a first myocardial infarction/ACI between 1965 and 1975 were followed annually up to 2003.
Results: Initially 73% were cigarette smokers, 18% were ex-smokers and 9% had never smoked. By two years 61% of the smokers had given up.
There were 492 deaths with a loss-to-follow-up rate of 2.9%. Total mortality was 10% (95% CI: 7%-12%) at 2 years, 39% (35%-43%), at 10 years, 70% (67%-74%) at 20 years 95% (92%-98%) at 35 years.

Overall the percentage of deaths due to vascular disease decreased over time and the percentage due to cancers increased ($p<0.01$). The table shows that the increase in cancers was confined to heavy smokers (those whose lifetime cigarette consumption prior to their heart attack was in the top 2/3rds of the distribution). Further analysis showed that the increase was particularly apparent in those who continued to smoke.

	Never and Non-Heavy Smokers		Heavy Smokers	
Period of Follow-up	% Deaths due to Vascular Disease	% Deaths due to Cancer	% Deaths due to Vascular Disease	% Deaths due to Cancer
0 — 2 yrs	96%	4%	96%	0%
2 — 10 yrs	82%	9%	86%	10%
10 — 20 yrs	88%	9%	72%	19%
20 — 35 yrs	69%	5%	47%	27%
Significance	P = 0.0026		P < 0.0001	

Conclusions: These post-coronary patients, conservatively managed with concentration on risk factor intervention, provide a unique insight into the long-term natural history of coronary heart disease in the pre-reperfusion and pre-coronary bypass era. Vascular disease became a less common cause of death the longer they survived, suggesting a waning of the influence of the initial acute event. The proportion of deaths due to cancer rose with time in heavy smokers but remained more-or-less constant in never and light smokers. Even among patients at high risk of vascular death the strong and persistent effect of smoking on cancer is apparent.

355 (797). Tobacco (Date: 22nd May 2005 — Free Paper Session 1.7 (Oral) — (13.30—15:00 Hours))

Prevalence of Tobacco Consuption in the Adult Population of Mozambique

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Background: Nationally representative and reliable prevalence data on tobacco consumption in the Sub-Saharan Africa are rare.
Objective: To estimate the prevalence of tobacco consumption in the adult population of Mozambique.
Design: A cross sectional, nationally representative population based household survey using the STEPS approach methodology (WHO) included in an Health and Demographic Survey was conducted in the last trimester of 2003. 12 902 individuals, (60.9% female) divided in four 10 year age-groups between 25 and 64 years old were inquired about there ever and actual tobacco use and main type of tobacco consumption — manufactured or hand made cigarettes or smokeless tobacco.
Results: The overall prevalence of ever-tobacco consumers is 28.5% and the prevalence of current consumers is 24.3% (38.8% in men and 14.9% in women). Men consume mainly manufactured cigarettes (45.2%) and hand made cigarettes (47.2%) while women use predominantly smokeless tobacco (57.4%). There are significant differences among prevalence and type of consumption in the different provinces of the country. Consumption was found significantly more prevalent in the rural than in the urban area for both sexes (43.3% versus 29.9% for men and 18.6% versus 8.6% for women respectively) and more prevalent in the lower educational level then in more educated people.
Conclusions: The results of this study show a very high prevalence of tobacco consumption in the adult Mozambican population. It also allows defining priorities in the design of future tobacco control interventions.

360 (802). Tobacco (Date: 22nd May 2005 — Free Paper Session 1.7 (Oral) — (13.30—15:00 Hours))

Prevalence and Correlates of Tobacco Use Among Undergraduate Medical Students in Orissa State, India

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Objective: To find out the prevalence and correlates of tobacco use among undergraduate medical students in Orissa.
Methods: Survey: Cross sectional survey with pre-tested and anonymous self-administered questionnaire.
Setting: At 3 (all) medical colleges in Orissa, India.
Participants: 1189 out of 1615 undergraduate (M=815, F=374) medical students of Orissa.
Findings: Prevalence of Ever tobacco use was 26.8%, higher amongst males (36.2%) than females (6.2%). Prevalence of current tobacco use was 8.7 %,(M=12.3%, F=0.8%). The mean age of initiation was 17 years. Strikingly, 35% of ever users initiated after coming to medical college. A multivariate analysis discerned the following variables to be significantly ($p<=0.05$) associated with current tobacco use as reported by the medical students. 1) Male 2) Family history of tobacco use, 3) Higher expenditure on self 4) Perception of tobacco to be less harmful to oneself. Tobacco's role in heart disease was not known to 25.7%, impotency to 55.6% and urinary bladder cancer to 61% of students. The Indian government's ban on smoking in public places was not known to 37%, 88.4% had not heard about the Framework Convention on Tobacco Control.
Conclusion: Disturbingly, 35% of the ever-tobacco users initiated use after entering medical college which was beyond the high-risk adolescence age. In India, anti-tobacco interventions are rarely initiated at medical colleges as it is assumed that the imparted knowledge is adequate. Our study however indicates otherwise. Appropriate informed anti-tobacco interventions encompassing both knowledge and behavioral aspects are needed.

369 (797). Tobacco (Date: 22nd May 2005 — Free Paper Session 1.7 (Oral) — (13.30—15:00 Hours))

The Production of Tobacco Results in Higher Prevalence Rates and Different Patterns of Consumption

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Background: Tobacco production is much more rentable than agriculture activities in Africa, creating a big pressure for the increase in their areas of production.
Objective: Evaluate if the production of tobacco influences the prevalence and the pattern of consumption.
Design: A cross sectional, nationally representative population based household survey using the STEPS approach methodology (WHO) was conducted in the last trimester of 2003. 12 902 indi-

	Proportion of current consumers (95%CI)			
	Females		Males	
	Non-tobacco producers	Tobacco producers	Non-tobacco producers	Tobacco producers
All	7.9 (6.3—9.5)	23.6 (21.2—25.9)	29.4 (26.8—32.0)	43.6 (41.2—46.0)
Type of tobacco				
Manufactured cigarrets	18.1 (11.4—24.9)	14.2 (9.7—18.7)	68.1 (62.0—74.3)	37.1 (32.4—41.9)
Hand made cigarettes	1.7 (0-3.9)	32.9 (27.8—38.0)	25.6 (20.5—30.7)	52.0 (47.4—56.6)
Smoke-less tobacco	79.9 (73.1—86.6)	52.0 (46.1—57.8)	4.4 (1.3—7.6)	10.5 (8.0—13.0)

viduals, (60.9% female) divided in four 10 year age-groups between 25 and 64 years old were inquired about their ever and actual tobacco use and main type of tobacco consumption — manufactured or hand made cigarettes or smokeless tobacco. We compared the prevalence of tobacco consumption and its pattern in the population of 6 Provinces where tobacco is regularly produced for several years with the prevalence and pattern of consumption in the population of the 5 other Provinces where tobacco has never been produced. Prevalence estimates with 95% confidence intervals were computed considering the sampling weights and adjusting for strata and clustering at primary sampling unit level using ''svy'' command in STATA 7.0.

Results: The overall prevalence of ever-tobacco consumers is 28.5% and the prevalence of current consumers is 24.3% (38.8% in men and 14.9% in women). Prevalence of ever consumers in the population of tobacco producers is 26.3(24.0-28.6) and 49.0(46.6-51.3) for women and men respectively while it is 9.9(8.0-11.7) and 39.2(36.6-41.9) in women and men of the non-tobacco producers population. The table at the bottom shows that in men, manufactured cigarettes are the main pattern of consumption in the non-tobacco producers 68.1(62.0-74.3) while hand-made cigarettes and smoke-less tobacco are consumed mainly in the population of tobacco producers 52.0(47.4-56.6) and 10.5(8.0-13.0) respectively. In women there is also a significantly difference on the consumption of hand-made cigarettes which is much more common in the tobacco producers population.

Conclusions : Compared with the areas where tobacco has never been produced, the population of the areas where it is usually produced has a significantly greater prevalence of consumption and a different pattern using more the direct derivates of tobacco.

380 (834). Tobacco (Date: 22nd May 2005 — Free Paper Session 1.7 (Oral) — (13.30—15:00 Hours))

Cuban Women: Smoking and Related Diseases

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Summary: Between January of 1997 and June of 1999, 58 082 women about 35 year-old and more were interviewed. They were coming from 5 counties of the country. Objectives: To know the magnitude of the problem and the distribution of the smoking habit, as well as to determine the attributable mortality to the smoking habit.

Prevalence, distribution, and related diseases:

Results: The prevalence of those that ever smoked was 34.1%, and the prevalence of current smokers was 25.6%. The mean of age of beginning in this habit was 16.0 years, with an SD of 5.3. 56.7% women began it before the 18 years and the number of cigarettes smoked per day was about 13.2.

Related diseases with the smoking habit

Conclusion: The habit of smoking is very common among the Cuban women. We demonstrated again that certain chronic illnesses are closely related with this harmful habit.

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412 (860). Tobacco (Date: 22nd May 2005 — Free Paper Session 1.7 (Oral) — (13.30—15:00 Hours))

Knowledge, Attitude and Practice of Iranian Physical about Smoking

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Introduction: Today smoking is one of the main risk factors causes mortality & morbidity and premature disabilities especially among developing countries. As physicians have been known as the health model for their patients and patients refer to physicians are ready to accept their advices, we can say that physicians can have as important role in decreasing the prevalence of smoking and preventing from it in the community. Then evaluating the knowledge, attitude and practice of this social group toward smoking can be helpful in removing the present health shortcomings and in determining policies and strategies of health policy makers.

Disease	Odds ratio smoker/ non smoker	Variance	Chi^2	Probability
— OCPD *	2.71	2.43—3.02	367.83	0.00000...
— Peptic Ulcer	1.71	1.57—1.87	148.89	0.00000...
— Chronic Kidneys Disease	1.63	1.38—1.92	34.87	0.00000...
— Myocardial Infarction	1.40	1.22—1.62	22.16	0.00000...
— Bronchial Asthma	1.21	1.15—1.29	44.17	0.00000...

Trend of main causes of hospitalizations in the Cardiology Unit Tunisia, 1992, 2003

* OCPD: Obstructive Chronic Pulmonary Disease.

Method: 5134 physician employed in governmental and private sections (20 provinces) were questioned by 45 item questionnaires prepared by WHO and with the help of trained questionnaires. Quta sampling was well. Required samples from each province was evaluated according to the total number of physicians working in provinces and based on the list and address of them in the health deputy of each province and medical organization.
Results: Results show that 7.34% (9.7% of male physicians and 0.8% of female physicians) are cigarette smokers. The mean of per day consumed cigarette was 6.6 and the age mean of attempting to cigarette smoke was 23.041±5 and 61.6% physicians declared that they are ready to offer consultative services.
The knowledge level of smoker physicians toward the disadvantages of cigarette and also their mean scores in this regard was lower than nonsmoker ones. Only 9% of physicians had been trained about smoking cessation during their education periods and most of them proposed the necessity of passing such training courses.
Discussion: Although the prevalence of smoking among physicians is lower than other people but it seems necessary that health policy makers consider applying suitable and effective methods to offer quitting services to smoker physicians and considering training programs about the way of presenting quit services in the content of theoretical and practical materials of physicians, offering applicable strategies to use potentials of physicians about smoking prevention and quit smoking services for referees.
Keywords: KAP of physicians, Doctors, Smoking, Pattern.

15 (525). Posters (Date: 22nd May 2005)
Tobacco Consumption in Choolchildren. Study of its Psychosocial Determinants, Metropolitan Region, Chile, 1993—1996
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Tobacco consumption (TC) has been increased in the Chilean adult population, mainly in women, since the middle 80́s. This, has affected children population (CHP) arising the prevalence of tobacco consumption among them. The purpose of this contribution was to explain TC in CHP regarding its psychosocial determinants. The study population, in 1993, was a non-randomized sample of 3.491 5°-8° grade CHP (mean age +/- SD 11,3 y.o.+/-1,2). A follow up of CHP was assessed again in 1996 (mean age +/- SD 13,5 y.o. +/-0,8). A precodified questionnaire was applied to all of them. Variables were distributed after factor analysis according to CDC criteria, including: psychological well-being, self-esteem, attitudes, expectations, norms and personal factors. A predictive model for starting TC was adapted from the one used for North Karelia Youth Program's investigators. Logic regression model (LRM) to explain TC using psychosocial risk factors (PSRF) as explanatory variables was designated. Results showed that prevalence (P) of TC in 1993, was: 2.0% and 0.9% in boys and girls respectively. Prevalence, in 1996, was 12.0% and 9.9% in boys and girls respectively. Smokers children had more flexible parent's norms regarding TC, worst academic performance, worst self-esteem and more depressive symptoms than their non-smokers peers. LRM showed association between TC in CHP and TC in their friends, brothers and sisters, mothers and fathers. These results confirm that P of TC increases with age and that there is a relationship between TC and PSRF. For this reason is mandatory implementing health promotion programs in schools, addressed to intervene these PSRF.

18 (538). Posters (Date: 23rd May 2005)
Increased Erythropoiesis and Subclinical Inflammation as Part of the Metabolic Syndrome
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Objective: To determine the relationship between erythropoiesis, subclinical inflammation and the metabolic syndrome.
Methods: We have examined this association in individuals with the metabolic syndrome who in addition to insulin resistance harbor a chronic low grade inflammation. This examination is relevant due to the fact that chronic inflammation might have a suppressive effect on erythropoiesis. Included were 280 and 554 non-smoking women and men at a respective mean+SD age of 46.4±9.3 and 44.0±11.0 years.
Results: A significant correlation was noted between the numbers of the components of the metabolic syndrome and the inflammatory syndrome and the inflammatory biomarkers including the white blood cell count high sensitivity C-reactive protein, fibrinogen concentrations and the erythrocyte sedimentation rate. In addition, a significant ($p=0.008$) correlation ($r=0.157$) was noted between the number of components of the metabolic syndrome and the number of red blood cells in the peripheral blood in women. The same was true for men ($r=0.192$ $p<0.0005$).
Conclusions: We conclude that the multiplicity of components of the metabolic syndrome is associated with erythropoiesis despite of the presence of concomitant low grade inflammation. The lack of anemia in these individuals might give an erroneous impression of a general ''good'' health. We probably face a situation in which the erythropoietic forces in these individuals prevail the erythrosuppressive ones that might be related to the presence of low grade inflammation. It remains to be seen whether this enhanced erythropoiesis might have significance in terms of viscosity, especially in the presence of hyperfibrinogenemia.

20 (538). Posters (Date: 22nd May 2005)
Association of the 10-Year Framingham Coronary Disease Risk Score with Enhanced Erythrocyte Aggregation in Apparently Healthy Men. Potential Pathophysiological Relevance
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Objective: To determine the correlation between the 10-year Framingham Coronary Heart Disease Risk Score (FCRS) and the degree of erythrocyte aggregation in the peripheral blood in men.

Methods: A cohort of 1115 of apparently healthy men and those with atherothrombotic risk factors donated blood for the determination of various acute phase response biomarkers, including the white blood cell count (WBCC), erythrocyte sedimentation rate (ESR), fibrinogen as well as high sensitivity C-reactive protein (hs-CRP) concentrations. The degree of erythrocyte aggregation in the peripheral blood was determined by using a slide test and image analysis.
Results: The mean±SD age of the study population was 49.8±10.5 years and the a mean±SD body mass index (BMI) was 27.3±3.5 kg/m^2. The BMI adjusted correlation between the degree of erythrocyte aggregation and the 10-year calculated FCRS was higher than that noted for hs-CRP, the respective coefficients being 0.194 ($p<0.0005$) and 0.136 ($p<0.0005$). In a linear regression model we could show that while hs-CRP was mainly influenced by BMI, the degree of erythrocyte aggregation was mainly influenced by the calculated FCRS.
Conclusions: The calculated 10-year calculated FCRS is associated with enhanced erythrocyte aggregation in the peripheral blood. In addition to a potential diagnostic advantage of the erythrocyte aggregation biomarker, the presence of enhanced erythrocyte aggregation might be detrimental in terms of capillary slow flow, tissue deoxygenation and a reduced vasodilatatory response.

21 (538). Posters (Date: 24th May 2005)
Characteristics of Apparently Healthy Individuals with Very Low C-Reactive Protein Concentrations. Are They Really Healthy?
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Objective: High concentrations of high sensitivity C-reactive protein (hs-CRP) are used to single-out individuals at risk for future cardiovascular events. The objective of this study was to evaluate the hypothesis that apparently healthy individuals with very low hs-CRP concentrations might present an improved general health profile.
Methods: We have presently analyzed data of a total of 2100 individuals, following exclusion of recent infection/inflammation by using a detailed questionnaire, who underwent a routine health screening program, 1414 men and 686 women at a respective mean+S.D. age of 49.4±13.2 years. They were divided into three groups of risk categories according to whether they had hs-CRP concentrations of =1 mg/L, 1-3 and >3-10 mg/L (7). In addition, the first group was further divided into individuals who had very low (=0.16 mg/L) hs-CRP concentrations.
Results: Fifty-one (2.4%) individuals out of the above mentioned cohort presented hs-CRP concentrations of $\leq$0.16 mg/L. They were found to be significantly younger and to have a clearly reduced body mass index, had an improved lipid profile and an attenuated acute phase response in terms of lower erythrocyte sedimentation rate, fibrinogen concentration as well as white blood cell count. In addition, these individuals had practically no atherothrombotic risk factors except from smoking habits that were as frequent as those of individuals with a higher hs-CRP concentration.
Conclusions: The presence of very low hs-CRP concentrations in apparently healthy individuals is associated with an improved general health profile except from smoking habits that were as frequent as in individuals with a higher concentration of hs-CRP. The question of whether these individuals have a particular genetic background of being inflammation insensitive remains to be answered. We suggest that studies of hs-CRP concentrations in apparently healthy individuals should consider this particular group, the follow-up of which might yield valuable information.

29 (539). Posters (Date: 22nd May 2005)
Body Size and Diet in Primary School Children in Northern Ireland
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Abstract: Paediatric obesity is an increasing problem in Europe and children who are obese are more likely to have higher levels of cardiovascular risk factors. Northern Ireland has one of the highest death rates from cardiovascular disease (CVD) in the world. We investigated the relationship between body mass index (BMI) and food consumption in 1911 children aged 6 to 8 years in Northern Ireland. We measured height and weight and calculated a dietary index based on questions from a food frequency questionnaire. A high score for the dietary index indicated healthier food choices than those represented by a low score. This questionnaire also contained details of parental smoking, birth rank, breastfeeding, socio-economic status and whether children came from a single parent family.
We found that 14.5% of girls and 8.7% of boys were overweight and 4.7% of girls and 2.4% of boys were obese using the international standards recently proposed by the International Obesity Task Force. There was a significant graded relationship between parental socioeconomic status and dietary index score in both boys ($p<0.001$) and girls ($p<0.001$). In unadjusted linear regression analysis, a 0.039 SD increase in the dietary index score was associated with a 1 kg/m^2increase in BMI in boys ($p=0.02$) and a 0.030 SD increase was associated with a 1 kg/m^2increase in BMI in girls ($p=0.03$). Adjustment for sex, parental smoking, birthrank, breastfeeding, manual/non-manual work and single family status modified these results marginally. Girls who were overweight had a higher dietary index score (0.24) than those of normal weight (0.06) ($p=0.03$). This relationship was non-significant in boys. In conclusion, both boys and girls had high levels of overweight and obesity. There was an inverse relationship between healthy food choices reported by parents and body mass index which may indicate that parents of heavier, overweight children had a higher level of awareness of healthy food options.

31 (550). Posters (Date: 23rd May 2005)
Frequency of Cardiovascular Disease Risk Factors and Medication Use in Ethnic Chinese
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Background: Major risk factors for cardiovascular disease (CVD) include cigarette smoking, diabetes, hypertension and hyperlipidemia. Ethnic Chinese are the largest group of Asian immigrants in the United States (USA), with CVD listed as the leading cause of mortality (29.4%). Approximately 30% of the population in the San Francisco Bay Area (SFBA) is ethnic Chinese.
Objective: To describe the frequency of CVD risk factors and CVD medication use in ethnic Chinese adults.

Methods: Cross-sectional study. Ethnic Chinese adults > 45 years old, living in the SFBA with at least 1 major risk factor for CVD participated.
Results: A total of 39 subjects, on average 66 (± 8.3) years old, married (85%), Cantonese-speaking (97%), immigrant women (69%) participated. The majority reported ≤ 12 years education (87%) and an income < $35,000 US per year (66%). High blood pressure (mean BP = 150/86) was found in 92% of subjects, however only 54% were taking any antihypertensives (Table 1). Hypercholesteremia was reported in 49% of the subjects, though only 28% were taking statins. Approximately 20% were diabetics, and only one subject was a current smoker. Few subjects used Chinese medicine (n=4) for maintaining their health.

Table 1: cardiovascular disease risk factors and Medication use, n=39

	%	n
CVD Risk Factors		
Hypertension	92.3	36
Hypercholesteremia	48.7	19
Diabetic	20.5	8
Current Smoker	2.6	1
CVD Medication Use		
Antihypertensives	53.8	21
Statins	28.2	11
Oral Hypoglycemics	17.9	7
Aspirin	33.3	13
Chinese Medicine	10.3	4

CVD=Cardiovascular Disease

Conclusions: Relative to the median income and education level in the SFBA, subjects were poor with limited education. Hypertension was the most prevalent CVD risk factor. Subjects were either unwilling to take medications to lower CVD risk factors, unaware of personal CVD risk or were under-treated. CVD risk factor reduction utilizing Cantonese-speaking health care providers is recommended.

38 (554). Posters (Date: 23rd May 2005)
Assessing Obesity and Overweight in Pakistani Population
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Aims: To estimate the prevalence of obesity and overweight among adults in a high mountain rural population of Pakistan, and to determine the correlates of excess body weight.
Methods: A random sample of 4203 adults (aged 18 years and over) was selected by stratified random sampling from 16 villages in north Pakistan. Trained medical students measured height, weight and blood pressure. Trained interviewers obtained information from participants on sociodemographic variables, use of snuff, daily cigarette consumption, hypertension, and family history of hypertension. Body mass index (BMI) calculated as kg/$m^2$was used to define overweight (BMI≥ 25 kg/m^2) and obesity (BMI≥30 kg/m^2).
Results: Using weight and height data available for 1,391 men and 2,754 women, mean BMI was 22.4 for men, and 22.6 for women. The age-adjusted prevalence of BMI >=25 (overweight/obesity) was 13.5% for men and 14.1% for women. Overweight/obesity was more likely to have hypertension, a family history of hypertension, government employees, a monthly household income falling in the upper 3rd quartile. Users of smokeless tobacco (snuff) were less likely to be overweight/obese.
Conclusion: The prevalence of risk factors for non-communicable diseases (NCDs) in Pakistan is expected to increase as further epidemiologic, nutritional and demographic changes occur. The assessment of excess body weight, and patterns and determinants of other risk factors for NCDs is important to provide useful guidelines in the planning of interventions to counter a growing problem.

39 (566). Posters (Date: 22nd May 2005)
Anti-tumor Necrosis Factor-α Antibodies Improve Myocardial Recovery Following Ischemia and Reperfusion and Prevent Myocardial Tissue Damage
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[2]Institute of Pathology, Tel-Aviv Medical Sourasky Center and the Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel

Objective: This study assesses the importance of locally-released/paracrine myocardial tumor necrosis factor-a (TNF) in the evolution of post-ischemic myocardial dysfunction.
Background: TNF is implicated as a systemic mediator in the development of myocardial ischemia-reperfusion injury by promoting leukocyte myocardial infiltration, and has been shown to originate from non-cardiac peripheral mononuclear cells. We have documented the release of TNF from the ischemic-reperfused myocardium in a blood-free environment.
Methods: Isolated rat hearts undergoing one hour of global cardioplegic ischemia and 30 minutes of reperfusion were investigated using the modified Langendorff model. Hearts were randomly divided into two subgroups: The control group (group A) and isolated hearts receiving monoclonal anti-TNF antibodies in cardioplegia (group B). The tissue sections of the same hearts were used for histologic study.
Results: Significant amounts of TNF were detected in group A upon the first minute of reperfusion (870±212 pmol/ml). In group B, however, TNF was below detectable levels. In group A postischemic myocardial damage was observes (edema, loss of cardiac myocytes nuclei and disintegration of muscle fibers). In group B myocardial structure was preserved and post-ischemic left-ventricular peak-systolic pressures, dP/dt max, pressure-time integral, coronary flow improved (ANOVA $p<0.0001$ for all parameters).
Conclusions: Anti-TNF neutralizes local TNF release from cardiac myocytes following ischemia, and improves myocardial recovery during reperfusion, indicating that post-ischemic paracrine TNF release plays an active role in myocardial dysfunction.

47 (551). Posters (Date: 22nd May 2005)
History of Tobaco Smoking - How Conscious the Doctors are?
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Context: Tobacco smoking is a known preventive risk factor for various illness.Hospital is the best place to educate patients about the hazards and consequences of tobacco smoking. Hence this study was undertaken to find out what have been done.
Aim: To find out whether the treating doctor has elicited history of tobacco smoking among hospitalized patients and to elicit whether, doctor has informed them about the hazards of tobacco smoking and dissuaded them to give up the habit.

Setting: A tertiary care multispeciality teaching hospital affiliated to Madurai Medical College, Madurai, Tamilnadu, India.
Material & Method: A prospective study was designed after Institutional Ethical clearance, with reference to the above purpose. Medical case records of 326 male patients(Females do not smoke in this part of the country.) hospitalized in Medicine and Cardiology wards were re-evaluated, to find out the attitude of doctors towards patient's tobacco smoking habit and noted down their diseases status. An analysis was made to find out the variation.
Findings: Out of 326 cases, doctors elicited history of tobacco smoking in 208 patients and in only 40 patients, the details(Pack year, type of tobacco, others) was made available. Only 6 of the smokers were told/informed about the hazards of tobacco smoking. Out of the 110 patients not asked for tobacco smoking,50 were smokers and that too they were smoker for long period(more than 15 years).
Conclusion : Overall smoking is prevalent among 81% of hospitalized male population. Significant number of them were young & smoking for over 15 years(116 number). (31.8%) of the smokers had one or other vascular disease related to smoking habit. Effort should be made to re-orient treating doctors to elicit and educate the community on adverse effects of smoking.

55 (581). Posters (Date: 22nd May 2005)
Results of Coronary Prevention Study in Republika Srpska (ROSCOPS I&II) B&H
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Summary: Cardiovascular disease are the leadery couses of death in Republic of Srpska - Bosnia and Herzegovina. Within the framework of the National Program for Cardiovascular Disease Prevention, we were following up risk factors for CHD and we found that all these factors were highly present.
Aim: The aims of study were (i) to determine whether the mayor risk factors for coronary heart disease are recorded in patients medical records;(ii) to analise medication at interview.
Methods: The survey was conducted in selected geographic areas and medical centres in fifth towns in Republika Srpska-Bosnia and Herzegovina. Consecutive patietns (<70years) were identified retrospectively with the following diagnoses: coronary artery by-pass grafting,percutaneus transluminal coronary angioplasty,acute myocardial infarction and acute myocardial ischaemia without infarction.Date collection was based on a retrospective review of hospital records and prospective interview and examination of the patients.
Results: In our study we analyse 430 patient at 2001(ROSCOPS I), aged between 40 and 70, 30% women and 70% men. Foreteen percent of patients smoked cigaretes, 26% were overweight (BMI $\geq$ 30kg/m^2), 74% had raised blood pressure (systolic BP$\geq$ 140 and/or diastolic BP $\geq$ 90mmHg), 28% had raised total plasma cholesterol(total cholesterol $\geq$ 5,5mmol/l) and 24% were diabetic. Two years later we analysed 430 the other patients(ROSCOPS II),aged between 40 and 70%,30% women and 70% men.35% patients smoked cigaretes,28% were overweight,67% had raised blood pressure,32% had raised plasma cholesterol and 25% were diabetic.
Conclusion: our study demonstrated high prevalence of modificable risk factors in coronary heart disease.It good potential for secundary prevention our population in future.

63 (591). Posters (Date: 24th May 2005)
Analysis of the Participation of the Argentine Population in the 'Quit & Win 2004'
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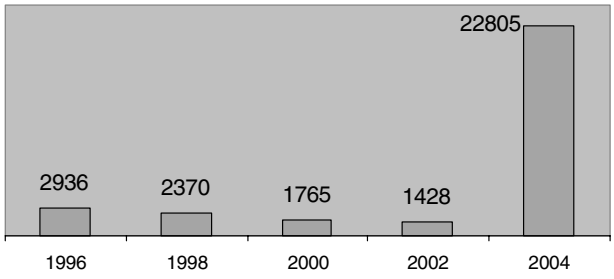
Objectives: The main goal of this project is to describe the characteristics of the population that participated in the ''International Quit & Win Contest'' and to determine the possible reasons of the increase of participants in year 2004, as compared to the participation in previous campaigns.
Methods: The sample included 22,805 (12,903 men and 9,902 women) aged 18-88 participants of the Quit and Win 2004. The data were obtained through a questionnaire filled in and sent through the Quit and Win website or by regular mail before May 2nd, 2004.
Characteristics considered in this analysis included place of origin and way of registration.
Results: Number of participants in the previous contests 2,939 participants in 1996, 2,370 in 1998, 1,765 in 2000, and 1,428 in 2002. In the 2004 contest we had 22,805 participants. The different ways of inscription were internet 77% (n=17577), stands 18% (n=4200), others 5% (1028). The residence of the participants was Province of Buenos Aires 40% (n=9181), Buenos Aires City 28% (n=6405), Province of Santa Fe 10% (n=2366), Province of Córdoba 5% (n=1059), another provinces 18% (n=3794).

Participants per year



Conclusion: The interest the government took in the contest, the increase in the national broadcasting of the event by mass media, and the use of internet as a means of registration were effective in recruiting participants. There was a higher participation among residents of the Province of Buenos Aires and less participation from people in other towns.

64 (591). Posters (Date: 24th May 2005)
Baseline Results of DEMOBAL, the National Demonstration Project in Balcarce, Province of Buenos Aires, Argentina.
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[4]University of Kuopio, Finland

Objective: The aim of the study was to show the risk factors of cardiovascular diseases of an Argentinean population in DEMOBAL, the National Demonstration Project in Balcarce.
Methods: The study population consisted of a random sample of 1,036 men and 1,141 women aged 15-65. The data were obtained through a self-administered questionnaire on nutrition and lifestyle habits. These questions were similar to those used in the Countrywide Integrated Noncommunicable Disease Intervention Programme, World Health Organization (CINDI-WHO) and the FINBALT study (Health Monitor, National Public Health Institute, Finland). The food consumption was classified in low, moderate and high, high means that daily intake. The relationship between the variables, mainly prevalence proportions, was tested by the chi square test.
Results: As regards nutrition, 32% (n=364) of women and 42% (n=432) of men showed a high consumption of eggs (p<0.001); 53% (n=608) of women and 49% (n=506) of men have a high consumption of whole milk (p=0.036); 7% (n=78) of women and 5% (n=75) of men have a low salt consumption (p<0.001); 33% (n=373) of women and 32% (n=327) of men use animal fat for cooking (p=0.574); 75% (n=853) of women and 83% (n=860) of men frequently consume red meats (p<0,001); 45% (n=513) of women and 50% (n=522) of men show a high consumption of sodas. Regarding tobacco and alcohol consumption, 26% (n=292) of women and 37% (n=382) of men smoke (p<0.001); 37% (n=423) of women and 65% (n=669) of men have a moderate alcohol consumption (p<0.001). High physical activity at work is present in 19% (n=58) of women and in 45% (n=305) of men (p<0,001); 36% (n=402) of women and 44% (n=407) of men have a low level of commuting physical activity (p<0.001); 70% (n=788) of women and 65% (n=675) of men have a low level of physical activity at leisure (p=0.152).
Conclusion: The results of the baseline data of the DEMOBAL project clearly showed that urgent interventions are needed to promote healthier lifestyle in order to prevent cardiovascular diseases in the Argentinean population.

70 (598). Posters (Date: 24th May 2005)
Need for Cost-effective Screening of Risk Factors for Coronary Artery Disease
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South Asians have the highest incidence (4 to 5 fold higher) of coronary artery disease (CAD) compared to any other ethnic group in the world. To create awareness, develop educational and preventive programs a society (South Asian Society on Atherosclerosis and Thrombosis, SASAT) was started at the University of Minnesota in 1993. Since then, SASAT has organized conference on Atherosclerosis and Thrombosis in India every other year. We at the University of Minnesota are developing collaborative multi-center studies to evaluate the underlying biochemical, genetic and environmental determinants for observed excessive occurrence of this disease in the Indian population. Limited studies done in Chennai, India and other centers have demonstrated the need for establishing newer guidelines for common CAD risk factors for the Indian subjects. Methods are available for the detection of vascular dysfunction even before the classical risk factors for CAD develops. Further more, on going collaborative studies with Chennai, India, suggest that the distribution of fat in this population is significantly different from that of Caucasians, African Americans and Hispanics. We strongly believe that the early detection of the CAD risk and effective management of the risk factors is very cost effective. Further research is needed to explore the genetic and environmental etiology of intra abdominal fat storage.

71 (599). Posters (Date: 23rd May 2005)
The Attempt of Prognosis of Development Metabolic Syndrome X
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Background: Metabolic Syndrome X (MSX) consist many associated disturbances. These abnormalities include central obesity, insulin resistance with hyperinsulinemia, glucose intolerance/diabetes mellitus t. II, hypertension, increased plasma cholesterol levels. It good knows the high relationship between MSX and coronary heart disease. Development a cluster of cardiovascular disease risk factors comprising the MSX require sustained time. Clinical aviation medicine tends to establish such diagnostic procedures that could allow recognizing each trouble in pilots before they could be a danger under flight conditions, but it is not possible to estimate (in respect of economic) insulin resistance in a group of all pilots. Whit assumption that we undertook attempts of prediction development the full-symptomatic MSX on basis analysis the time of duration his cluster abnormalities.
Material and methods: We analyzed the medical documentation of pilots kept in the Polish Air Force Institute of Aviation Medicine. We singled out a group of 28 men; aged 30-59 mean 43.5 years, which has 4 principal elements of MSX. We analyzed: body mass index (BMI), total cholesterol and glucose concentrations, and blood pressure values. Because the value of parameters was unstable in following years, we calculated the mean values of all measured parameters. The time, of manifestation consecutives components of MSX was calculated. The results were evaluated statistically.
Results: The order of development-analyzed components of MSX in 82.1% of group was: overweight, hypercholesterolemia, glucose intolerance, and hypertension. The average time of duration an individual component was similar (± 7 years). The time to manifestation third of components was much longer (±10.5 years), however four components of MSX occurred after ± 16 years. There were not statistically significance correlations between the time of development individuals and four principals' components MSX.
Conclusion : Is not possible to prognoses the development all discussed components of MSX on basis the time of duration/influence each of them.
Text: The diagnosis of paroxysmal cardiac arrhythmias (palpitations) in pilots is based most frequently on ECG monitoring by Holter method and during exercise test on a treadmill. In those pilots in whom non-invasive tests fail to find what the type of paroxysmal arrhythmia is, electrophysiological heart examinations are performed by means of a transoesophageal (TAP) and/or endocavitary (EAP) atrial pacing. Atrial fibrillation (AF) can develop without any visible cause and can be provoked by atrial pacing also in clinically healthy persons. The aim of the study was to give answer to questions: When AF provoked by stimulation should be regarded as diagnostically significant and when as a variant of acceptable norm? What is the usefulness for clinical purposes and for aviation-medical expertise of provocation attempts using, among others, esophageal electrode? Material and methods: From 228 of candidates and fighter pilots (were examined purposes due to suspected presence of additional atrioventricular conduction path)were chosen a group of 19 men aged 18-30 mean 21 years in whom the initially

suspected ventricular pre-excitation was not confirmed, while AF was provoked. The electrophysiological examinations were carried out using TAP or CAP according to medical standards. Results: In all subjects AF lasted not more than several seconds and regressed spontaneously. Conclusions: 1. Atrial fibrillation provoked by electric stimulation in healthy people regresses spontaneously within several to over a dozen seconds. Longer lasting atrial fibrillation is an abnormal and clinically significant phenomenon. 2. Atrial fibrillation cannot be provoked in healthy persons by single premature stimulus produced during sinus rhythm of normal rate. 3. It is far more difficult to provoke atrial fibrillation by transoesophageal left atrial pacing than by endocavitary right atrial pacing. 4. The results of the study can be useful for clinical practice and should be taken into account in aviation-medical expertise.

80 (608). Posters (Date: 24th May 2005)
Bulgarian General Practitioners' Knowledge about the Target Levels of Serum Lipids in Patients with Coronary Heart Disease and Postmyocardial Infarction
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Purpose: The aim of this study was to assess the Bulgarian general practitioners (GPs) awareness of the target levels (TLs) of the serum lipids in patients (pts) with coronary artery disease (CAD) and in postmyocardial infarction (post-MI) pts. The study was a part of BULPRAKT-HEART-project (BULgarian PRospective Analysis of the physicians' Knowledge and Therapy choice in HEART Disease Treatment And Prophylaxis).
Methods: Using a standard questionnaire we inquired GPs about their TLs knowledge of the serum lipids in patients with CAD. In the investigation we included 601 GPs looking after 968 807 people, 728 596 of whom were above 18 years old. The GPs were taking care of 46 542 patients with CHD, including 25 896 pts with stable angina (SA) and 8 162 post-MI pts.
Results: The inquiry data about the target levels of serum lipids needed to be reached by specific treatment in everyday GPs practice in pts with proven CAD and post-MI were as follows: 1) 54.2% of GPs aimed to maintain the total cholesterol (TC) level in pts with CAD <5.0 mmol/L and 68.2% of them in all post-MI pts - <5.0 mmol/L; 2) 59.4% of the GPs aimed to maintain the LDL-cholesterol (LDL-C) levels in pts with CAD <2.6 mmol/L and 64.8% of them aimed in post-MI pts to reach levels <2.6 mmol/L; 3) 72.3% of the GPs aimed to maintain the HDL-cholesterol (HDL-C) levels in post-MI pts more than 1.0 mmol/L (52.4% of the GPs preferred levels more than 1.1 mmol/L after treatment).
Conclusions: The European guidelines on cardiovascular disease prevention in clinical practice (2003) recommended that the serum lipids levels in patients with CAD and post-MI for TC should be <4.5 mmol/L, for LDL-C <2.5 mmol/L and for HDL-C — more than 1.0 mmol/L respectively. This investigation was carried out in Bulgaria when the National Guidelines have been officially adopted. Bulgarian GPs are in generally well aware of the TLs of the TC, LDL-C and HDL-C in patients with CAD and post-MI. More than 50% of all physicians taking part of the study used TLs for TC <5.0 mmol/L, for LDL-C <2.6 mmol/L. More then 50% of them considered that HDL-C should be more than 1.1 mmol/L. The currant antilipemic therapy included two main principals: the proper drug use and adequate control of the serum lipid levels achievement. The adequate antilipemic control was not possible without knowing the target levels of the serum lipids.

81 (609). Posters (Date: 23rd May 2005)
Impact of an Educational Program for School Children on Cardiovascular Health and Health Behaviour Among 12 Year Old School Children
Mrs. Li Lindberg, Lars Rydén, Agneta Ståhle, Lindberg LC, Rydén L, Ståhle A

Background: The Swedish Heart Lung Foundation has initiated a program ''An adventure with Pelle Pump'' (APP), aiming to foster an active lifestyle, healthy food habits and non-smoking thereby preventing future ill-health in 10-year old Swedish schoolchildren. APP consists of a free of charge study kit offered to all fourth graders in Sweden. It comprises a teacher manual and booklets including theoretical and practical material on heart- lung function and healthy behaviour for the children. Since its initiation 4 years ago >300 000 children have participated. Whether APP has the potential to become an effective tool for promoting public health was investigated in a follow up study.
Aim: To evaluate the impact of APP by comparing attitudes towards and knowledge on health and healthy behaviour in a sample of APP children, who participated 2 years earlier and an age matched cohort of non-APP serving as controls.
Methods: A questionnaire based on the APP material was answered by a random selection of 1 422 children from different social classes and living conditions (APP = 523; non-APP = 846). Moreover 16 children (APP = 7; non-APP = 9) were interviewed in depth on their attitudes towards health and healthy behaviours.
Results: As seen in the table APP children had a higher level of knowledge. APP children considered a healthy behaviour important in order ''to avoid future risk'' whereas the behaviours of non-APP children rather were triggered by ''to get immediate advantages''.

Table: Proportion of children with >50% correct replies

Type of question	No of questions	APP	Non-APP	p-value
All	16	48%	36%	<0.001
On health behaviour	8	58%	48%	<0.001
On physiology	8	54%	44%	<0.001

Conclusion: The program ''An adventure with Pelle Pump'' caused participating children to acknowledge the future importance of health and healthy behaviour and improved their knowledge on useful healthy habits. Thus this programme may become an effective investment in preserving population health.

83 (611). Posters (Date: 22nd May 2005)
Comparative Study Between the Cost of the Prevention and the Treatment of the Rheumatic Fever in Rio De Janeiro
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Secretaria de Estado de Saúde do Estado do Rio de Janeiro
Governo do Estado do Rio de Janeiro

Objective: To study comparatively the cost of the prevention and the treatment of the Rheumatic Fever in Rio de Janeiro.
Material and Methods: The number and the cost of mitral valvuloplasty and valve replacement procedures was analyzed as well as the cost of prevention using the following system — Sistema de Informações Hospitalares do Sistema Único de Saúde (Brazilian public health system).

Results:

Table 1 — The cost of Rheumatic Feveŕs surgical treatments — 2002:

Procedures	Number of procedures	Total amount payed	Average amount payed
Mitral valve replacement	419	1.205,944	2.879
Mitral valvuloplasty	37	58,790	1,589

Table 2 — The cost of Rheumatic Feveŕs prophylaxis:

Prophylaxis	Primary	Secondary
The cost of prophylaxis	0.52	9

Conclusion: The data above shows the high cost of the treatment of the Rheumatic Fever compared to its prevention. That is why the government of Rio de Janeiro has been developing a ruling project on diagnoses, prevention and treatment of this disease.

84 (612). Posters (Date: 23rd May 2005)
Night Müller Maneuver in Virchow's View: Protecting Heart, Lung and Blood
FM Moreira - Military Hospital and Socor Hospital - Belo Horizonte - Minas Gerais - Brazil
Dr. Filipe Moreira
ISHNE Sociedade Brasileira de Cardiologia

Objective: Analyze the presence of a non cultural upset in patients (pts) with some common cardiovascular manifestations.
Methods: Prospective study of a sample (15 adults) that fulfilled the following inclusion criteria: one of these ''idiopatic'' cardiovascular event (lone atrial fibrillation, primary arterial hypertension, pulmonary embolism without clot source find) added night chronic snore and abnormal degree of daytime sleepiness evidenced by the Epworth Scale. During spontaneous sleep arterial blood pressure was measured by automatic device, hemoglobin saturation by digital oximeter and continuous electrocardiogram by real-time monitor. The continuous positive airways pressure (CPAP) was used by 90 days and D dimer was performed before and after this therapy. Patient's behaviors were also analyzed.
Results: During sleep all pts presented forced inspiration cycles with abnormal degree of supraesternal region depression (Müller Maneuver) when always was observed: snore, apnea, saturation hemoglobine fall, variation of the arterial blood pressure, heart rate changes. CPAP therapy was independent factor to decrease D dimer ($p<0,05$). Patient's behavior improval was observed after therapy.
Discussion of results and conclusions: The observed parameters during sleep were quantitative variable. Many snored developed apnea (pNS). The natural breathing during the sleep is controlled by the autonomous nervous system and it also modulates cardiovascular activity. Sleep-related ventilation disturbance (SVD) can cause variable hipoxemia and partial or complete Müller Maneuver. These phenomenons can produce heart electric disturbances, arterial hypertension and vascular endothelium dysfunction. SVD is not properly cultural upset and for the high global prevalence it should be considered potential independent cause of cardiovascular diseases (CVD) that was supposed idiopatic. Early SVD detection and treatment could be used as effective primary prevention of common CVD. Every CVD come from homeostasis disturbance — cultural or non cultural.

85 (613) Posters (Date: 23rd May 2005)
Trends on Obesity from the Lara State (Venezuela) Hearth Health Survey (Escel)
Dr. Ricardo Granero[1,2], Bartolomé Finizola[1,2], Elizabeth Infante[1,2], Juan Salas[1]
[1]ASCARDIO
[2]Ministerio de Sanidad y Desarrollo Social. Venezuela.

In Latin America, the Eidemiology of Non-Communicable Diseases, Including Risk Factors have been Explored Poorly. In Particular Obesity, A Global Public Health Issue, Haven't been Documented in a Systematic Way in Lara State, Venezuela.
Methods: The data came from the Lara State Cardiovascular Health Survey (ESCEL) 1987 and 1997, a cross sectional survey based on a random sample of the population over the age of 15 years. The body mass index (BMI) was calculated as the weight in kilograms divided by the (height)2 in meters. Prevalence of obesity, defined as BMI>30, was calculated by age and gender.
Results: The ESCEL-1987 comprised 5272 people and the ESCEL-1997 3707 people. The prevalence of obesity was:

	Male		Female	
Age	1987	1997	1987	1997
15 — 24	3.3	4.4	4.4	4.8
25 — 34	7.9	10.9	10.8	11.7
35 — 44	10.3	15.8	18.1	20.1
45 — 54	13.5	16.9	18.2	20.0
55 — 64	13.0	12.8	23.8	18.2
65 — 74	11.4	10.0	17.5	16.8
$\geq$ 75	6.7	2.7	15.1	7.1
Total	7.6	9.9	12.1	13.2

Discussion: Obesity is a social and a public health issue that is difficult to study given the controversy surrounding the definition and methodology for measuring in populations. The prevalence of obesity has increased in Lara State, Venezuela but below what it is observed in other Latin American countries and Spain. The results indicate it is not too late for health interventions aimed at preventing in Lara State the epidemic of obesity that had occurred in the region.

86 (613). Posters (Date: 22nd May 2005)
Trends on High Blood Pressure in the Heart Health Study of Lara State, Venezuela (Escel) 1987 and 1997
Dr. Ricardo Granero[1,2], Elizabeth Infante[1,2], Bartolomé Finizola[1,2]
[1]ASCARDIO
[2]Centro Cardiovascular Regional Centro Occidental, Ministerio de Salud y Desarrollo Social

Knowledge Concerning the Epidemiology of Chronic, Non Transmissible Diseases and its Risk Factors in Latin America is Deficient and Partial, in Part due to Lack of Adequate Surveillance Systems. Furthermore, Most of the Current Knowledge on this Regards Came from the Work of Non Governmental Organizations and the Academia, But their Studies are Usually Punctual, Fact that Prevents Valid Comparison. The ESCEL-1987 was Financed in part by PAHO and ASCARDIO. ESCEL-1997 was Financed by ASCARDIO.
Methods: The data came from the Lara State Cardiovascular Health Study (ESCEL) 1987 and 1997, a cross sectional survey based on a random probabilistic sample of the population over the age of age 15.

Results:

The ESCEL-1987 comprised 5272 people and the ESCEL-1997, 3707 people. The prevalence (%) of HBP was:

	1987				1997			
	Normal	Pre HTA	EI	EII	Normal	Pre HTA	EI	EII
Male	14.3	33.1	32.2	20.4	20.5	50.5	15.2	13.8
Female	30.1	31.0	23.1	15.8	34.2	43.2	11.7	11.0
Total	24.1	31.8	26.6	17.6	29.6	45.6	12.8	11.9

Discussion: The epidemic of high blood pressure is a global public health problem that needs to be faced systematically given its multi-factorial nature. The data from ESCEL (1987 and 1997) are valid substratum for the development of a median and long range action plans with well defined goals and objectives, for monitoring of the epidemic, designing of prevention and control programs of HBP and assessing its impact.

87 (613). Posters (Date: 24th May 2005)

Knowledge, Attitudes, Believe and Current Clinical Practice Concerning HBP of Primary Health Care Physicians. Iribarren Municipality, Lara State, Venezuela

Dr. Ricardo Granero[2], Ricardo Granero[1,2], Manuel Ramirez[1], Bartolomé Finizola[1,2]

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Data Concerning Capacity at Primary Health Care (PHC) to Deal with HBP is Deficient. One Area of Relevance is Knowledge, Attitudes and Believes of PHC Physicians Concerning HBP. The High Prevalence of HBP Indicates that PHC is the Key Element to any Successful Program for the Prevention early Detection and Control of HBP at Community Level. This Study was Financed in Part by a Grant from the Initiative for Cardiovascular Research.

Methods: The data came from a survey done in a non probabilistic sample of PHC physicians, from the Municipality of Iribarren, Lara State, Venezuela 2004. The sample includes a wide arrange of PHC settings: government, private and NGO. The questionnaire was develop and validated according to generally accepted methodology and its content is accordance to internationally accept guidelines.

Results: There was 74 responses (100%) 59.5% female, 56.8% with at leas 10 year since graduation, and 51.4% age 30 to 40. 32.5% had any postgraduate training. Half of MD from government clinics and 81.8% of private MD think SBP<120 and DBP<80 are ''normal''. 39.6% think that the following BP values SBP 120-13 or DBP 80-89mm Hg are ''normal''. 10.8% of MD start pharmacological treatment with SBP>= 160mm Hg or(and) DBP>= 100mm Hg. 54.1% use ACE inhibitors and diuretics are used infrequently. Only 31.2% of government MD check the BP taken by nurses. 90.9% of private MD and 64.6% of government MD relieve they could help HBP patients.

Discussion: The epidemic of HBP is a global public health problem that needs to be faced systematically given its multi-factorial nature. The data from this survey unveils a new problems, there is a clear gap in between the currently accepted guidelines for one side and knowledge and clinical practice of primary care physicians. In the government sector physicians as less motivated, express less satisfaction with their work, has low self-esteem than private and NGO PHC physicians. These are main issues that needs to be addressed if any prevention and control program of HBP is to be successful.

97 (619). Posters (Date: 22nd May 2005)

Severity and Pattern of Coronary Artery Disease in Patients with Cardiovascular Dysmetabolic Syndrome

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Objective: To find out the severity and pattern of coronary lesions in patients with Cardivascular Dysmetabolic Syndrome (CDS).

Methods: A cross-sectional study was carried out in the Department of Cardiology, Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh from June 1999 to May 2000. The patients clinically diagnosed or documented to have coronary artery disease (CAD) requiring coronary angiography (CAG) were included in the study, and were grouped into patients with CDS (CDS Group) and without CDS (non-CDS group). The diagnostic criteria defined by Western Working Group, Hawaii, 1997 was used to diagnose CDS. Patients with hypertrophic and dilated cardiomyopathies, valvular and congenital heart diseases were excluded from the study. Other CAD risk factors, i.e. smoking, family history of CAD and physical inactivity were also analyzed. The CAG findings were analyzed critically.

Results: Among 132 patients 101(76.5%) were in CDS group and 31(23.5%) were in non-CDS group. The mean ages of the two groups were 50.21?8.08 and 44.03?11.89 years respectively. Triple vessel disease was greater in patients with CDS than non-CDS patients [27(26.73%) vs 2(6.45%); P<0.001]. Analysis of individual coronary artery involvement showed LCX [28(27.72%) vs 4(12.90%), P<0.05] and OM [30(29.70%) vs 3(9.68%), P<0.05] were significantly more involved in CDS patients than the non-CDS patients. No significant differences in involvement of other epicardial vessels between the two groups (>0.05). Totally occlusive lesions were significantly higher in CDS patients than in non-CDS group [28(9.18%) vs 2(3.08%); P<0.05]. The difference of extent index of CAD between the groups was highly significant [0.353±0.384 vs 0.202±0.207 (P<0.001)]. The CDS patients had significantly more diffuse disease than non-CDS patients [49(48.51%) vs 9(29.03%); P<0.05].

Conclusion: CDS patients have higher triple vessel disease, increased totally occlusive lesions, and more extensive and diffuse disease than the patients without the syndrome. Thus, regular physical exercise, control of diabetes, hypertension and dyslipidemia can prevent development of CDS and hence prevent complicated CAD.

101 (622). Posters (Date: 22nd May 2005)

Pattern of Dyslipidemia in Patients with Cardiovascular Dysmetabolic Syndrome Manifesting Ischemic Heart Disease

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Objective: To see the pattern of dyslipidemia in patients with Cardiovascular Dysmetabolic Syndrome (CDS) manifesting ischemic heart disease.
Methods: A cross-sectional study was carried out in the Department of Cardiology, Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh from June 1999 to May 2000. The patients clinically diagnosed or documented to have coronary artery disease (CAD) were included in the study, and were grouped into patients with CDS (CDS Group) and without CDS (non-CDS group). The CDS was diagnosed by using the diagnostic criteria defined by Western Working Group, Hawaii, 1997. Patients with hypertrophic and dilated cardiomyopathies, valvular and congenital heart diseases were excluded from the study. Fasting serum lipid profile was done in all the patients and the pattern of dyslipidemia was compared between the groups.
Results: Among 132 patients 101 (76.5%) were in CDS group and 31 (23.5%) were in non-CDS group. The mean ages of the two groups were 50.21?8.08 and 44.03?11.89 years respectively. The patients presented with chronic stable angina, unstable angina, angina equivalent, atypical chest pain, AMI (Q and non-Q) and Old MI and there was no significant difference between the two groups (P>0.05). Total 108 patients had dyslipidemia and the difference was highly significant [99 (98.02%) vs 9 (29.03%); P<0.001]. There were highly significant differences regarding high triglyceride [89 (88.12%) vs 4 (12.9%); P<0.001] and low HDL-cholesterol [78 (77.23%) vs 9 (29.03%); P<0.001] types of dyslipidemias between CDS and non-CDS patients. High total cholesterol and high LDL-cholesterol were more in CDS patients but the differences were not statistically significant (P>0.05).
Conclusion: Analysis of lipid profile revealed that high triglycerides and low HDL cholesterol is the typical findings in CDS patients manifesting of ischemic heart disease.

102 (623). Posters (Date: 24th May 2005)
Anti-inflammatory Action of Angiotensin Converting Enzyme Inhibitors (ACEi) in Patients in Secondary Prevention. RAICES Study.
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Background: The ACEi reduce the morbility and mortality in patients who have had a cardiovascular event or Diabetes. The anti-inflammatory effect may be an important mechanism of this benefit.Objectives.Demonstrate the influence of ACEi Ramipril (R)over C Reactive Protein High sensitivity (C-RPh) as expression of anti-inflammatory action.Methods. After the informed consent we analyze the levels of C-RPh determined by nephelometric assay after and before 6 months of ACEi treatment with 10 mg of (R) per day. We included patients in secondary prevention with antecedents of cardiovascular events or diabetes (same Hope Study), divided in three groups of risk, according to C-RPh level (AHA/CDC 2003): Low <1; Average 1-3; High >3. Statistical analysis: mean+1 SEM, median+1 intercuartil interval, t test, and Wilcoxon rank-sum test. Value of p<0.05 was considered significative.Results. We screened 115 patients: 38 were excluded (11 pre and 27 during the study), thus we analyzed 77. Mean age 60 years (SEM 11) ranged 33-86, male 56 (72.7%). Differences pre- and post-treatment are in the table. Post treatment reduce de C-RPh median of 2.17 mg/l (0.97-4.54) to 1.70 (0.88-3.41) (p<0.0009). The decrease of C-RP was statistically significant only in the high risk group (p<0.0001).Conclusion. The use of (R) 10 mg/day in secondary prevention patients reduce the CRPh levels as a parameter of anti-inflammatory. This action was observed in patients who have a high risk (C-RPh >3mg/l).

Differences

	PRE	POST	
	MEAN	MEAN	p
BMI kg/m2	29.9	29.7	0.37
SBP mmHg	138.2	126.8	<0.0001
DBP mmHg	84.5	78.3	<0.0001
PP mmHg	53.7	48.5	<0.0005
HR bpm	72.4	72.3	0.98
Glycemia mg/dl	121.4	116	0.39
TC mg/dl	208	206	0.67
HDL mg/dl	42	44	0.09
LDL mg/dl	133	129	0.54
TGC mg/dl	159	165	0.54

104 (624). Posters (Date: 23rd May 2005)
Assessment of Endothelial Function in Children and Adolescents with Type 1 Diabetes Mellitus (DM1)
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Endothelial function is an early marker of atherosclerosis. Diabetes Mellitus favors atherosclerosis, but in patients with DM1, vascular complications are more frequently identified after the 5th year of the disease.
Aim: To assess the presence of endothelial dysfunction in children and adolescents with DM1 and duration of the disease < 5 years.
Patients and Methods: Case-control study that assessed endothelial dysfunction by means of the reactive hyperemia test in 18 patients with DM1, of 13.4 ± 3.3 years of age, duration of the disease of 2.9 ± 1.2 years compared with 14 normal individuals, of 13.6 ± 3.5 years of age. Brachial artery (BA) ultrasound was carried out, with diameter and flow measurements, at rest and after deflation of the manometer, as well as the measurement of the artery at the inflated manometer stage. Means of BA flow and diameter measurements were compared at the various stages of the study by the Student t test and correlations between variables by the Spearman correlation test, with a value of p < 0.05.
Results: At rest, the BA diameter in patients with DM1 and controls was 2.62 ± 0.42mm and 2.7 ± 0.47mm and the flow 2.23 ± 1.26 L/min and 2.28 ± 0.88 L/min, respectively. In the reactive hyperemia stage, no difference was observed between DM1 patients and controls for diameter (2.85 ± 0.51mm vs 3.01 ± 0.51mm, NS) and flow (9.60 ± 4.58 L/min vs 10.99 ± 8.31 L/min, NS). In DM1 patients a negative correlation was noted between the excretion of microalbuminuria and the percentage of increase of flow after reactive hyperemia (r = - 0.5, p=0.05).
Conclusions: Endothelial function was not found to be altered in children and adolescents with DM1 and duration of disease < 5 years, however, the negative association between the percentage of increase in BA flow and excretion of microalbuminuria may suggest an early alteration in peripheral and renal vascular dynamics.

106 (625). Posters (Date: 24th May 2005)
Psychological Reactions to Screening and Non-Pharmacological Intervention for Prevention of Ischaemic Heart Disease. INTER99
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Research Centre For Prevention And Health

Objectives: To evaluate the psychological reactions of the population to screening and non-pharmacological intervention for prevention of ischaemic heart disease (IHD).
Methods: 13,016 persons randomly selected from the background population were invited for a risk assessment for development of IHD by means of a computer programme (PRECARD®). Intervention focused on smoking cessation, increase in physical activity and change in diet. A consecutive serie of 1,948 participants filled in the Symptom Check-List-90 (SCL-90) dealing with anxiety, depression and somatisation. SCL-questionnaire was filled in before and immediately after the risk assessment, and after one and ten months.
Results: The meanscores for somatisation, depression, and anxiety at baseline were 0.52, 0.45, and 0.36. The response rate of the SCL questionnaire was acceptable immediately after risk assessment (86%) and after one month (73%), but low after ten months (48%). There was no significant difference between responders and non-responders as regards baseline variables except after ten months.
A significant decrease in the scores for somatisation (0.34), depression (0.29) and anxiety (0.22) was seen immediately after risk assessment and lifestyle counselling. The decrease was less but remained after one month (0.38, 0.35, and 0.25, respectively). The decrease was higher in women than men, among those at high risk compared with low risk and among persons in lower social classes compared with persons in higher social classes.
Discussion: Screening for risk of IHD combined with immediate health counselling was not associated with an increase in anxiety, depression and somatisation in the present study. Possible reasons for these findings will be discussed.

109 (628). Posters (Date: 22nd May 2005)
Cardiovascular Risk Factor Profile of Unstable Angina Patients in Bangladesh
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Objective: The purpose of the study was to identify the risk factors in patients with Unstable Angina (UA).
Methods: Unstable angina & non-ST segment elevation myocardial infarction (NSTEMI) are the two manifestation of coronary artery disease (CAD). The study was carried out in the Department of Cardiology of Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh. 205 patients were diagnosed as UA during January 2002 to June 2003. Risk factors were assessed by history, clinical evaluation & laboratory investigations.
Results: Of 205 patients 165 (80%) were male and rest were female. The mean age of the patients was 54.82?11.72 years. 106 (52%) patients were hypertensive, 101 (49%) smoker, 57 (28%) diabetic, high total cholesterol in 114 (56%), high LDL-Cholesterol in 94 (46%), low HDL-Cholesterol in 103 (50%) and high triglycerides in 119 (58%). Family history of CAD was positive in 45 (22%) patients. 90 (44%) patients were obese and 63 (31%) had left ventricular hypertrophy.
Conclusion: High prevalence of multiple cardiovascular risk factors in the population and a tendency of aggregation of multiple risk factors in a same individual explain the recent increased in incidence of UA in Bangladesh.

115 (630). Posters (Date: 24th May 2005)
Role of Dietary Modification, Atorvastatin and Lovastatin in Lowering Triglyceride in Indian CAD Patients
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Objective: National cholesterol education programme (NCEP) emphasis on LDL-C as main target for lipid lowering treatment in CAD may be considered ''too focused'' for Indian population, especially in view of high prevalence of metabolic syndrome with raised triglycerides (TG) and low HDL-C in this cohort. Statins are exceedingly becoming part of standard treatment regimen for CAD with recognition of their role in patients with average cholesterol levels.
Methods: We conducted a comparative study on effect of diet and graded dose of Atorvastatin and Lovastatin on TG levels in nondiabetic Indian CAD patients. This was prospective randomized, placebo controlled cross over study of 56 weeks therapy. Out of 780 patients presenting in Lipid clinic, 140 were included after excluding secondary cause of dyslipidemia and any contraindication to study drugs. All were put on NCEP step II diet for 6 weeks and then randomized to receive either atorvastatin or Lovastatin in increasing doses of 10mg, 20mg and 30mg for former and 20mg, 40mg and 80mg for later, administering each dose for 6 weeks. Fasting lipid profile were performed before switching to higher dose each time. After completing one drug, a washoff phase of 6 weeks was allowed before switching them over to receive remaining drug.
Results: Mean (Standard deviation) TG at baseline was 226.54(148.36). Percent fall in mean TG level with dietary modification was 9.21%(p=0.256). With increasing doses of atorvastatin, a linear relationship was observed between percent TG fall and dose administered, the fall being 10.23% with 10mg(p <0.001), 21.39% with 20 mg (p<0.001) and 37.56% with 30 mg (p<0.001). While with Lovastatin, mean TG fall with 20mg was 33.98%(p<0.001), after which it plateaued at 30.83% with 40mg and 36.37% with 80mg. The difference in maximum fall achieved by two drugs was insignificant (p=0.855).
Conclusions: Hence, Atorvastatin and Lovastatin have significant TG lowering effect, which increases in a dose dependent manner with Atorvastatin while beyond 20mg Lovastatin has no added benefit.

117 (633). Posters (Date: 22nd May 2005)
On the Relationship of All-Cause, Cardiovascular, Cancer and Residual Mortality with Age
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Objective: To study the relationship of all-cause and cause-specific mortality with age.
Methods: Age in the age range 35-84 y is the major determinant of mortality for all-cause (AC), total cardiovascular (TCV), ischaemic heart disease (IHD), stroke, cancer (TCA) and residual (RES) mortality. RES mortality equals AC-TCV-TCA mortality. Mortality data in 5 y age classes were obtained from WHO.
Results: The R of Gompertz equations (ln mortality vs age) obtained from the age specific mortality rates from 55 developed countries is > 0.99 for AC and cardiovascular mortality for both sexes, but lower for TCA and RES mortality. Polynomial equations of the second degree using ln mortality demonstrate that the age term for TCA is highly significantly negative and for RES mortality highly significantly positive. The polynomial equations are superior to the Gompertz equations wit a R of 0.9999

Table 1. ln mortality vs age, age^2 (N=55)

	MEN					
	Intercept	age	t−age	age^2	t−age^2	R^2
All-cause	2.823	0.069	28.93	0.00012	6.28	0.9999
TCV	−1.394	0.156	17.53	−0.00041	−5.51	0.9995
IHD	−3.182	0.197	15.46	−0.00076	−7.20	0.9989
Stroke	−3.562	0.171	19.94	−0.00045	−6.33	0.9996
Total cancer	−4.722	0.271	96.30	−0.00147	−63.27	0.9999
AC-TCV-TCA	5.950	−0.051	−4.62	0.00094	10.17	0.9975

for AC and TCA mortality in men. The age term for AC mortality is significantly positive for both sexes, but especially for women. The deviations from linearity, however, are small. The results are summarized in table 1 for polynomial equations and men only.

The question arises whether at higher ages cancer mortality is underdiagnosed explaining the negative age term and thus misclassified. An alternative explanation is a decreased growth of cancer at older ages. These equations also apply, with similar levels of R, to individual countries. However, the specific regression coefficients can be very different between countries and genders and vary with time.

Conclusion: The mortality of populations over the age range 35-84 y can be accurately described by simple mathematical equations. The effect of age on mortality is dominant but modulated by external factors.

122 (638). Posters (Date: 23rd May 2005)

NORDAMI Project: Monitoring Trends in Incidence and Case-Fatality of Myocardial Infarction in Denmark, Sweden and Finland 1985-2002

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Background: Although ischemic heart disease is one of the leading causes of death, reliable and comparable monitoring indicators are still lacking. The EUROCISS project initiated under EU Health Monitoring Programme aims to define indicators for monitoring ischemic heart disease and other cardiovascular diseases to be used all over Europe. The NORDAMI project utilizes that the Nordic countries have comparable health information systems and comparable health care systems. In these countries registries of acute myocardial infarction (AMI) have been established based on record linkage of mortality and hospital discharge records from administrative registries. The registries are linked by person identification numbre. Based on these registries it is possible to establish reliable and comparable indicators for monitoring ischemic heart disease in line with the reccomendations from the EUROCISS project.

Purpose: To study trends in incidence and case-fatality of myocardial infarction in Denmark, Sweden and Finland 1985-2002.

Methods: *Incidence* of AMI is defined as a first time admission to hospital with AMI or death from AMI outside hospital with no AMI related admissions to hospital within the last 7 years. Three different definitions are used: a) AMI as primary or secondary diagnosis or underlying or contributory cause of death. b) definition a or other ischemic heart disease as underlying cause of death and c) definition b or sudden death as underlying cause of death. *Case-fatality* is measured as a) mortality within the first day after the AMI event, b) mortality day 1-27 days after the AMI and c) mortality 28-365 days after the AMI.

Results: The AMI diagnosis in the AMI registries has been carefully validated in each of the three countries. The sensitivity of the AMI diagnosis is 78% - 88% and the positive predictive value 90% - 96% compared to the MONICA diagnosis for the same cases. The incidence of AMI is decreasing from 1985 to 1999 for all definitions of AMI and all three countries. After 2000 when the new diagnostic criteria were established the incidence has increased. The incidence in the agegroup 25-74 years is similar in the three countries but with a more pronounced decrease in Denmark than in Finland and Sweden. Case fatality show a marked decreasing trend in all three countries especially for the mortality 1-27 days after the AMI.

Conclusion: Administrative databases of hospitalisation and mortality are valuable tools for monitoring AMI when the data can be linked by person identification number as in the Nordic countries.

124 (639). Posters (Date: 23rd May 2005)

Italian Register of Major Coronary Events: Attack Rates and Fatality in Different Areas of the Country

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Background and objective: Surveillance system of cardiovascular diseases is one of the main sources of information for the evaluation of preventive intervention and health planning in a country. MONICA registers, although highly accurate, require a sophisticated system of event validation, which, if implemented on nationally representative data, is expensive. The Italian Register of Major Coronary Events has developed a simplified method for the surveillance of coronary events in the general population, ages 35-74 years, carried out in seven geographical areas of the country to evaluate fatal and non fatal events.

Methods: Fatal and non-fatal major coronary *current* events were identified through the record linkage of two systematic information sources: death certificates (underlying cause of death ICD-9 410-414, 798-799 or 250, 401-404, 420-429, 440-447 with 410-414 in one of the secondary causes) and hospital discharge diagnoses (ICD-9 410-414 in any position); duration of the event was no more than 28 days. Positive predictive values (PPV) were assessed for each code reported in death certificates or hospital

discharge diagnoses through the validation of a sample of 500 *current* events per year in each area using the MONICA diagnostic criteria. *Estimated* events (NES) were obtained from *current* events (NCU) according to the following formula: NES=NCU*?(PP-Vi*Pri) where Pri were the prevalence of each specific code in the population under surveillance. Attack rate was calculated as mean value of a two-year period by dividing the number of *estimated* events by the resident population; case fatality was calculated 28 days from first day of hospitalisation as a ratio between fatal and total events.

Results: Attack rates and fatality were assessed by gender, 10-year age groups and geographical area. In Italy mean attack rate of major coronary events for all areas is higher in men than in women (respectively 32.2/10,000 and 9.3/10,000); 28-day case fatality was higher in women (38.7%) than in men (32.7%). Comparing Northern and Southern areas, CVD attack rates are respectively 35.3/10,000 and 34.4/10,000 in men; 8.9/10,000 and 12.3/10,000 in women. Fatality rates in men are 32.5% in Northern area and 30.0% in the Southern one; corresponding values in women are 39.2% and 37.1%.

Conclusions: These data show the feasibility of a population-based register for coronary disease surveillance based on simplified procedures and emphasize the need of health care and prevention planning based on reliable and time comparable indicators. Results show differences in the gender and geographical distributions of attack rate and fatality of coronary events.

125 (608). Posters (Date: 24th May 2005)

Bulgarian Survey of General Practitioners Awareness of Cardiovascular Risk Factors: Diagnosis of Diabetes Type 2 and Metabolic Syndrome

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Diabetes was recognized as the most important cardio-vascular risk factor. The screening of all elements of the metabolic syndrome (MS) should start in primary care offices.

Aim of this study was to establish the information status of general practitioners (GPs) in Bulgaria about diabetes type 2 and MS.

Materials and methods: 497 GPs who were taking care of 24607 diabetic patients have been interviewed. The questionnaire have consisted of 28 basic questions about diagnosis, monitoring, prevention and treatment of metabolic syndrome and diabetes type 2 and its late complications. Data about awareness of diagnosis of MS and diabetes is reported here.

Results: 60.6% of the GPs have recognized both impaired fasting glucose and impaired glucose tolerance as pre-diabetic states, but only 29.1% have known the exact diagnostic criteria (last revision) for diabetes. 74.8% of the physicians have considered the impaired glucose tolerance or diabetes as a part of the metabolic syndrome, but only 51.7% percent have pointed out the arterial hypertension as a sign of the syndrome too. The numbers for hypertriglyceridemia, low HDL-C and visceral obesity have been between these values. Half of the interviewed (51.7%) have known the definition of BMI. The normal values of BMI have been designated by 29.5% of the GPs. Obesity BMI- cut off has been recognized by 44.4% of the physicians.

Conclusion: Our data suggested that further information and education of the GPs was necessary as a part of the complex approach for prevention of cardiovascular morbidity and mortality.

128 (642). Posters (Date: 22nd May)

Risk Factors for Ischemic Heart Disease in Young Women

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The increase in the incidence of ischemic heart disease (IHD) in young women cannot be accounted for by increased prevalence of traditional risk factors as diabetes mellitus, hypertension and dyslipidemia only. Plans for prevention of this serious problem require adequate knowledge of other responsible risk factors. The aim of this study was to detect the role of the less commonly studied risk factors for IHD in young women. Three of these risk factors were studied: hyperhomocysteinemia, elevated lipoprotein (a) (Lp ''a'') level and chlamydia pneumonia (CP) infection.

Patients and methods: 70 young female patients (age under 40 ys, average 34.9 ? 4.3 ys) with IHD diagnosed by typical chest pain, ECG changes and positive thallium scan, in addition to 20 age matched healthy female subjects as controls were included in this study. Patients with: diabetes mellitus, hypertension, abnormal lipogram, contraceptive pills use, smoking, obesity, congenital and rheumatic heart diseases were excluded.

Plasma homocysteine, Lp ''a'' and CP antibodies IgG level were determined for every patient and control subject. Coronary angiograply was done to the ischemic group.

Results: Number of hyperhomecysteinemia patients was significantly higher in the ischemic group (30 out of 70: 42.8%) compared to controls (3 out of 20: 15%) with P value = 0.0079. Lipoprotein (a) elevation was significantly higher in ischemic patients (47 out of 70: 67%) compared to controls (2 out of 20: 10%) with P value = 0.00063. The prevalence of CP infection (+ve IgG sera) was higher in ischemic patients (46 out of 70: 65.7%) compared to controls (11 out of 20: 55%) but the difference was statistically insignificant P value = 0.54.

When the number of risk factors was calculated in the 70 ischemic patients (all had risk factors), it was found that 6 patients (8.6%) had single risk factor and 10 (14.3%) had 2 risk factors, while 54 patients (77.1%) suffered of three risk factors. In the 20 healthy controls, 7 Subjects had risk factors. Out of them, 3 (42.9%) had single risk factor and 2 (28.6%) had 2 risk factors while only 2 (28.6%) had three risk factors.

Conclusion: hyperhomocysteinemia and elevated Lp ''a'' may be important etiological risk factors for IHD development in young female patients. CP infection may play a role in the pathogenesis of IHD in this group when co-present with the other risk factors. The presence of multiple risk factors may be necessary for IHD to develop in young women.

136 (608). Posters (Date: 24th May 2005)

Discovery Dynamics, Follow up and Treatment of Arterial Hypertension by General Practitioners

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Objectives: During one year we have studied the discovery rate of patients with arterial hypertension and its management by general practitioners (GPs), which has been part of the national project BULPRAKT-HEART-study (BULgarian PRospective Analysis of the physicians' Knowledge and Therapy choice in HEART Disease Treatment And Prophylaxis).

Material and methods: We used a questionnaire for GP groups coming from different regions all over the country during the

period March 2003 — September 2004. The questionnaire was used 3 times and it was concerning the number of patients with arterial hypertension and the methods of the treatment approach.
Results: The 1st inquiry revealed that 926 GPs have followed up 204 152 pts with hypertension, the 2nd showed 830 GPs following up 197 081 pts and the 3rd — 497 GPs following up 120 781 pts. The three inquiries showed respectively that 85.7%, 81.8% and 94.7% were on drug treatment. The most preferable drug classes for monotherapy were: during the 1st inquiry period — ACE-I — 39.6%, diuretics — 31.2%, and beta-blockers — 18.9%; during the 2nd inquiry period - ACE-I — 38.5%, diuretics — 28.6%, and beta-blockers — 19.8%, and the 3rd inquiry period- ACE-I — 38.0%, diuretics — 31.5% and beta-blockers — 18.7%.
Conclusions: We found an increasing trend of newly diagnosed patients with arterial hypertension. For one year the number of patients has increased with 10%. Extrapolating the data of GPs inquiry the newly diagnosed patients were 120 000. We registered a persistent tendency for ACE-i use as being the most preferable drugs for hypertension treatment.

138 (608). Posters (Date: 24th May 2005)
Evolution in General Practitioners' Drug Choice Preferences for Treatment of Arterial Hypertension
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Objectives: We studied the general practitioners' (GPs) drug choice preferences for treatment of hypertension and the evolution of the preferences for an one-year period.
Materials and methods: We carried out 3-step inquiry analysis: 926 GPs were included in the 1st analysis, 830 — in the 2nd and 497 — in the 3rd. An interim inquiry including 1290 GPs was introduced testing the opinion about the most effective drug class in general or for initial therapy or for treatment of complicated hypertension. GPs attended a medical education courses according the clinical guidelines in between the inquiries.
Results: The most frequently used drugs for an initial therapy according to the results of the three inquiries were: the 1st step — ACE-inhibitors (ACE-i) — 39.62%, diuretics — 31.32%, beta-blockers (BBs)— 18.91%, Calcium channel blockers (CCBs) — 8%, angiotensin-receptor blockers (ARBs) — 1%; the 2nd step — ACE-i — 38.9%, diuretics — 31.57%, BBs — 18.74%, CCB — 8.66%, ARBs — 1.7%; and the 3rd step - ACE-i — 39.5%, diuretics — 28.6%, BBs — 19.8%, CCB — 9.3%, ARBs — 1.9%.
GPs' preferences for a monotherapy drug were as follows: the 1st step — ACE-i — 59.1%, diuretics — 19.48%, BBs — 12.05%, CCB — 4.63%, ARBs — 3.76%; the 2nd step - ACE-i — 53.1%, diuretics — 21.77%, BBs — 14.1%, CCB — 5.7%, ARBs — 4.05%; and the 3rd step - ACE-i — 58.1%, diuretics — 14.6%, BBs — 12.2%, CCB — 8.1%, ARBs — 4.83%.
The data of the interim analysis showed that 76% of GPs considered ACE-i for the most effective drug class, 53.3% considered them the best choice as initial therapy, followed by the diuretics (30.3%) and BBs (10.1%). The ACE-i were classified as most effective drugs for treatment of complicated hypertension (49.3 %), followed by CCBs (17 %), ARBs (9.9%), BBs (9.6 %) and diuretics (8.9%).
Conclusions: We did not find a significant difference between the GPs' preferences regarding the drug choices for treatment of hypertension during the followed period. ACE-i have been the most preferable drug class. There have been some treatment differences considering the stage of hypertension and co-existence of complications.

142 (653). Posters (Date: 22nd May 2005)
Behavioral Correlates of Stress in Youth and Young Adults in Sri Lanka
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Cardiovascular diseases continue to be one of the leading causes of mortality and morbidity in Sri Lanka. Stress, overweight, physical inactivity and substance use have been identified as risk factors of cardiovascular diseases. Little is known about epidemiological aspects of these risk factors in youth and young adults in the country. A self-report questionnaire was administered to a sample of 1125 individuals (71.5% were females) aged between 15 to 34 years to identify the prevalence and to explore the relations between elevated stress and Body Mass Index (BMI), physical activity, alcohol use and tobacco smoking. Participants were students from two government schools, a medical faculty, a nursing college and a teacher training college located in a southern district of Sri Lanka. Health-, work- and family-related stress was measured using a 13-item stress scale (alpha = 0.77). In addition, the weights and the heights of the participants were measured using standard scales. For males, 53.0% reported elevated stress levels, 2.5% were overweight (BMI > 25 kg/m^2), 38% were suffering from chronic energy deficiency (BMI < 18.5 kg/m^2), 44.5% were yearly alcohol users, 24.3% were yearly smokers and 37.1% were physically inactive. For females, 57.3% reported elevated stress levels, 2.6% were overweight, 46.3% were suffering from chronic energy deficiency, 2.2% were yearly alcohol users, 0.0% were yearly smokers, and 61.6% were physically inactive. Logistic regression analysis indicated that in males, low family income (OR= 1.74; 95% CI = 1.17, 2.57) and yearly alcohol use (OR=1.73; 95% CI = 1.09, 2.79) were related to elevated stress levels. In females, elevated stress was related to low family income (OR= 1.52; 95% CI = 1.18, 1.95), physical inactivity (OR = 1.34; 95% CI = 1.01, 1.80) and increased age (OR=1.19; 95% CI= 1.01, 1.39). Stress seems to be a significant health-depriving factor in this target population. Low socio-economic status is associated with elevated stress levels. Results also emphasize that substance use habits of males and physical inactivity in females need special attention in mental health promotion programs targeted at youth and young adults in Sri Lanka. Furthermore, this population group is affected by undernutrition, but it was not associated with elevated stress levels. Future research needs to address cause-effect relationships of the variables we studied in this research.

143 (654). Posters (Date: 22nd May 2005)
The Relationship Between Main Chronic Noncommunicable Diseases and Quality of Life in a Chinese General Population For the Collaborative Group of China Multicenter Study of Cardiovascular Epidemiology.
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Background: Although there were many data on morbidity and mortality of chronic noncommunicable diseases in China, the data on QOL related to these diseases were still relatively insufficient.
Objective: To study the relationship between main chronic noncommunicable diseases and quality of life in a Chinese general population.
Methods: We collected data on main chronic noncommunicable diseases by standard questionnaire and assessed QOL using the Chinese Quality of Life Instrument (QOL35) in a general population of 1356 participants in the year 2002.
Fasting serum glucose, cholesterol, triglyceride, blood pressure, weight and height were measured by international standard methods. We used two sample ttest and multivariate linear regression analyses to assess the relationship between main chronic noncommunicable diseases and QOL.
Results: Among 1626 persons as target population, 1391 persons took part in this survey and finally 1356 persons 83.4% aged from 43 to 73 years had complete data.
Among these 1356 subjects, there were 500(36.9%)men. The prevalence of hypertension, obesity, diabetes mellitus, hypercholesterol, hypertriglyceride, low HDLC were 43.6%, 27.7%, 8.4%, 37.3%, 28.7%, and 30.5%. The rates of patients with history of stroke, angina pectoris(diagnosed by Rose questionnaire),myocardial infarction, chronic bronchitis, liver diseases, kidney diseases, cancer, endocrinopathy were 4.6% 5.5%, 0.7%, 8.8%,5.1%,3.8%,5.8%, and 2.9%. The mean differences for total QOL scores between without and with hypertension, obesity, diabetes mellitus, hypercholesterol, hypertriglyceride, low HDLC, stroke, angina pectoris, myocardial infarction, chronic bronchitis, liver diseases, kidney diseases, cancer, and incretion diseases were 1.3 P=0.039 ,0.4 P=0.547 ,0.2 P=0.840 ,0.03(P=0.963), 0.4(P=0.575), 1.0(P=0.152), 7.9 P<0.001 ,4.8 P=0.001 ,10.4 P=0.010 ,7.2 P<0.001 ,0.9 P=0.527 ,3.1 P<0.001 ,4.7 P=0.009 and 3.5 P=0.106 points respectively. After adjusted for age and sex, one multiple stepwise linear regression model predicting total QOL scores displayed the regression coefficients for myocardial infarction β=9.2, P=0.017 , stroke β=7.8, P<0.001 , chronic bronchitis β=7.5, P<0.001 , kidney disease β=7.5, P<0.001 , and cancer β=3.7, P=0.007 . These diseases influenced significantly the QOL scores for not only general QOL, physical and independence domains, but also psychological, social, environmental, and QOL transition domains.
Conclusion: In Chinese general population, the main chronic noncommunicable diseases related to QOL are myocardial infarction, stroke, cancer, kidney diseases, chronic bronchitis. The relationship of other chronic diseases to QOL might be relative weak and potential.
Keywords: Chronic noncommunicable disease, quality of life, cross sectional survey.

148 (658). Posters (Date: 24th May 2005)
Gender Differences and Risk Factors in Treated Hypertensives — A National Study in Primary Health Care
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Background: There is a growing demand to optimise the quality of care of tHT in order to lower the risk of cardiovascular disease. By an increased knowledge of how these patients are taken care of an inadequate treatment will be discovered and there will be a possibility to optimise the treatment.
Objective: To evaluate RF control, treatment profile, and gender differences in tHT in PHC.
Design and method: An open, cross-sectional survey in the PHC. In total, 4 750 tHT (48% men), with an average age of 66 years were registered by 213 physicians at 103 PHC during 2002-2004.
Results: Means (SD) for blood pressure (systolic/diastolic) was 148 (17.5)/82 (9.3) mmHg, total cholesterol 5.4 (1.0) mmol/L and LDL-cholesterol 3.2 (1.0) mmol/L. The prevalence of hyperlipidaemia (TC >5.0, LDL-C >3.0 mmol/L) was 73% respectively 69%, left ventricular hypertrofi (LVH) 18%, diabetes 22%, microalbuminuria 21%, and smoking 15%. In total 32% of the patients were treated with lipid lowering drugs of which 38% and 43% reached the treatment goal for total- LDL-cholesterol respectively. Only 22% of the tHT had a well controlled blood pressure (<140/90 mmHg). Of those who also had diabetes only 9% had a well controlled BP (<130/85 mmHg). Males had more diabetes, LVH, and microalbuminuria than females (p<0.01). Even with a comparison within three age groups < 56, 56-70, and >70 years these differences remained, except for LVH in males >70 years. More females than males smoked in the age group <56 years but more males >70 years smoked. The men had a less well controlled SBP and total cholesterol than the women, but the women had less well controlled DBP. Women were more often treated with diuretics and men were more often treated with ACE-inhibitors, calciumchannel blockers and lipid lowering drugs.
Discussion: More than 70% of the study population had hyperlipidaemia and a not well controlled blood pressure. There seems to be gender differences in the risk profiles of tHT with more RF among men.
Conclusion: Treated hypertensives should be paid more attention to in order to get a more optimised risk factor control, especially in lowering of lipids and blood pressure. The ambition should be to minimise gender differences in risk factor control.

153 (661). Posters (Date: 23rd May 2005)
Pregnancy and Heart Disease: Predictors of Maternal Evolution
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The aim of this study was to analyze the evolution of pregnancy in patients with cardiac diseases in order to find predictors of maternal outcome.
Methods: The records of 116 consecutive patients with cardiac diseases (136 pregnancies), attended in our hospital between December 1985 and December 2003 were reviewed. Forty-two patients had congenital and 74 acquired cardiac diseases. We analyzed in the mother the existence of pulmonary hypertension (PH), cyanosis (C), left ventricular dysfunction (LVD), use of oral anticoagulants, and previous pregnancy looses and in the offspring the occurrence of death, preterm delivery, low pound for gestational age, and fetal-neonatal vitality. Forty normal pregnant patients served as a control group. X 2, Fischer exact, Student and Mann Withney tests were used to analyze the differences between groups.
Results: The cardiac pregnant patients had a higher number of complications (36 % vs 0 %) p < 0.0002. Those patients with C and PH had more maternal complications (p < 0.04 and p < 0.0002 respectively). The patients with LVD and those who received oral anticoagulants did not had a significant higher risk.

Conclusions: In our group of patients the existence of C and PH was associated with a higher risk of maternal complications. The presence of LVD and the use of oral anticoagulant do not confer a higher maternal risk. This data may be useful to adopt preventive measures.
Keywords: Pregnancy; Heart Diseases; Maternal Evolution.

157 (663). Posters (Date: 24th May 2005)
Post-Operative Cardiovascular Risk in Major Vascular Surgery
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Objective: Analyze the incidence of acute myocardial infarction (AMI) and death, in the post-operative period of peripheral vascular surgery and compare it with other series.
Materials and Methods: Observational, prospective study of 106 patients who underwent elective peripheral vascular surgery. Patients were followed with serial electrocardiograms (ECG), enzymatic assays and, in selected cases, troponin T test, in the first five post-operative days. AMI was defined by at least one of the following: 1) new q waves in the ECG, 2) a typical enzymatic curve and/or positive troponin T tests. These results were compared with the largest series. $X^2$and Student t tests were used for statistical comparison.

	Ours	L'Italien (p)	Krupski (p)	Eagle (p)	Sicari (p)
No of patients	106	1081	140	547	509
Age (mean ± SD)	73.1±8	—	67±8 (0.01)	—	66±10 (0.01)
>70 years (%)	75	35 (<0.001)	—	35 (<0.001)	—
Diabetes (%)	52	21 (0.001)	31 (0.001)	21 (0.01)	11 (<0.001)
Heart Failure (%)	17	10 (0.07)	—	10 (0.04)	—
Angina (%)	14	—	28 (0.035)	26 (0.035)	—
Previous AMI (%)	16	—	—	39 (<0.001)	—
AMI and death (%)	11.3	8 (0.25)	9.95 (0.4)	9.5 (0.35)	3.1 (<0.001)
AMI (%)	9.4	—	2.15 (0.006)	5.5 (0.08)	2.16 (<0.001)
All cause death (%)	2.8	—	7.8 (0.09)	—	1.2 (0.4)

Results: The rate of AMI and death was 11.3% (IC95%: 5,3-17,3) (death of 2.8%, AMI of 9.4%). The characteristics and outcomes are mentioned in the following table:
Conclusions: Compared with other series, our patients were older, with higher prevalence of diabetes and heart failure, but less frequency of angina. The rate of AMI and death was similar.

159 (663). Posters (Date: 22nd May 2005)
Prevalence of Cardiovascular Risk Factors: Hyperlipidemia and Hypertension
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Objective: Analyze the prevalence of hyperlipidemia (Hy) and arterial hypertension (AH), according to age and sex in a population who assisted to our hospital during a campaign designed to detect and prevent cardiovascular diseases.
Methods: Hy was defined as a total cholesterol ? 200 mg/dl and the diagnosis of AH was made according to criteria of the JNC VI. The population was integrated by 1369 persons (534 men and 835 women). For the purpose of the analysis we considered 3 groups: younger than 50 years (n=195), between 50 and 70 years (n=798) and older than 70 years (n=376).
Results: The prevalence of Hy and AH according to age and sex is presented in the following table.

	Hy	Hy		AH	AH	
	men	women	p (sex)	men	women	p (sex)
<50 years	37.5%	33.9%	ns	40.8%	31.1%	ns
50-70 years	43.2%	56.2%	0.005	59.4%	50.2%	0.01
>70 years	36.2%	47.8%	0.03	66.4%	60.7%	ns
TOTAL	40.4%	50.4%	0.004	58.4%	50.6%	0.003
p (age)	ns	0.001		0.001	0.001	

Conclusions: 1) Hy was more frequent in women over 50 years and showed a bimodal pattern along life: higher values in the middle group and decreasing in the elderly. 2) AH was more frequent in men and increased progressively according to age in both sex.

161 (663). Posters (Date: 22nd May 2005)
Prevalence of Cardiovascular Risk Factors: Sedentary Life Style and Smoking
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Objective: Analyze the prevalence of sedentary life style (SLS) and smoking (SMK), according to age and sex in a population who assisted to our hospital during a campaign designed to detect and prevent cardiovascular diseases.
Methods: SED was defined according to the AHA/ACC recommendations: less than a 40 minute session of physical activity four times a week and SMK was defined as the consumption of at least 20 cigarettes in the last year. The population was integrated by 1369 cases (534 men and 835 women). For the purpose

	SLS	SLS		SMK	SMK	
	men	women	p (sex)	men	women	p (sex)
<50 years	65.8%	70.6%	ns	21.0%	16.8%	Ns
50-70 years	62.5%	63.5%	ns	20.4%	9.9%	0.001
>70 years	52.2%	68.6%	0.001	4.5%	4.9%	Ns
TOTAL	60.4%	66.0%	0.03	16.3%	9.6%	0.002
p (age)	ns	ns		0.001	0.001	

of the analysis we considered 3 groups: younger than 50 years (n=195), between 50 and 70 years (n=798) and older than 70 years (n=376).
Results: The prevalence of SLS and SMK according to age and sex is presented in the following table.
Conclusions: 1) SLS was more frequent in women over the age of 70 years. 2) SMK was more frequent in men, particularly in the group between 50-70 years, and markedly decreased with aging.

162 (661). Posters (Date: 23rd May 2005)
Pregnancy and Cardiac Disease: Predictors of Neonatal Evolution
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The aim of this study was to analyze the evolution of pregnancy in patients with cardiac diseases in order to find predictors of fetal and neonatal outcome.
Methods: The records of 116 consecutive patients with cardiac diseases (136 pregnancies), attended in our hospital between December 1985 and December 2003 were reviewed. Forty-two patients had congenital and 74 acquired cardiac diseases. We analyzed in the mother the existence of pulmonary hypertension (PH), cyanosis (C), left ventricular dysfunction (LVD), use of oral anticoagulants, and previous pregnancy looses and in the offspring the occurrence of death, preterm delivery, low pound for gestational age, and fetal-neonatal vitality. Forty normal pregnant patients served as a control group. X 2, Fischer exact, Student and Mann Withney tests were used to analyze the differences between groups.
Results: The cardiac pregnant patients with C and PH had more fetal-neonatal complications (p? 0.05). The use of oral anticoagulants was associated with a higher probability of complications (p? 0.05). The existence of LVD was associated with a higher number of fetal looses.
Conclusions: In our group of patients the existence of C and PH was associated with an adverse fetal-neonatal evolution. The use of oral anticoagulants confers a higher fetal risk, and the existence of LVD a great number of fetal looses. This data may be useful to adopt preventive measures.
Keywords: pregnancy, heart diseases, fetal-neonatal evolution.

164 (661). Posters (Date: 23rd May 2005)
Prevalence of Cardiovascular Risk Factors: Obesity and Diabetes
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Objective: Analyze the prevalence of obesity (OBS) and diabetes (DBT) according to age and sex in a population who assisted to our hospital during a campaign designed to detect and prevent cardiovascular diseases.

	OBS	OBS		DBT	DBT	
	men	women	p (sex)	men	women	p (sex)
<50 years	77.6%	66.4%	ns	5.3%	2.5%	ns
50—70 years	77.1%	75.9%	ns	10.8%	6.9%	0.05
>70 years	73.9%	67.8%	ns	10.4%	8.3%	ns
TOTAL	76.2%	72.2%	ns	9.9%	6.7%	0.03
p (age)	ns	0.02		ns	Ns	

Methods: OBS was defined as a body mass index ? 25 and DBT by reference of the patient. The population was integrated by 1369 cases (534 men and 835 women). For the purpose of the analysis we considered 3 groups: younger than 50 years (n=195), between 50 and 70 years (n=798) and older than 70 years (n=376).
Results: The prevalence of OBS and DBT according to age and sex is presented in the following table.
Conclusions: 1) We found no differences in the prevalence of OBS according to sex. 2) A bimodal pattern was found in women according to the prevalence of OBS, higher in the middle age group and descending in the elderly. 3) DBT was more frequent in men, particularly in the middle group, showing a tendency to increase its prevalence in both groups with age.

166 (661). Posters (Date: 23rd May 2005)
Prevalence of the Metabolic Syndrome in an Ambulatory Population
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Background: The presence of certain clinical and laboratory findings known as the metabolic syndrome is gaining importance due to its association with cardiovascular disease.
Objective: Analyze the prevalence of the metabolic syndrome (MS) and its components in an ambulatory hospital population.
Methods: We studied 1220 patients assisted as out patients to the Cardiology Division of our hospital, 694 (56.8%) men (59.1 ± 13.1 years) and 526 (44.2%) women (60.5 ± 26.4 years). MS was considered if at least 3 of the following components were present: a) Blood pressure $\geq$ 135/85 mmHg (BP), b) Body mass index $\geq$ 25 (BMI), c) Tryglicerides $\geq$ 150 mg/dl (TG), d)HDL cholesterol <40 mg/dl in men and <50 mg/dl in women (HDL) or e)fasting glucose ? 110mg/dl (GLU).
Results: MS was present in 371 patients (30.4%), 269 men (38.7%) and 102 women (19.4%): p<0.0001. The table shows the prevalence of each component by sex.

	MEN (n=694)		WOMEN (n=526)		p value
	n	%	n	%	
BP	395	56.9	292	55.5	ns
BMI	364	52.4	203	38.6	<0.0001
TG	222	32.0	107	20.3	<0.0001
HDL	236	34.0	62	12.0	<0.0001
GLU	183	26.4	75	14.3	<0.0001

Conclusions: 1) In this ambulatory population the MS was present in near one third of patients, being more frequent in men. 2) BP and BMI were the most prevalent components. 3) Except for BP, the other components were more prevalent in men.

184 (677). Posters (Date: 22nd May 2005)
HLA Class II Associations with Rheumatic Heart Disease in Pakistan
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Recent studies on rheumatic heart disease (RHD) in Pakistan have shown an alarming prevalence rate of 22/1000 and 5.7/1000 in urban and rural areas, respectively. Genetic control of

Table 1

DRB1*	01	03	04	0701	08	0901	1001	11	12	13	1302	14	15	16
CONTROLS	0.028	0.142	0.096	0.128	0.009	0.028	0.041	0.092	0.018	0.083	0.023	0.055	0.248	0.009
PATIENTS	0.065	0.116	0.078	0.211	0.009	0.004	0.060	0.073	0.017	0.095	0.022	0.047	0.198	0.004
DQB1*	02	0301/04	0302	030302	0305	04	05	0601	0602	0603	0604			
PATIENTS	0.261	0.133	0.028	0.000	0.005	0.009	0.220	0.170	0.023	0.110	0.041			
CONTROLS	0.267	0.108	0.034	0.013	0.000	0.009	0.246	0.108	0.043	0.138	0.034			

immune reactions has been implicated in the development of RHD. The aim of our study was to determine the role of the human leukocyte antigen (HLA) class II alleles in genetic susceptibility to RHD in patients with relatively homogeneous clinical manifestations.
Blood samples were collected, with informed consent, from 116 unrelated patients (females n=95, males n=21) with rheumatic mitral valve disease, predominantly mitral stenosis, assessed by echocardiography. The control group consisted of 109 ethnically matched healthy individuals (females n=60, males n=49) with normal echocardiograms. Genomic DNA was extracted from venous blood using the standard phenol/chloroform extraction procedure. Typing for HLA -DRB1, -DRB3, DRB4, DRB5 and -DQB1 was carried out using polymerase chain reaction with sequence specific primers. HLA allele frequencies were calculated using Arlequin software and the statistical analysis was carried out using the Statistical Package for Social Science (SPSS) software.
The HLA allele frequencies are given in Table 1. Significant variation in frequency between patients and controls was observed for the HLA-DRB1*07-DRB4 haplotype (p=0.026), as previously seen in various world populations.
Our data demonstrate an association of HLA with susceptibility to RHD in the Pakistani population. Further large-scale studies are needed to consolidate the reliability of genetic testing in RHD for a cost effective strategy for primary prevention of rheumatic fever and its sequela.

186 (679). Posters (Date: 23rd May 2005)
Cardiovascular Risk Factors in Slovak Elderly Population Sample: Comparison of Two Districts in the Country
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Introduction: Cardiovascular diseases (CVD) represent the most frequent cause of death in Slovak republic (55%) and in people over 65 are one of the highest worldwide. Therefore, a screening programme was implemented to characterise the risk profile of institutionalized elderly population. Two districts were compared: Bratislava, the capital of the country and Gabcikovo (a rural district with highest CVD incidence in Slovakia).
Methods: Bratislava cohort consisted of 500 persons (280 men-m, mean age 76.3 yrs.and 220 females-f, mean age 79.8 yrs); it was compared with an identical age group from Gabcikovo. History, physical and biochemical examination results, activities of daily life and cognitive functions were compared.
Results: suggests an unfavourable situation: hypertension was present in 58.3% (62%f vs 58% m), smoking 13.5% (9%f vs 30%m), elevated level of LDL-cholesterol 68.2% (71%f vs 62%m), lower level of HDL-cholesterol 90% (93%f vs88%m), diabetes mellitus and impaired glucose tolerance 41.3% (39%f vs47%m), hypertriglyceridaemia 23.5% (25%f vs 21%m), obesity 18.3% (20%f vs 15%m). 41% of probands had 2 risk factors (RF), 28.3% had 3RF, 9.6% more than 3RF. Nobody was without RF. A negative correlation between systolic blood pressure and cognitive function was found. The results from Gabcikovo cohort were more unfavourable in comparison with Bratislava group: significantly higher was the percentage of smokers, hypercholesterolaemia and obesity.
Discussion: Obtained results are critical- demonstrate an unfavourable risk profile of the Slovak elderly population.
Conclusion: A high risk cardiovascular profile both the metropolitan and the rural population is responsible for the high cardiovascular mortality rate in the country. An improvement can be achieved only by common effort of the all society; an intensive and comprehensive education of the population is necessary.

195 (683). Posters (Date: 23rd May 2005)
Trends In Acute Coronary Events Over the Past Two Decades: The Monica Register in Ghent — Belgium
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Background: Mortality from coronary heart disease (CHD) shows a declining trend in many European countries —also in Belgium. Official CHD mortality statistics give however an incomplete picture of the true trends in incidence, recurrence and outcome of the disease and do not allow to study the independent effects of primary and secondary prevention programmes and of changes in acute coronary care. From a public health point of view, a more detailed surveillance of the disease on the population level is therefore of utmost importance as a basic tool for health policy planning and evaluation.
Setting: Since 1983, acute coronary events have been registered in the city of Ghent in the population aged 25-69 years (with a short interruption of three years from 1993 to 1995). This surveillance was done in close collaboration with all the hospitals, cardiologists and general practitioners from the study region. Data are now available for a 20 year period (up till the year 2002).
Methods: A standardised protocol for case finding and ascertainment (from the global WHO MONICA Project) was used and has remained unchanged during the whole registration period.
Results: Age-standardised attack rates for total, fatal and non-fatal acute coronary events significantly declined over the observed period in both men and women. This decrease varied between —13.4% and —26.4% over a 5 year period for the different categories. Overall case fatality rates (CFR — i.e. death within 28 days after onset of symptoms) declined slightly and non-significantly during the observed period in males. In females the decline in CFR was statistically significant and was on average -10.8% over a 5 year period. CFR for hospitalised patients decreased more steeply from around 30% in the early eighties to levels between 10% and 20% in the second half of the nineties.
Discussion: On the whole, favourable trends in fatal and non-fatal acute coronary event incidence and in CFR are registered in this region. The observed data suggest effects of both prevention of the disease and better survival related to a better care. However, further substantial improvement at different levels is possible and necessary.

197 (608). Posters (Date: 24th May 2005)
Hypertensive Patients Distribution According Comorbidity and Risk Factors
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Objectives: The aim of the study was to analyze the rate of appearance of patients with arterial hypertension and the distribution of the risk factors among them. The study was part of the BULPRAKT-HEART-project (BULgarian PRospective Analysis of the physicians' Knowledge and Therapy choice in HEART Disease Treatment And Prophylaxis).
Materials and methods: The GPs had been inquired about the number of hypertensive patients and their distribution according to the other coexistent risk factors: elevated cholesterol blood levels and diabetes. Complications connected to hypertension had also been studied as well as the treatment modalities and the advises used by the GPs for risk factors control.
Results: We studied the data obtained from 497 GPs, who had followed up about 120 781 patients with arterial hypertension. 114 415 patients had been under active treatment (94.7%). Monotherapy had been applied to 24.2 %, two drugs had been used in 49% of all treated patients and 3 to 4 drugs had been used in 26.8%. 22% of all patients with arterial hypertension had had symptomatic coronary artery disease, 14.3% of them had been with angina and 14.5% - with cerebral vascular disease. Cholesterol levels higher than 6 mmol/L had been found in 17.8% of the hypertensive patients. In 7.6 % of them cholesterol levels had been higher than 8 mmol/L. 20.3% of the patients had had arterial hypertension and diabetes. 91.5% had been advised to reduce the body weight, 87% - smoking cessation, 79.2% - to increase their physical activity and 85.9% of the patients had had to follow a diet.
Conclusions: The mean number of hypertensive patients who had been followed up by every GP was 243. The predominant number of hypertensive patients had been on combination therapy. Vascular complications had been found in 1/6 to 1/4 of them and diabetes — in 1/5 .GPs were convinced that it had been necessary to advise the patients to practice life-style modifications.

201 (688). Posters(Date: 24th May 2005)
Time Delay in Controlling Blood Pressure in Hypertensive Patients since the Admission to a Cardiovascular Prevention Program
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Background: There are few data concerning the delay (D) in normalizing blood pressure (BP) outside clinical trials.
Objective: To explore the D in controlling BP in hipertensive patients (p) admitted to a pilot phase of a cardiovascular preventive program in a University hospital.
Methods: We included 128 consecutive p, age: 55.7 ± 10, male: 68%, previous HT: 87.5%, duration of HT: 2,3 ± 1,5 years, on treatment at admission: 66%. Pharmacological and/or non pharmacological treatment was prescribed; adherence to diet was sistematically evaluated. We measured intervals time in days between admission and the first consultation in which normal BP was achieved during a six months (m) period; each value was allocated to correspondent monthly period. All non responders p were asked to return within a m, and followed at least 3 consecutive m. The cumulative rate of responders was evaluated for each m. Mantel-Haentzel analysis was used to evaluate differences in cumulative response according to the knowledge of previous HT, the duration of this knowledge, to be treated or not at the time of admission and the adherence to the prescribed diet. A multivariate analysis (stepwise logistic regression) was conducted with these variables adding age and baseline BP values to predict BP control.
Results: Cumulative rate of 128 p with controlled BP at 1°, 2°, 3°, 4°, 5° and 6° m was 20(15%) 42(33%) 53(41%) 63(49%) 71(55%) and 78(61%) respectively. For 87 adherents p to diet at 1°, 2°, 3°, 4°, 5° and 6° m was 17(19%) 36(41%) 44(51%) 53(61%) 60 (69%) and 64(73.5%). None of the 3 variables related to HT history in Mantel-Haentzel analysis showed differences; adherents to diet achieved significantly more proportion of normalized BP than non adherents (73.5% vs 34.4% p<.001); a half of them normalized earlier than the whole group. Age (p=.03), baseline systolic BP (p=.01) and adherence to diet (p=.01) were independent predictors of BP control in multivariate analysis.
Conclusion: Six month was required to control BP in 61% of the p. Reinforcement and systematic evaluation of the adherence to diet is necessary to optimize the efficacy and efficiency of a prevention cardiovascular program in order to accelerate BP control and to normalize more patients.

202 (689). Posters (Date: 24th May 2005)
A Patient Compliance in Antyhypertensive Treatment in Bosnia and Herzegovina
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Background: In most of the cases, the antihypertensive therapy must be maintained for years or decades. Remembering doses, paying for refills, keeping appointments and accepting the status of patient-hood for an asymptomatic illness may present the real impediments to continuing treatment.
Objectives: The primary aim is to determine the influence of the compliance in antihypertensive treatment and complications prevention. A secondary aim is to analyze the compliance through socio- demographic features.
Method: Anterospective observational study included 313 patients from four family medicine practices in Bosnia and Herzegovina. Structured interviews of patients had an aim to evaluate history of patient, current and previous treatments and to educate all patients with hypertension who were consulting their physicians. During the further appointments, the impact of patient compliance upon a treatment success was analyzed. The compliance was assessed through gender, age, social status, professional qualification and environment. Data collection took place throughout 2002-2004.
Results: Patient compliance was statistically significant for antihypertensive treatment and complications prevention. A gender, age, social status and environment were not statistically significant for a patient compliance. Professional qualification was statistically significant for a patient compliance. In the cases where lasting compliance was established, drugs that could be reimbursed by Social Insurance Company were prescribed in 65 % of cases.
Conclusion: Poor patient compliance is present among both genders and all age, social and environmental groups. Compliance is better among the patients with college or university degree. Support and continuing education of patients with hypertension can often enhance treatment plans and compliance, decelerate complications of a disease and subsequently, coping with the problem.

204 (690). Posters (Date: 23rd May 2005)
Risk Factors for Ischaemic Heart Disease in Childhood: New Opportunities for Prevention in an Outpatient Clinic in Brazil
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Background: The prevalence of risk factors traditionally linked to adulthood, such as obesity, abnormal lipid profile, hypertension, physical inactivity and even smoking have been increasing also in childhood, leading to the need for new strategies of prevention. We describe the patients referred for evaluation in an outpatient clinic specially planned for early intervention and prevention of childhood risk factors, in a tertiary reference center for pediatric cardiology in Porto Alegre, southern Brazil.
Methods: All 61 patients aged 2 to 15 years old receiving multidisciplinary attention at the Pediatric Preventive Cardiology outpatient clinic at the Cardiology Institute of Rio Grande do Sul, Porto Alegre, Brazil, from March 2001 to July 2004 were included. Patients were referred because of a family history of premature heart disease, or for risk factors such as obesity, abnormal lipid profile or hypertension. All children were submitted to complete medical history and physical examination, and complimentary tests when indicated.
Results: Mean age was 9 ± 3 years. The most frequent risk factors were family history of heart disease (59%), obesity (48%), passive smoking (46%), physical inactivity (36%), hypertension (18%), and abnormal lipid profile (16%). Children watched a mean of 3.8 ± 2 hours of TV a day. Mean BMI was 23.5 ± 5, systolic BP 122 ± 19 and diastolic BP 75 ± 20. All children received orientation aimed particularly at health habits, including a healthy diet and physical activity, in multidisciplinary attention with a team of pediatric cardiologists, sports medicine specialist, physical educator, psychologist and nutritionists. Until this moment, 52% returned for 2 or more visits.
Conclusion: Prevention of heart disease must begin in childhood. Epidemiological transition in Brazil, with an increase in chronic diseases, emphasizes the need for prompt identification of the most common risk factors in the pediatric population, in order to plan preventive interventions accordingly. It is specially important to focus healthy habits during this crucial period, when lifelong habits are being formed.

208 (693). Posters (Date: 22nd May 2005)
Role of Myocardial Lymphangiogenesis in a Murine Model of Viral Myocarditis
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Background: Recent reports have emphasized the important role of inflammation in the pathophysiology of cardiovascular diseases. Lymphatic system is important in immune responses. However, the roles of lymphatic vessels in myocardium remain unclear.
Objectives: This study was designed to examine the role of myocardial lymphangiogenesis in a murine model of viral myocarditis induced by encephalomyocarditis virus infection (EMCV).
Methods and Results: Four-week-old DBA/2 mice were inoculated with EMCV (day 0). The hearts were fixed in 10% formalin, embedded in paraffin, sectioned, and analysed, performing immunohistochemical staining with anti-VEGFR-3 antibodies or anti-prox-1 antibodies on day 1, 3, 4, 5, 7, 9, 12, 14, 90. In addition, we examined the effects of VEGF-C156S or VEGFR3-Fc on survival, myocardial injuries, and hemodynamics in this model, using adenoviruses gene transfer. Immunohistochemical staining for VEGFR-3 and prox-1 resulted in successful labeling of lymphatic capillaries in myocardium. VEGF-C156S and VEGFR3-Fc proteins were successfully expressed in myocardium.
Conclusions: Myocardial lymphatic vessels were successfully determined by immunohistochemical staining. These findings provide new insights into the role of myocardial lymphangiogenesis in the pathophysiology of viral myocarditis, including left ventricular remodeling and diastolic dysfunction, and suggest therapeutic benefits by modulating lymphangiogenesis in viral myocarditis.

213 (696). Posters (Date: 23rd May 2005)
The Study of Waist Hip Ratio (WHR) in Patients with Coronary Artery Disease in Bagladeshi Population
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Objectives: To co-relate waist-hip ratio and body mass index with coronary artery disease in order to predict the coronary artery disease non-invasively by measuring BMI and WHR.
Methods: This was a cross-sectional prospective study.
Measurement of waist circumference was taken by standing up of the sample with the fit together and arms at the side. abdomen was relaxed. A tape was placed arround the waist midway between the bottom of the rib and the top of the hip bone. Tape should not be tight and measurement should not be top of the clothes. Hip circumference was determined by standing up straight but relaxed arm at the sides. For men, measurement should be done at the tip of hip bone and for women it was taken at the widest point between hips and buttocks.
Results: According to WHO figures for Asians, WHR for men ratio of <0.9 is safe and for women ratio of <0.8 is safe. Out of 207 male samples, 22 (10.6%) were within safe range and 185 (89.4%) were in non-safe range.
Correlation of WHR and Angiographic Features: In safe group, out of 22 normal was 11 (50.0%), minor CAD 1 (4.5%), SVD 6 (27.3%), DVD 1 (4.5%) and TVD 3 (13.6%). In non-safe group of 185 samples, normal 34 (18.4%), minor CAD 11 (5.9%), SVD 51 (27.6%), DVD 44 (23.8%), TVD 45 (24.3%).
Here the P value was 0.009, so the correlation was highly significant so that in non-safe group there was increased severity of CAD.
Correlation of WHR and Coronary Risk Factors: Out of 207 male samples, 72 were associated with risk factors in which 8 (11.1) were in safe group 64 (88.9) were within non-safe group. In safe group of 8 samples, Smoking 4 (50%), dyslipidaemia 3 (37.5%) and family history of IHD was 1 (12.5%). In non-safe group of 64 samples diabetes mellitus 6 (9.4%), smoking 29 (45.3%), hypertension 17 (26.6%) and dyslipidaemia 12 (18.8%). Here the P value was 0.017 which was significant so there was significant correlation between WHR and angiographic risk factors.
Discussion: WHR is an important tool that helps to determine the overall health risk. People with more weight arround waist are at greater risk of lifestyle related disease such as heart disease and diabetes than weight arround hips. It is a simple and useful measure of fat distribution. (Medindia.net 2003). The study of middle aged adults showed overall that WHR and BMI were both moderately strongly associated with incident of CHD in women, where as in men, WHR showed a somewhat stronger positive association with CHD than did BMI. (Aron R. Folsom et al. 1998).
A useful index of body fat distribution was the ratio of waist girth to hip girth. Elevared levels of this ratio were associated

Table: Correlation between WHR and angiographic findings:

			ANGIOGRAPHIC DIAGNOSIS					TOTAL
			NORMAL	Minor CAD	SVD	DVD	TVD	
	Safe	Count	11	1	6	1	3	22
		% within WHR	50.0%	4.5%	27.3%	4.5%	13.6%	100%
		% within diagnosis	24.4%	8.3%	10.5%	2.2%	6.3%	10.6%
		% of Total	5.3%	0.5%	2.9%	0.5%	1.4%	10.6%
	Non-safe	Count	34	11	51	44	45	185
		% within WHR	18.4%	5.9%	27.6%	23.8%	24.3%	100.0%
		% within diagnosis	75.6%	91.7%	89.5%	97.8%	93.8%	89.4%
		% of Total	16.4%	5.3%	24.6%	21.3%	21.7%	89.4%
TOTAL		Count	45	12	57	45	48	207
		% within WHR	21.7%	5.8%	27.5%	21.7%	23.2%	100.0%
		% within diagnosis	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	21.7%	5.8%	27.5%	21.7%	23.2%	100.0%

Table: Correlation between WHR and coronary risk factors:

			CORONARY RISK FACTOR					TOTAL
			Diabetes mellitus	Smoking	Hypetension	Dyslipidaemia	F/H of IHD	
	Safe	Count		4		3	1	8
		%within WHR		50.0		37.5	12.5%	100.0%
		%within risk factor		12.1%		20.0%	100%	11.1%
		%of Total		5.6%		4.2%	1.4%	11.1%
	Non-safe	Count	6	29	17	12		64
		%within WHR	9.4%	45.3%	26.6%	18.8%		100.0%
		%within risk factor	100.0%	87.9%	100.0%	80.0%		88.9%
		%of Total	8.3%	40.3%	23.6%	16.7%		88.9%
TOTAL		Count	6	33	17	15	1	72
		%within WHR	8.3%	45.8%	23.6%	20.8%	1.4%	100.0%
		%within risk factor	100.0%	100.0%	100.0%	100.0%	100%	100.0%
		%of Total	8.3%	45.8%	23.6%	20.8%	20.8%	100.0%

with both an increased risk of diabetes, (Rimm A., et al. 1983), and hypertension (Kalkhoff R.K. et al. 1983).
Subsequently others have found WHR to be associated with clinical evidence of coronary heart disease. An association has been found between WHR and myocardial infarction. (Larsson B, Svardsudd K, et. al. 1984). WHR is an important risk factor for CAD that independent of overall obesity and to some extent independent of the amount of fat in the abdominal area. ((Hartz, A., 1990).
Conclusion: In our study of a part of bangladeshi population, there was significant correlation of WHR with coronary artery disease and coronary risk factors. By simply measuring the waist and hip circumference, we can predict about coronary artery disease in our population and simple measures like lifestyle modifications regarding dietary habit and physical activities and adequate control of other coronary risk factors may reduce the increasing incidence of coronary artery disease in our country.

214. Poster (Date: 23rd May 2005)
Education Level and the Metabolic Syndrome in Obese and/or Hypertensive Subjects - Screening at Primary Health Care in Hungary
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Low education level and poor socioeconomic position could be associated with increased risk for chronic diseases. The aim of the study was to evaluate the relationship between education level and clinical features characteristic of the metabolic syndrome in subjects cared by GPs in Hungary. The screening procedure was implemented to detect hyperinsulinemia (serum fasting insulin >15 μU/ml and/or postloading [120 min after 75 g OGTT] insulin >45 μU/ml), therefore, subjects (n=1041, age: 20-65 years, men/women 432/609) exhibiting at least one of the following inclusion criteria were screened: obesity (BMI >30.0 kg/m^2), elevated waist-hip ratio (WHR) [>0.85 in women, >0.90 in men], hypertension (subjects with antihypertensive treatment or actual blood pressure $\geq$140/90 mmHg) or positive family history for diabetes, obesity, hypertension and cardiovascular events. Education levels (low: primary school, middle: high school, high: university) of screened subjects were assessed by a questionnaire (n=1002). Although mean age of subjects in subgroups were comparable, women with low education level (n=222) had significantly ($p<0.001$) higher BMI (32.96±5.79 kg/m^2) and elevated WHR (0.87±0.06) than women with middle (n=280; BMI: 31.35±5.52 kg/m^2; WHR: 0.85±0.07) or with high education level (n=86; BMI: 30.40±5.45 kg/m^2; WHR: 0.83±0.07, x±SD). Men with low education level (n=114) had significantly higher BMI (32.98±4.79 kg/m^2) and elevated WHR (0.97±0.07) than men with high education level (n=84; BMI: 30.35±4.46 kg/m^2, $p<0.001$; WHR: 0.95±0.08, $p<0.05$). In the total cohort (n=1002), the prevalence of hypertension was significantly ($p<0.05$) higher in subjects with low (27.6 %) and middle (38.5 %) than high (15.6 %) education level ($p<0.05$). Higher BMI and elevated WHR as well as higher prevalence rate of hypertension were associated with lower education level in a large cohort of subjects at risk for the metabolic syndrome.

216 (698). Posters (Date: 22nd May 2005)
Changes in Coronary Death Rates in Two High Risk and Two Low Risk Countries
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Aim: To study whether the changes in coronary mortality have been similar in two high risk countries, Norway and Finland, and two low risk countries France and Greece.
Methods: The data have been taken from the database of the World Health Organization (www.who.dk). The mortality rates are age-adjusted for age 0-64 years. The percent daily smokers refer to the age 15+ and percent of total energy from fat is based on wholesale data.
Results: The decline in cardiovascular mortality in Finnish men is 69% from 1970 to 2000. The corresponding figures in Norway, France and Greece were 70%, 48% and −37% (that is an increase). In women the figures were 71%, 52%, 67% and 0%. It is striking that the mortality rate in Greek men now is higher than that in Norway and that in women the mortality rates now are the same. The prevalence of smoking has declined the last 10 to 20 years in men, whereas in women the changes have been small. The percentage of total energy from fat was highest in Norway and smallest in Greece in 1970. In 2000 it is highest in France and lowest in Finland.

Table: Ischaemic heart disease mortality per 100 000 in age 0-64 years, age-adjusted.

	MEN				WOMEN			
	1970	1980	1990	2000	1970	1980	1990	2000
Finland	209	170	110	65	38	27	18	11
France	40	39	28	21	9	7	5	3
Greece	38	54	53	52	10	10	10	10
Norway	117	108	82	35	21	19	18	10

Conclusion: The cardiovascular mortality has been steadily declining during the past 30 years with the exemption of Greece where the rates have been strikingly unchanged. The smoking prevalence was distinctly higher in Greek men, whereas in women prevalence has been highest in Norway. Percent of total energy from fat have changed somewhat but not in a magnitude and direction that can offer an explanation for the contrast in Greece and the other three countries. It is warranted to further study this contrast.

221 (684). Posters (Date: 23rd May 2005)
Trends in Cardiovascular Risk Factors in Republic of Ireland Between 1998 and 2002 from Surveys of Lifestyle, Attitudes and Nutrition
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Objective: Ireland has persistently high premature mortality (160 deaths per 100,000) from Coronary Heart Disease (CHD), (average of 108 in the (Old) European Union). We examine here prevalence of self-reported rates of hypertension, high cholesterol, stroke, angina and heart attack in respondents over 55 years from Surveys of Lifestyle, Attitudes and Nutrition (SLÁN) in 1998 and 2002 according to age, sex and means-tested general medical services (GMS) eligibility.
Methods: SLAN is a representative survey of Irish adults (n = 1754, SLÁN 02, n = 1634 for SLÁN 98). Chi squared analysis of bivariate data and multi-variate logistic models were undertaken.
Results: As shown in table 1, prevalence is higher in males and according to GMS status for all conditions, and overall has changed little over time, the exception being reported high cholesterol, which has increased since 1998, especially for GMS respondents.

In a logistic regression model, those with normal BMI were less likely (OR=0.45; 95%CI 0.29, 0.70) and increased age more likely (OR=1.03; 95%CI 1.01, 1.04) to report any of the five conditions. In the final model however only Males (OR=1.62; 95%CI 1.13, 2.32) or those taking regular prescribed medication (OR=10.79; 95%CI 7.27, 16.03) were more likely.
With hypertension only as the outcome variable, those with raised BMI (OR=2.97; 95%CI 0.184, 0.479, those above recommended alcohol limits (OR=1.6; 95%CI 1.10, 2.33) those taking prescribed medication (OR=8.18; 95%CI 5.05, 13.25) were more

Table 1: Illnesses diagnosed by GP

	SLÁN 02 (n = 1745)			SLÁN 98 (n = 1634)		
	Total (%)	**Male (%)**	**Female (%)**	Total (%)	Male (%)	**Female (%)**
Angina	11	15	7	11	13	9
Heart Attack	6	9	4	6	8	4
High BP	29	27	30	28	25	31
Stroke	3	4	2	3	4	3
High Chol	16	15	18	12	10	13
	GMS			GMS		
	Yes	**No**		Yes	No	
Angina	14	5		15	6.	
Heart Attack	8	3		7	4	
High BP	31	27		33	24	
Stroke	5	5		5	2	
High Chol	17	16		9	16	

likely to report the condition while those with excellent/good self-rated health were less likely (OR=0.60; 95%CI 0.38, 0.95).
Discussion and Conclusions: The prevalence of cardiovascular conditions in older Irish people remains similar. The overall GMS eligibility pattern suggests persistent class gradients to care access. However the higher proportion reporting high cholesterol levels may be due to improved detection through the Cardiovascular Strategy and improved GMS eligibility to those over 70 irrespective of income, in 2001.

223 (702). Posters (Date: 24th May 2005)
High Long Term Compliance to Treatment with Beta-Blockers and Angiotensin Converting Enzyme Inhibitors after Acute Myocardial Infarction
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Background: Most patients benefit from treatment with beta-blockers and angiotensin converting enzyme (ACE) inhibitors after acute myocardial infarction (AMI). However, studies analyzing the use of these treatments are often conducted on selected populations and little is known about long term compliance. In this study we analyzed the use of beta-blockers and ACE inhibitors in an unselected population of all patients discharged after AMI in Denmark 1995-2002.
Methods: Patients with first admission for AMI discharged from hospital 1995-2002 were identified from the Danish National Patient Registry. Patients aged over 30 years, who were alive 30 days after discharge, were included in the study. Information about dispensing of beta-blockers and ACE inhibitors from pharmacies was obtained from the Register of Medicinal Product Statistics, a nationwide database covering all pharmacies in Denmark, and long term use was established for each patient.
Results: The total of 71,515 patients had first admission for AMI, and 55,315 were alive 30 days after discharge and included in the study.
Beta-blocker treatment was initiated within 30 days of discharge in 32,259 patients, or 58%. Additionally 10% of patients started beta-blocker treatment from 30 days to one year after discharge. The mean proportion of days covered (PDC) with beta-blocker was 74%. Within 3 years 42% of patients had not experienced a pause of 30 days or more and 69% was without at pause of 180 days or more.
For ACE inhibitors 16,068 patients started treatment within 30 days from discharge, or 29%. In addition 12% of patients received ACE inhibitors from 30 days to one year from discharge. The mean PDC with ACE inhibitor was 83%. After 3 years of observation 55% of patients had not experienced a pause of 30 days or more and 81% was without a pause of 180 days or more.
Conclusions: If treatment with a beta-blocker and an ACE inhibitor is initiated in relation to a myocardial infarction the long term compliance is high. If treatment is not initiated in relation to the infarction the chance of starting treatment later is very low. The study demonstrates the importance of initiating correct long term prophylactic treatment in all patients with an AMI.

225 (704). Posters (Date: 23rd May 2005)
Detection of Left Ventricular Diastolic Dysfunction in Asymptomatic, Normotensive, ETT Negative Newly Detected Type-2 Diabetic Patients by Doppler Echocardiography
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Objective: To detect left ventricular diastolic dysfunction (LVDD) in asymptomatic, normotensive, non-ischemic, uncomplicated newly detected type-2 diabetic patients.
Methods: During January 2003 through November 2003, 32 (22 men) newly detected type-2 diabetic and 30 non-diabetic age matched subjects were studied without any evidence of complication or associated disease. All patients had negative ETT with normal global LV function. LVDD was evaluated by Doppler echocardiography by using various velocities and time intervals of mitral inflow and pulmonary venous flow. In transmitral flow, peak velocity of E and A waves, deceleration time (DT) of A wave, Isovolumetric relaxation time (IVRT) and duration of A wave were measured. In pulmonary venous flow, peak velocity of S, D and AR waves, duration of AR wave was measured. The staging of LVDD according to severity is delayed relaxation, pseudonormalization and restrictive feeling pattern.
Result: LVDD was found in 18 (56%) subjects. All of which had delayed relaxation, no subject was found to have pseudonormal or restrictive feeling abnormality. In control group, only 3 (10%) subjects had delayed relaxation ($p<0.001$).
Conclusion: LVDD present in significant number in the entry point of type-2 diabetes mellitus who are free of clinically detectable heart disease. So, it is suggested that all patients of newly detected type-2 diabetes mellitus should be routinely screened for LVDD to detect early phase of diabetic cardiomyopathy and appropriate therapeutic intervention should be taken to arrest or reverse the process.

226 (705). Posters (Date: 23rd May 2005)
Prevalence of Risk Factors for Coronary Heart Diseases among Health Professionals in Aloysio de Castro State Cardiology Institute
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Aims: To assess the prevalence of risk factors for coronary heart diseases among health professionals in ''Aloysio de Castro'' State Institute of Cardiology, comparing it to the degree of knowledge about these factors.
Stuff and Method: A total of 370 health professionals in Aloysio de Castro State Institute of Cardiology were interviewed, and information was gathered about the prevalence of smoking, inadequate alimentary habits, sedentary life, and the degree of knowledge about these risk factors in different health professions.
Results: The prevalence of smoking was 20.54% among all professionals; 10.34% among physicians; 9.09% among nurses; and 30.76% among nutritionists, even though the level of knowledge about the tobacco addiction and risk was 98.91% among all professionals, and 100% among physicians, nurses and nutritionists. The prevalence of inadequate alimentary habits was 77.3% among all professionals; 60.34% among physicians; 75.75% among nurses; and 61.53% among nutritionists, even though the level of knowledge about this risk factor was 96.21% for all professionals, 94.82% among physicians, 100% among nurses and 100% among nutritionists. The prevalence of sedentary life was 56.21% for all professionals; 50% among physicians, 48.8% among nurses; and 46.15% among nutritionists, even though the level of knowledge about unhealthy food and sedentarism

was 97.83% for all professionals, 98.27% for physicians, 93.93% for nurses, and 100% for nutritionists.
Discussion: We found that the prevalence of risk factors for coronary heart diseases is in disagreement with the level of knowledge about these factors in the group we studied. This fact points to the necessity of identifying the aim-population for special actions of health education, in keeping with the risk factor to be approached, aiming at improving the efficacy of these actions.

229 (708). Posters (Date: 22nd May 2005)
Coronary Risk Factor Profile in Patients with Ischemic Chest Pain with or without Coronary Artery Disease
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Objective: To see coronary risk factor profile in patients with ischemic chest pain with or without coronary artery disease.
Methods: A cross sectional study was carried out in the department of cardiology, Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh from July 1999 to June 2001. Patients clinically diagnosed or documented to have ischemic chest pain who underwent coronary angiography were taken as study subject and were grouped into chest pain with normal coronaries and diseased coronaries. Patients with any coronary anomalies, hypertrophied and dilated cardiomyopathy and any congenital heart disease were excluded from the study. Risk factor profiles of both group of patients were seen and compared.
Results: Among 152 patients 38 (25%, 32 males, 6 females) were in normal coronary artery group and 114 (75%, 104 males, 10 females) were in diseased coronary artery group. Mean age of normal coronary artery group was significantly less than diseased coronary group (47.84 8.5 vs 50.85 ± years). The mode of presentation in these patients were chronic stable angina (44.74% vs 46.49 %), angina equivalents (7.89% vs 1.75%), atypical chest pain (34.21% vs 1.75%), unstable angina(5.26% vs 20.17%), acute MI-Q (2.63% vs 17.54 %),acute MI-nonQ(2.63% vs 5.26%). Maority of patients had one risk factor but multiple risk factors were not uncommon. A good number of cases had no risk factors [6(15.79%) vs 13(11.40%)]. No significant difference in the number of risk factors were seen. The risk factor profile distributed between groups were dyslipidemia (39.47% vs 37.72%), hypertension (36.84% vs 44.74%), diabetes mellitus (23.68% vs 26.31%), smoking(39.47% vs 39.47%), BMI obesity(15.79% vs 8.77%), abdominal obesity(28.95% vs 17.54%), sedentary lifestyle(15.79% vs 17.54%), family history of coronary artery disease(5.26% vs 7.89%), type A personality(5.26% vs 4.38%). There were no significant difference between groups.
Conclusion: About ¼ th of patients with ischemic chest pain may have normal coronary artery. One or more risk factors are frequently present in both the groups. Neither all patients with conventional risk factors have coronary artery disease nor all patients without any risk factors have normal coronary arteries.

231 (710). Posters (Date: 23rd May 2005)
Cardiovascular Risk Factors Evaluation in a Rural Comumnity at Northeast of Brazil
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Objective: Integrate medicine students with the local community and the education system, in the discussion how to control cardiovascular risk factors at this level.
Method: Two lecturers from medical semiology, were involved in the training from the students i in the methodology used to evaluate cardiovascular risk factors (CRF), that included: standardized questionairy, height,weight,pulse, blood pressure and abdominal circunference measurements, and the capilar glicemia and colesterol determination.
Results: From the 122 subjects 78.7% were living at the local community (Monte Gordo). The majority 77% they were female; from all 31% they were alcohol users, 33% tabagist, and only 39.3% were doing some physical activities. From them 40.2% had hereditary antecedents for cardiovascular disease and in 36.1% the body mass index (IMC) was normal, while 32.5% were underweight and 26.2% obese. Also 31.15% were hypertenses and 9.1% had hypercolesterolemia.
Conclusion: The Health Market reach the objectives, with the participation from the medical students, and the importance from the cardiovascular risk factors were demonstrate.

232 (710). Posters (Date: 23rd May 2005)
Cardiovascular Risk Factors Evaluation in the Workers from a General Hospital
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Objective: Evaluate the frequency of cardiovascular risk factors in a group of hospital workers.
Method: Getting the data from the Ocupational Medicine Service, it was obtained from 445 workers, the following variables, referent to 2003: age, sex, occupation, tabagism, body mass index, blood pressure, glicemia and total colesterol.
Results: The age average was 34,58 years, with 74.8% women and 51% form the nursing area. Just 5.6% said to be tagist and 11.3% they were hypertenses. The colesterol and triglicerides was measured only in 96 subjects, being elevated in 40.6% and 9.2% respectivaly, but glicemia was determined in 398 workers and it was high in 2% from them. The body mass index (IMC) was normal in 55.2% from all subjects, against 30.8% underweight and 14% obeses. Looking at the age above 40 years, there was more female obeses (15.9%) than male people (7.8%). Hipertension was more frequent(62%) between the underweight and obese group. There was no difference in the colesterol levels when comparing normal weight (38.5%) and obeses (35.5%).
Conclusions: Despite to be people from health area, the frequency from the cardiovascular risk factors was elevated. Even being a descriptive study, it point out to the need of a medical program to control those risk factors as well complet the study from the epidemiologic point of view.

233 (711). Posters (Date: 22nd May 2005)
Clinical Profile of Patients Presented with Chest Pain with or without Coronary Artery Disease
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Objective: To see clinical profile of patients presented with chest pain with or without coronary artery disease.

Methods: A cross sectional study was carried out in the department of cardiology, Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh from July 1999 to June 2001. Patients clinically diagnosed or documented to have ischemic chest pain who underwent coronary angiography were taken as study subject and were grouped into chest pain with normal coronaries and diseased coronaries. Patients with any coronary anomalies, hypertrophied and dilated cardiomyopathy and any congenital heart disease were excluded from the study. Clinical profiles of both group of patients were seen and compared.
Results: Among 152 patients 38 (25%) were in normal coronary artery group and 114 (75%) were in diseased coronary artery group. Mean age of normal coronary artery group was significantly less than diseased coronary group (47.84 ± 8.5 vs 50.85 ± years). Normal coronary arteries were relatively more common in 4th decade (21.05% vs 13.16%). In normal coronary artery group male was relatively less (84.21% vs 91.23%) and female was relatively more (15.79% vs 8.77%). Patient with normal coronary arteries presented more with atypical chest pain [13(34.21%) vs 2(1.75%); p < 0.001] and less with unstable angina [2(5.26%) vs 23(20.17%) ; p < 0.05] and acute myocardial infarction- Q (AMI- Q) [1(2.63%) vs 20(17.54%); p< 0.05]. There were no significant difference between groups among other presentations like chronic stable angina [17(44.74%) vs 53(46.49%)], angina equivalents [3(7.89%) vs 2(1.75%)], AMI- nonQ [1 (2.63%) vs 6 (5.26%)].
Conclusion: Analysis of clinical profile revealed that patient presented with atypical chest pain is more likely to have normal coronaries and patient presented with acute events like AMI-Q, AMI- non Q, unstable angina and also stable angina are more likely to have disease coronary artery.

234 (712). Posters (Date: 23rd May 2005)
Trends of Risk Factors of Acute Myocardial Infarction in Estonia: Results from the Tallinn AMI Registry
T Laks, E Jõeste, O Pullissaar, K Karu

Objective of the study: The Tallinn AMI Registry was set up to assess frequency of risk factors and attack, incidence and mortality rates of Acute Myocardial Infarction (AMI) in capital of Estonia. Register covers the population aged 25-64 years official residents of Tallinn.
Method: The Tallinn AMI Registry follows the WHO MONICA project protocol in data collection and diagnostic evaluation of suspected AMI events.
Results: During the period 1991-1997 from men with AMI smoked 28% and from women — 10% (p<0.05); previously or newly diagnosed diabetes was in 7 % men and 18% women (p<0.05); arterial hypertension accordingly in 29% men and 38% women (p<0.05) and hypercholesterolemia (total cholesterol (TChol) >5.2 mmol/l) in 58% men and 56% women (p>0.05). From 1991 till 1997 number of men smoked decreased from 36 to 29% (p<0.05) and women from 13 to 10% (p<0.05); diabetes increased in men from 6 to 11% (p<0.05) and decreased in women from 22 to 21% (p>0.05); arterial hypertension in men with AMI increased from 18 to 34% (p<0.05) and in women from 18 to 38% (p<0.05). During the study period TChol increased in men from 4.9±1.0 (in 1991) to 6.6±0.8 mmol/l (in 1997) (p<0.05) and in women accordingly from 4.3±1.0 to 7.5±0.9 mmol/l (p<0.05). In women TChol was in 1991 lower (p<0.05) but in 1997 higher (p<0.05) than in men.
Discussion and Conclusion: Frequency of traditional risk factors of AMI was high in both sexes. During the period 1991-1997 in Estonia smoking, diabetes, arterial hypertension or hypercholesterolemia were fixed in 67% women and 59% men (p<0.05). High attack and mortality rates of AMI in both, men and women, may be linked to high rate of risk factors in AMI patients and population of Estonia.

235 (713). Posters (Date: 24th May 2005)
Evaluation of Factors Effecting to Reach Cholesterol Target Levels in Patients with Lipid Lowering Therapy in Hungary
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Objective: To analyze the risk status of patients receiving long term lipid lowering therapy, and the rate of achievement of target level in a Hungarian multicenter trial.
Method: The investigation was performed in January and February of 2004 involving general practicioners and specialists (cardiologists, lipidologists). Applying a questionnaire we asked for risk factors and the further implementations in the knowledge of results of each doctor' 10 consecutive patients of receiving lipid lowering therapy for at least one year.
Results: LDL target levels accepted by the Hungarian Therapic Consensus Conference was achieved by 22% of GP's patients and 27% of specialists' ones, averagely the 24% of patients. According to risk stratification, the 83% of patients receiving lipid lowering therapy were at high risk, and 79% of this patients did not reach the suggested target level of total blood cholesterol. In 54 % of patients not achieving target level the doctors continue the therapy without any modification, which means that they give up reaching the target level and its benefits in these patients. When considering therapy modification, the doctor intended a dose increase in 61%, change of drug in 31% of cases, and rarely combination therapy.
Conclusion: While only a quarter of patients receiving lipid lowering treatment achieved the target levels, along with wide spreading of this kind of therapy further efforts should be made in order to achieve the levels defined in guidelines with dose increase or combination of appropriate drugs.

236 (714). Posters (Date: 22nd May 2005)
Gain in Life Expectancy in Norway if Ischaemic Heart Disease was Eliminated

Aim: The mortality from ischaemic heart disease peaked around 1970 in Norway. In 1990 the mortality was 19% lower in men and 18% lower in women (www.who.dk). I estimated the gain in life expectancy in 1970 and 1990 if ischaemic heart disease was eliminated.
Method: I used register data from Statistics Norway covering the total population in 1970 and 1990. These data were linked to the National Death Registry. One-year mortality was estimated in one-year age groups and the life expectancy was calculated. Then life expectancy was calculated with the mortality from ischaemic heart disease set to zero.
Results: In men the percentage gain in life expectancy reflected the percentage decline in ischaemic heart disease mortality. In women gain was less than the decline in mortality. The gain in years before age 75 was 2.05 in 1970 and 1.51 years in 1990 for men and 0.62 and 0.50 years in women. It is furthermore noted that if ischaemic heart disease were eliminated in men, their life expectancy would still be somewhat lower than that in women.

Results:

MEN					WOMEN			
Age (years)	Life expectancy (years)		Gain (years)		Life expectancy (years)		Gain (years)	
	1970	1990	1970	1990	1970	1990	1970	1990
0	71.96	74.08	3.91	3.24	77.83	80.07	2.08	1.99
30	43.51	45.08	4.01	3.30	48.66	50.69	2.10	2.00
50	25.30	26.51	3.79	3.18	29.68	31.61	2.12	2.01
75	8.18	8.55	1.86	1.73	9.66	11.03	1.46	1.49

Conclusion: The elimination of ischaemic heart disease would result in more than 3 years gain in life expectancy in men and around 2 years in women.

237 (715). Posters (Date: 23rd May 2005)
Risk of Factors for the Development of Cardiovascular Disease in Health Care Professionals.
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Objectives: To raise the factors of risk of cardiovascular disease in health care professionals group.
Method: Opened prospective study, to determine the incidence of risk factors to CVD in health care professionals. The casuistry was 114 professionals of the chosen area of the health of random form; they signing an consentient term of free and clarified assent. The volunteer was delivered a questionnaire that contained 20 questions of multiple choice about the risk of factors for CVD.
Results: 73%(84) were female; the age varied of the 19-64 years old with mode 26 years; the weight varied of 45 to 102Kg and mode 63Kg ; the height varied of 1,50m to 1,92m and mode 1,62m; how about the professionals: 21%(24) were doctors, 18%(21) nurses. 25%(29) of the 114 participants were working in the emergency rooms and ICUs and 75%(85) was of daily clinical. 57%(65) consider under stress and 43%(50) had attributed it strict stress to the work. Tobaccos was present in 10%(12), in average 10 cigars per day more than 10 years;22%(25) practices weekly regular physical activity; 4%(5) is in the menopause, 2.6%(3) were doing hormonal replacement and 20%23) use contraceptive; 9%(10) had dislipidemia and 39%(40) never carried through laboratory tests; only 0.8%(1) had diabetic and 2.6%(3) hipertension; 7%(8) already arrhythmias had had cardiovascular disturbs; 74%(85) had familiar antecedents CVD: 34%(39)of this familiars had died for cardiovascular cause. 0,70 was the average of the index waist/ hip and in 10 participants(9%) the index was high than 0,94.
Discussion and conclusion: The periodic control of the risk factors and laboratorial tests can diminish the morbidity and mortality of the coronary arterial disease(CAD); according to AFFIRM (Acute Myocardial Infarction Risk Assessment Factor in Brazil) study published in 2003(PIEGAS et al), the main factors of risk associates with the acute myocardial infarct, in Brazil: tobaccos, diabetes mellitus and obesity in the abdominal region. Until this moment, are poor the number of studies that tell us these factors of risk in health care professionals. This persons has specific ambient factors such as: extreme assistance load, privation of sleep and greater exposition to stress situations like the death and suffering of familiars. In our study, the health care professionals, for its younger age, had present factors of risk as more incident as stress, lack of physical activities and familiar antecedents, when compared with the classic factors (obesity, tobaccos, hypertension and diabetes) of cardiovascular risk.

238 (715). Posters (Date: 23rd May 2005)
Evaluation of Cardiovascular Factors of Risk in Users of a Public Park in Brazil
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Objective: This study it had as objective to evaluate the cardiovascular risk factors in users of the Independence Park, in São Paulo city, during one month of 2004.
Methods: The adopted methodology was quantitative and descriptive from the spontaneous demand of an event of the university goes to the Park. After the consent form with free and clarified assent, the users of the park had been evaluated how much to variables related to the presence of cardiovascular factors of risk.
Results: The population consisted of 127 people, 66 (51.96%) were female and 61 (48.03%) male; the age varied of 27 to 87 years, with predominance 47 to 77 years (62.20%); 47 (37%) had familiar antecedents for cardiovascular illnesses; 107 (84,25 %) were unaware of to have or not dyslipidemia; 111 (87.40%) was unaware of to be carrying or not of diabetes mellitus; 41 (32.28%) had hypertension and 86 (66.71%) were unaware of to be carrying of this pathology; 35 (27.55%) used tobaccos; 86 people (67.71%) had to practice physical activity regularly; 56 (44.09%) had under stress; in menopause women group, 22 (56.41%) did not take hormonal replacement; the men had presented bigger waist/ hip index of the one than the women, however a biggest index of arterial hypertension in the woman was observed.
Conclusion: We verify that the majority of the evaluated people practices physical activity regularly: they are not tobaccos users, are unaware of to be carrying of diabetes, arterial hypertension and dyslipdemia; the majority of the women in fertile age does not take oral contraceptive; however, the number of women with high arterial pressure levels was greater that verified in the men; the majority of the menopause women does not make hormonal spare use. For a more necessary evaluation, the evaluation of the individuals through laboratorial tests would be necessary, a time that the unfamiliarity of carrying such pathologies does not imply in the inexistence of the same ones.

239 (667). Posters (Date: 24th May 2005)
Risk Factors Management for the Prevention of Cardiovascular Diseases in High Risk Patients by Swiss Physicians
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Background: There is substantial scientific evidence showing that modification of risk factors (RF) can significantly reduce cardiovascular morbidity and mortality. The objective of this study was to evaluate the cardiovascular RF management in high-risk (HR) patients (P) in Swiss daily clinical practice.

Patients and Methods: In a prospective survey carried out in 97 physicians across Switzerland during the first semester 2003, 7,520 P were recruited. Each practitioner was asked to record demographic data, cardiovascular risk profile and the current cardiovascular therapy for any consecutive patient seen over 2-5 following days. Among them, 1358 P (58% males) aged 67 + 12 y with established coronary heart disease (CHD) atherosclerotic cerebrovascular or peripheral artery disease and diabetic patients were considered at high Risk and included for analysis.
Results: The prevalence of major modifiable RF in these HRP was the following: Hypertension (69%), current smoking (20%), sedentary lifestyle (71%), overweight (66%), total cholesterolemia > 5.0 mmol/l (55%), triglyceridemia > 2.0 mmol/L (31%). Underuse of therapies was as observed for all major cardioprotective drugs. In addition, blood pressure > 140/90 mmHg was reported among 67% of F and 56% of M ($p<0.0001$) and LDL-chol > 3.0 mmol/L among 65% of F and 56% of M ($p<0.07$).
Conclusions: Despite a generous healthcare system, our survey shows a large underuse of proven drug therapies among HRP. Reinforcement of lifestyle interventions and optimal use of prophylactic drug therapies require more attention not only from physicians but also from patients and health care system.

240 (716). Posters (Date: 22nd May 2005)
Autopsy in Cardiology: How Often are Clinical Diagnoses Incorrect?
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In recent years, based on the mistaken assumption that newer diagnostic antemortem procedures, especially imaging techniques, have rendered the autopsy obsolete, it has fallen into serious disuse and disrepute. Data disproving this assumption are now emerging. The autopsy is still needed as a final test of the newer diagnostic techniques and as a means for integrating anatomic, physiologic, biochemical, and clinical features of new, as well as established, diseases.
In the past years, the number of hospital clinical autopsies have significantly decreased, with the risk of loosing some of the functions of this procedure, among which the evaluation of the diagnostic accuracy, which has been considered as a health care quality index, stands out. In this paper, the autopsy rate and the consistency between clinical diagnosis and autopsies in the University Clinic of Cardiology is studied, as well as its association to some potentially relevant factors. We reviewed 1544 autopsies performed in patients dying during a period of 11 years.
Each case was classified through consensus among a clinician and a pathologist into: mayor clinicopathological discrepancy, minor discrepancy or complete consistency to principal diseases and cause of death. The relationship between consistency and age, sex, average length of terminal stay in the hospital and diseases was analyzed. The mean age was 64.89 years, there were more men, and the average length of hospitalization was 4.7 days. The global consistency was in 86% pts for principal disease, and for causes of death was in 70% pts. In 29.4% cases a major discrepancy was observed. No differences were observed in the degree of consistency with respect to age, sex, average length of stay, but there were differences between principal diseases. There were no differences observed in the degree of consistency with respect to sex, average length of stay, but there were differences between age and the underlying cause of death. We concluded that the degree of concordance in this study was consistent with other studies.

248 (720). Posters (Date: 22nd May 2005)
Life Style Risk Prevalence and Pre-hypertension and in Scholars Adolescents from Fonseca, Niterói
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Sponsored by UFF/PROPP, Fundação Municipal de Saúde de Niterói, and FAPERJ

Keywords: adolescent, hypertension, obesity, life style.
Hypertension is a cardiovascular risk factor and may begin in childhood[1]. Yet, more than 20% of the Brazilian population is between 10 and 19 years. According to the 4th Task Force, blood pressure >120/80 mm Hg is prehypertension (PH) even if this figure is < 90th percentile[2].

Table 1: Adjusted Odds ratio of PH. Students aged 12 to 17, enrolled in public and private schools in a Niterói neighborhood: 2003-2004

Risk factors	SPH			DPH		
	OR	IC 95%	p-value	OR	IC 95%	p-value
Sex[1]	6.32	2.79—14,33	0.00	0.27	0.06—1.17	0.08
Age[2]	2.47	1.15—5.32	0.02	1.30	0.34—4.90	0.70
School■	2.15	0.90-5.14	0.08	2.37	0.49—11.38	0.28
Overweight/ obesity*	8.24	1.63—41.76	0.01	5.14	0.58—45.80	0.14
Waist circumference□	1.01	0.96—1.06	0.69	1.09	1.00—1.18	0.04
Not dieting[6]	1.74	0.86—3.52	0.13	3.13	0.81—12.11	0.10
Stress[7]	0.66	0.21—2.03	0.46	0.71	0.14—3.67	0.68
Sedentarism■	1.23	0.57—2.65	0.60	1.67	0.45—6.20	0.45

[1] Reference category (R): girls.
[2] R: 12-14 years.
■R: private school.
* R: Body Mass Index (BMI)<=90th percentile for Brazilian adolescents[4].
□Continuous variable.
[6] R: score >=1 in dieting scale of EAT 26[5].
[7] R: score< 4 in GHQ12 scale [6].
[7] R: at least 20 minutes per time, at least 3 times a week in the last 2 weeks [7].

Objective: To estimate the prevalence of life style indicators in students aged 12 to 17, enrolled in public and private schools in a Brazilian city, and to verify the associations with PH.
Methods: A questionnaire was applied, and anthropometrics and arterial pressure were measured in two occasions, in a sample of 457 students (2003/2004).
Results: The prevalence of *sedentarism* and *stress* was greater among girls; and prevalence of *not dieting*, greater among boys. The odds of a boy having Systolic PH (SPH) was 6,3 the odds of a girl, and of an adolescent with overweight/obesity, 8,2 times the odds of a normal weight adolescent. (table 1).
Discussion/conclusion: So far, there are no published studies on PH in Brazilians adolescents. Although a descriptive study, it showed that boys, overweight/obese and adolescents with 15-17 years have greater risk to have SPH. So do, students enrolled in a public school and those *not dieting*, even not statistically significant. These results indicate that a more precise definition of healthy adolescence may be necessary to better inform health related politics.
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249 (721). Posters (Date: 22nd May 2005)
Prehypertension Prevalence Among Adolescents-Students in Niterói, an Urban Brazilian city
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Sponsored by UFF/PROPP, Fundação Municipal de Saúde de Niterói, and FAPERJ

Keywords: adolescent, hypertension, obesity, life style.
Background: Systolic hypertension adolescence is associated to increased left ventricular mass[1]. Adolescent systolic blood pressure and pulse pressure are associated to carotid intima-media thickness in young adults[2]Adolescents with blood pressure <120/80 mm Hg (but >95th percentile) have prehypertension (PH), according the 4th Task Force[3].
Objective: To estimate the prevalence of PH, systolic prehypertension (SPH), diastolic prehypertension (DPH), isolated systolic prehypertension (ISPH) and wide pulse pressure (WPP: PP> 50mmHg) [2] in students aged 12 to 17, enrolled in public and private schools in Niterói.
Methods: A questionnaire was applied, and anthropometrics and arterial pressure were measured in two occasions, in a sample of 457 students (2003/2004).
Results: The prevalence considering the 90th plus the 95th percentile as defined by the 4th Task Force, was 4.2% for systolic BP and 3.7% for diastolic BP, lower than those estimated considering 120/80 mm Hg (table 1). The SPH, ISPH, and WPP prevalence was greater among boys; the SPH, ISPH prevalence, greater among overweight/obese [4]. 45.9% of the adolescents with WPP did not presented PH.
Discussion: The SPH, ISPH and WPP prevalence reached more than 20% of the boys. The SPH and the ISPH prevalence attained about 30% of the overweight/obese adolescents. About 50% of the adolescents presenting WPP didn't present PH. Those are important issues if these measures are confirmed as cardiovascular risk factors.

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Table 1: PH prevalence by gender and BMI (Body Mass Index). Students aged 12 to 17, enrolled in public and private schools in a Niterói neighborhood: 2003-2004

	Total		Boys		Girls	
	N	Prevalence (95%IC)	N	Prevalence (95%IC)	N	Prevalence (95%IC)
SPH	52	11.4 (8.7—14,8)	43	21.2 (15.8—27.5)	9	3.6 (1,6-6,6)
DPH	14	3.1 (1.8—5.2)	3	1.5 (0.3—4.3)	11	4.3 (2.2—7.6)
ISPH	47	10.3 (7.7—13.5)	42	20.7 (15.3—26.9)	5	2.0 (0.6—4.5)
SDPH	6	1.3 (0.77-2,18)	1	0.5 (0.1—1.43)	5	2.0 (0.6—4.5)
WPP	61	13.4 (10.5—16.9)	53	26.1 (20.2—36.7)	8	3.2 (1.4—6.1)
			BMI >P90		IBMI<=P90	
			N	Prevalence (95%IC)	N	Prevalence (95%IC)
SPH			7	29.2 (12.6—51.1)	45	10.4 (7.8—13.8)
DPH			6	25.0 (9.8—46.7)	8	1.9 (0.9—3.8)
ISPH			7	28.0 (12.1—49.4)	40	9.3 (6.8—12.5)
SDPH			3	12.5 (2.7—32.4)	58	13.4 (10.4—17.1)
WPP			1	4.2 (0.91—10.89)	5	1.2 (0.93—1.53)

251 (723). Posters (Date: 23rd May 2005)
Metabolic Syndrome in Postmenopausal Women
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Objectives: To evaluate the prevalence of metabolic syndrome in a group of postmenopausal women and their relationship with social factors.
Methods: We evaluated a prospective cohort of 101 postmenopausal women who consult as out patients in our postmenopausal unit. Metabolic syndrome was defined with ATP III criteria. We also evaluated education, smoking status, depression, physical activity and body mass index (BMI)
Results:

	Metabolic Syndrome			
	No n=81	Yes n=20		
Age	52.7±3.9	52.4±5.2		0.81
Education	17.3 %	5.0 %	0.25 (0.01—2.08)	0.16
Living alone	20 %	40.0 %	2.67 (0.82—8.69)	0.06
Smoking	9.9 %	10.5 %	1.07 (0 —6.39)	0.93
Depression symptom	68.8 %	100.0 %	1.36 (1.00—1.85)	0.19
Sedentary	49.4 %	60 %	1.54 (0.51—4.71)	0.39
IMC $\geq$25 Kg/m^2	46.1 %	100.0 %	1.57 (1.29—1.92)	<0.001

Conclusions: We did not fine any relationship between the presences of metabolic syndrome and the social factors that we studied in this cohort. The prevalence of metabolic syndrome was 19. . .8%. This figure represents a little less prevalence those other studies shown.

268 (742). Posters (Date: 22nd May 2005)
Physical Activity in Elderly Women and Blood Pressure Behavior During Exercise.
Olga Tairova, Paulo Carvalho, Joice Baungarten, Daiane Trentin, Alexandre Silvestrin

Background: It is now recognized that decrease of level of physical activity and as a result of that a fall of Functional Capacity (FC) during the process of aging is a common phenomenon.
Aim and methods: The aim of the present study was to evaluate the Functional Capacity and blood pressure response to acute exercise in women with age over 50 years (50-59; 60-69;70-79). The study group was composed by 68 sedentary and high-fit women. PAR-Q testing for analysis of possibility to participate in fitness-group was done in all active women before the training. During 3 consecutive days blood pressure measurements were made. Every woman underwent to maximal ergometric test (Bruce protocol) for analyse of Functional Capacity and blood pressure behavior. Each woman was submitted to subjective evaluation with questionnaire of individual possibility to execute daily tasks (Spirduoso,1995). The Student's t-test was used to compare averages between two groups. The Functional Capacity (VO2 max) was significantly higher among high-fit women with age 60-69 (29 ml/kg/min verse 25,.5 ml/kg/min). On third group composed by women with 70—79 years old the FC (VO2 max) was too significantly higher among the high-fit women than the sedentary 70-79 women (25.1 ml/kg/min verse 20.0 ml/kg/min). The data analysis showed that sedentary —life style take functional capacity down, especially among the older women (> 60 years) (observed by objective and subjective analyse). In sedentary group was observed the prevalence of arterial hypertension significantly higher compared with active group. Ergometric test of sedentary normotensive women showed an abnormal (hyperreative) behavior of blood pressure (increase of diastolic blood pressure more than 15 mm Hg) compared to active group (83.3% verse 11.2%).
Results: Based on these findings, one may conclude that it is very important to realize check-up in olders and we have to motivate a physical training for olders for maintain good physical daily activity and prevent cardiovascular diseases, particularly, hypertensive disease.

273 (747). Posters (Date: 24th May 2005)
Aspirin use Among U.S. Adults — Behavioral Risk Factor Surveillance System
UA Ajani, ES Ford, KJ Greenlund, WH Giles, AH Mokdad

Background: The role of aspirin in prevention of cardiovascular disease (CVD) and cardiovascular complications among people with diabetes has been examined. Healthy People 2010 objective calls for increasing proportion of people with diabetes aged $\geq$40 years who take aspirin at least 15 times/month.
Methods: Data from 2003 Behavioral Risk Factor Surveillance System was used to examine (i) the prevalence of aspirin intake, (ii) aspirin use among those with CVD and diabetes, (iii) current status with respect to Healthy People objective (5-16), and (iv) changes in aspirin intake from 1999.
Results: Daily or every other day aspirin use was reported by 36.2% of participants in 2003. Aspirin intake among those with CVD and diabetes was 82.8% and 62.6% respectively. The Healthy People 2010 objective of increasing the proportion of adults with diabetes aged $\geq$40 years who take aspirin regularly to 30% was achieved. The prevalence of aspirin intake was higher in 2003 compared to 1999 among all participants, those with CVD and diabetes (relative increase of about 20%, 12%, 36% respectively). Most participants (74%) reported cardiovascular reason for aspirin use. Among those without CVD or diabetes, the prevalence of aspirin intake increased with increasing number of CVD risk factors.
Conclusions: Regular aspirin use has increased over last 4 years. Greater use of inexpensive and easily accessible interventions to prevent cardiovascular events is encouraging. Increased effort to continue preventive uses of available treatment and reduction in risk by modifying other risk factors will help lower future disease burden.

274 (748). Posters (Date: 24th May 2005)
Health Protection and Promotion Program: A Large Multifactorial Prevention Program Worksite (2001-2004)

Introduction: The Health Department of Petrobras Energía S.A (PESA) developed a primary prevention program worksite.

The initiative had different phases and a research framework.

1. Epidemiology and Motivational Research: A number of 2800 employees were studied by the Health Risk Appraisal Program (software HPN, Version 6.0 The Healthier People Network, Inc.®). The qualitative research used a validated instrument developed for this purpose. The evaluation was conduced in Argentina, Peru, Bolivia, Ecuador and Venezuela. Cardiovascular risk factors had a big impact in the population: for Argentine employees the prevalence of Hypertension was 25%, Underweight 47%, Obesity 20%, Hypercholesterolemia 13%, Sedentarism 74%, Smokers 28%, Seat Belt used <90% 58 %.
2. Evidence Based preventive plan design: combined data from scientific evidence with the qualitative and epidemiology outcomes a few integrated preventive plans were design: health promotion on line (phone line for employees and their families), physical activity, healthy nutrition, health self-management, stress management, substance abuse prevention (includes tobacco).
3. Economic Evaluation: cost benefit analysis (Assurance and Employer perspective) was conducted and jointed with the Financial Department of PESA. The tangible benefit were the job journey gain because adverse event decrease (Cardiovascular Disease diabetes mellitus, Mental disorders). The TIR was 28%, (1.6 by 1 U$ Dollar), and cardiovascular events prevention had the 39% of the net present value.
4. Plans implementation: The implementation follows the principles of integration, consecutive implementation, fit locally with people motivation and preferences.
5. Outcome Research: The program became a Quality Improving System to prevent cardiovascular disease, accident, and to improve mental health.

A pool of quantitative, qualitative, clinic, and economic drivers were develop for this purpose.

275 (749). Posters (Date: 23rd May 2005)
Strategy of Preventive Cardio-vascular Disorders on basis Genetics Investigations
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More than 200 nuclear families (803 mans) among general population were investigated and familial cases arterial hypertension (FAH), cases of lipid disorders (hypercholesterinemia, hypertriglyceridemia, hypoalphacholesterinemia) were identified. Incidence of FAH was 2-7%, incidence of hypercholesterinemia, hypertrigliceridemia was 1%, incidence of hypoalphacholesterinemia was less1%.
According to clinical investigations, the incidence of FAH was 60% and patients of FAH needs special combinated antihypertensive treatment, for archivement normal level of BP. Echocardiographic investigation of 130 patients FAH was revealed enlargement index myocardium left ventricululi — 152,5, comparatively patients with non-familial arterial hypertention (NFAH) —132.4./ P< 0.01/.
Results of genetical investigations demonstrated, that prophilaxis of cardio-vascular disorders should be realized in families with aggregation factors risk and needs more intensive, aggressive strategy for achivement positive results.

282 (755). Posters (Date: 23rd May 2005)
Physique and Cardiovascular Functions of Rural South African Girls Aged 6 to 13 Years: Ellisras Longitudinal Growth and Health Study
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Background: Physique has been useful in assessing the outcomes of underlying growth and maturity processes, which leads to a better understanding of variation in both children and adults physique and their health. However, high endomorphy rating has been associated with high blood pressure in adults, which poses a serious threats to adult health status while this threats has received little attention in children [2]. The main objectives of this study were to determine the association somatotypes and blood pressure levels in 6-13 year old Ellisras rural girls, of South Africa.
Method: A total of 919 girls aged 6 to 13 years who were part of the Ellisras Longitudinal Study participated in the study. All children underwent measurements of stature, weight, body circumferences (calf, arm flexed and tensed), breadths (bi-epicondylar humerus and femur) and skinfolds (triceps, subscapular, suprapinale, medial calf) according to standard procedures of the International Society for the Advancement of Kinanthropometry (ISAK). An average of two diastolic and systolic blood pressure readings were taken with the child seated and rested for at least 25 minutes, with an electronic monitoring kit. The bladder of the Micronta device contains an electronic infrasonic transducer that monitors the pulse rate and blood pressure and displays them concurrently on the screen. All the subjects were somatotyped using the Heath-Carter anthropometric somatotype method. Frequencies and percentage frequencies for the somatotype categories were calculated at each measurement period. Somatotype ANOVAs for girls of different ages were calculated using SADs between adjacent interval to examine any significant changes in three-dimensional distances between individual and group somatotypes. Peasant moment correlation and regression where applied to test for any relationship and association between somatotypes and blood pressure.
Results: Mean endomorphy ranged from 2.5 to 3.5, mesomorphys ranged from 2.0 to 4.6 and ectomorphy ranged from 3.9 to 5.2 between the age of 6 to 13 years. There is a gradual increase in the somatotype component across the age. The girls dominated in the mesomorphic ectomorph and mesomorph-ectomorph to balanced ectomorph category. The SAD exhibit an insignificant increase in somatotype between adjacent age groups and there is a significant increase in the older age groups as compared to the younger age groups. Mean systolic blood pressure range from 88.8 to 105.5 mmHg from the age of 6 to 13 years. Diastolic blood pressure ranged between the age of 63.5 to 69.9 mmHg across the age range. Both systolic and diastolic blood pressure exhibits a slight insignificant increase from one age group to the other. Endomorphy correlate (r=0.37) well with systolic blood pressure than any other somatotype components at older age group children.
Discussion and Conclusion: The fact that endomorphy components and systolic blood pressure correlate better than other somatotype components raises a serious concern in this sample. The need to managed hypertensive individual is evident in this sample so as to combat this chronic disease at an early age. Follow up studies should investigate the relationship between blood pressure and dietary electrolytes (sodium, potassium, calcium), dietary protein, lipids and fibers, alcohol and total energy consumption of these children.
Acknowledgement: The financial support received from Vrije University, Amsterdam, Netherlands and the University of the North, South Africa, National Research Foundation and Medical

Research Council of South Africa for the Ellisras Longitudinal growth and Health study is thankfully acknowledged.

293 (759). Posters (Date: 23rd May 2005)
CHD Registers: Using Information Technology to Monitor and Improve the Management of Chd
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Introduction: There is great potential in Europe and North America to improve the management of and tackle treatment inequalities in Coronary Heart Disease (CHD).
As part of the Scottish Executive National CHD Demonstration Project, a nationally innovative regional computerized CHD Register of those with or at risk of CHD has been developed in a region of Scotland. This register can store, receive and send information from a variety of national and local databases/clinical systems pertaining to people with or at high risk of CHD. The Register contains data, stored over 109 fields, on an individual's demographic profile, CHD risk factors, pharmacological therapies, laboratory results, lifestyle behaviours, access to services and previous CHD-related medical history.
Methods: To demonstrate the potential uses of the CHD Register, we present an analysis of data recorded prospectively on the CHD Register as part of clinical practice.
Findings: Based on data for the Paisley region (n=85000), over the initial 14 months operation (Sept 2003-Nov 2004), the number of patients recorded in family practices as having CHD has increased by 839% (559 to 4694)/0.69% to 5.8% of the local population. The percentage of these patients with smoking status recorded has risen during this period from 33% to 74% (p=0.000), while current smokers with smoking status recorded has risen from 38% to 75%.The number of suitable patients prescribed: beta blockers increased 700% (335 to 2347), though the recorded rate of patients prescribed these drugs fell significantly (60% to 50%) (p=0.002); similarly patients prescribed antiplatelets increased 826% (352 to 2910) but reported prescription rates remained similar (63% to 62%) (p=0.317). The number of patients with cholesterol measurements recorded increased 857% (274 to 2347) but reported prescription rates demonstrated no significant change (49% to 50%) (p=0.317). The number of patients on lipid lowering treatment increased 906% (347 to 3145) but did not increase significantly (62% to 67%) (p=0.063).
Conclusion: The CHD Register has allowed recording of key risk factors and provision of evidence-based therapies to be monitored and increased recording of CHD status. While the number of CHD patients with key risk factors and medications recorded has increased dramatically, the Register has identified that rates of evidence-based cardiac care have not increased.

296 (761). Posters (Date: 22nd May 2005)
Change on Behavior Concerning Tobacco Among 7th to 9th Graders at Lara State, Venezuela. Global Youth Tobacco Survey GYTS 2000 and 2003
Magda Sanchez, Ricardo Granero
PROEZA 40
ASCARDIO

The Global Youth Tobacco Survey (GYTS) done in Lara State, Venezuela (2000 and 2003) provides valid data that allows inter and intra-country comparisons, aimed at the design and evaluation of preventive strategies, targeting ''the global youth'' while taking into consideration local peculiarities.
Method: GYTS is a cross sectional school-based two-stage cluster sample survey, designed to produce a representative sample of students in grades 6 to 9 at state level. The instrument seeks information on students' attitudes, knowledge, and behaviors related to tobacco use; exposure to: environmental tobacco smoke, prevention programs, mass media, marketing issues; and seek information on measures to control tobacco sales. GYTS was applied by a multi-sector coalition: public, private and the organized civil society in the Venezuelan state of Lara in 2000 and 2003.
Results: Schools and students participation was >80% GYTS 2000 and 2003. The change in selected important indicators are presented:

	2000			2003		
Percentage of students that:	Total	Male	Female	Total	Male	Female
ever smoke a cigarette even a puff	22.8	25.2	19.4	22.8	24.2	20.7
smoke first cigarette before age of 10	18.9	21.5	16.8	15.7	16.7	15.4
smoke at least in 1 day in the last 30 days	8.4	8.9	7.0	8.3	9.2	7.2
did Chimó in at least 1 day in the last 30 days	10.6	14.2	7.1	9.5	12.2	5.9

Conclusions: The tobacco epidemic of Lara has remain unchanged, this could be attributed to pro-tobacco marketing including free sample distribution, and lack of effectiveness of the laws to prevent tobacco sales to minors. The tobacco prevention control scenario is complex, and demands the use of GYTS results as evidence to support the necessary changes on policies and programs.

298 (618). Posters (Date: 22nd May 2005)
Atherosclerosis of Carotid Arteries in Patients with Low HDL Cholesterol
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Purpose: Low HDL-C is the most frequent disturbance of lipids in the developed countries. Associated with the high fraction of LDL-C, and also without it, it represents a high risk for the development of atherosclerosis of coronary and carotid arteries.
Matherial and Methods: In the Laboratory of Noninvasive Angiology at the Institute of CVD in Sremska Kamenica 120 patients were investigated (76 males, mean age 53.24 years and 44 females mean age 54.21 years). Echo-Doppler investigation (color triplex scan) of carotid arteries was performed on the Siemens Sonoline Versa Pro apparatus. Diagnostic criteria for atherosclerosis of carotid arteries were as follows: intima-media thickness (IMT) from 1.0 to 2.0 mm, I or mild degree-stenosis (1-45%), II or moderate degree-stenosis (46-75%), III or severe degree stenosis (76-99%) and IV degree or occlusion.
We found a very high degree of significance between the low HDL-C level and the carotid artery disease (CAD) in both sexes (males graph, $p<0.01$, females graph. $p<0.01$).

Results of testing with parameter and non parameter tests shows a very high degree of significance between risk factors and CAD.

Conclusions: In the group of patients with the normal HDL-C level, ultrasonographic finding was normal in 100% of the cases of both sexes.

Low HDL-C was associated with atherosclerosis of carotid arteries in 100% of male patients.

A very high degree of significance ($p<0.01$) was found in serum HDL-C between the groups with normal and pathologic finding in both sexes.

Risk of the most severe form of carotid atherosclerosis in case with low HDL-C was greater 75 times in males and 20 times in females.

IMT also showed a high degree of positive correlation with the HDL-C lowering in both sexes.

303 (766). Posters (Date: 24th May 2005)

Equal Opportunities for Sociodemographic Minorities in Cardiac Rehabilitation

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Background: Women, elderly men and foreigners form an important fraction of nearly one third of patients in our ambulatory cardiac rehabilitation program (CR). This study describes their risk profile, course and benefit during CR.

Methods: From 3/99 through 8/03 a total of 1061 pts completed the 12 week outpatient CR. Among those there were 155 women (W 15%), 87 men >age75 (EM 8%), and 88 participants speaking a foreign language only (FL 8%).

Before and after CR all pts underwent a bicycle exercise test as well as assessments of risk factors and quality of life. The comprehensive program consisted of 32 exercise sessions of 2 hrs each with relaxation components, and of 9 additional structured educational and counseling group seminars.

Results: The rate of previous revascularisation (CABG and/or PCI) was 69% in the total population but lower in all subgroups (W 57%, EM 51%, FL 47%). LVEF was the same in all groups (54-55%). When compared to the total population FL were younger (55 vs 62 y) and had more diabetes (22 vs 15%), whereas more W were persistent smokers (32 vs 19%) and EM had fewer risk factors. W and FL had a lower physical capacity at baseline (73 and 71 vs 79% of target value adapted for age, sex and weight), while there was a comparable relative increase of 14-26% in all groups. Parameters of quality of life also improved similarly in all groups. Interruptions of CR due to cardiac complications were more frequent in W (3 vs 1%), those for noncardiac reasons were more frequent in FL (13 vs 5%). Differences mentioned are significant at $p< .05$ to $< .0001$.

Conclusions: Despite a somewhat different risk profile and a lower physical capacity at baseline, pts belonging to a sociodemographic minority had a similar benefit from CR. Due to a slightly higher dropout rate a closer supervision and extensive individual counseling is recommended in women and pts with foreign language.

311 (775). Posters (Date: 23rd May 2005)

Differences Between Hawaiian and Spanish Population (Honolulu Heart Study and Epicardian Study)

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[2]Honolulu Heart Program. Hawaii Center for Health Research

Aim: The 27 countries study show a similar cardiovascular mortality in Japanese and South Mediterranean people with differences between major risk factors, our pourpose was to compare if the cardiovascualr risk factors (CVRF) distribution is similar between Japannesse-American men in Honolulu Heart Cohort (Hawaii) (n=3.718) and EPICARDIAN cohort (Spain) (n= 955).

Methods: In order to compare CVRF we measured Blood Pressure in mmHg(BP) with aneroid sphygmomanometer, Heart Rate in ppm (HR), Blood total cholesterol (Chol)in mg/dl, Fasting Glucose (Glu) in mg/dl, Weight (W) in Kg, Height (Hh) in cm, Body Mass Index (BMI) in Kg/m2, and Waist to Hip Ratio (WHR).

To compare general health status (GHS), we classified in Excelent, Good, Fair and Poor the answer to the questionaire ''How do you fell your health is, in comparison with people of your similar age?''.

Results: Mean and differences detween CVRF are been showed in the next table.

No diferences was finding in most cathegories of GHS except in poor cathegory; 2.99% in HCC versus 5.9% in EPI (-3; -1.2,-4.7)

Finally we tried to know differences between drugs intake as Aspirin, Insulin and Meds Lowering Lipid: Honolulu men take 11% more aspirin than Spanish population (8.5,13.4), and 4.9%

	71—79				80+	
	MEAN		‡	MEAN		**Diferencies**
	HHC	EPI		HHC	EPI	‡
SBP	148	142.4	5.8¶	152.4	146.8	5.6¶
			3.5—8.1			3.2—8
DBP	80.8	78	2.8	77.6	73.2	4.3¶
			1.3—4.3			2.1—6.6
HR	63.4	70.1	—6.6	64.7	70.3	—5.6
			—5.3—7.4			4.4—6.8
Chol	191.9	193.9	1.9¶	184.4	187.5	3.1¶
			1.4—5.3			1.5—7.7
Glu	113.7	91.8	21.9¶	111.4	90.4	21.1¶
			15.7—28.1			16-26
BMI	23.8	27.9	—4¶	22.5	27.9	—5.4¶
			—1.8—6.25			2.3—8.6
WHR	0.95	0.95	0	0.94	0.94	0

Significant riskfactor Differencies: ¶95% confidence interval.:‡

(2.9,6.8) more statins. There aren't significative diferences between insulin 0.8% (0.3,-1.9).
Conclusions: Hawaiinian population show a bigger prevalence of CVRF than Spanish, except BMI. Moreover they intake more treatment for their control, but EPICARDIAN subjects fell poor health.

322 (759). Posters (Date: 22nd May 2005)
CHD Registers: An Untapped Resource for Monitoring Local Disease Incidence and Service Quality
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Disease (CHD) in community health care settings. Yet, the effectiveness of systems to monitor patterns of CHD management and outcomes has been constrained by a lack of structures for systemic disease monitoring and the difficulties of merging data collected in different settings. For the Scottish Executive National CHD Demonstration Project, an innovative centralized computerized CHD Register of those with or at risk of CHD has been developed in a region of Scotland. This register can store, receive and send information from a variety of national and local databases/clinical systems related to people with or at high risk of CHD. The Register contains data, stored over 109 fields, on an individual's demographic profile, CHD risk factors, pharmacological therapies, lifestyle behaviours, access to services and previous CHD-related medical history. This information is accessed to support patient care in hospital, family practice and patients' homes. It can also be used for practice-based clinical audit, disease mapping and evaluation of service provision and impact. We will show that by allowing data exchange and central storage between these previously unlinked systems, a CHD Register can monitor CHD prevalence, incidence, medical management, services offered, behavioural change, and changes in outcomes (reported risk factor change, CV risk, CHD-related hospitalisation rates and CHD and non-CHD mortality). Patterns in these data can be examined by practice, locality, demographic factors, and neighborhood affluence. Over the initial 14 months operation (Sept 2003-Nov 2004), the number of patients recorded in family practices as having CHD has increased by 839% (559 to 4694)/0.69% to 5.8% of the local population. We will present local disease maps to convey how data can be used to target services or changes in clinical practice.

323 (759). Posters (Date: 22nd May 2005)
Addressing Privacy Legislation on Data Handling and the Processing of Chd-Related Information: Lessons from Scotland
Alexander Clark, Iain Findlay, Marion Flood
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Coronary Heart Disease (CHD) Registers or linked chronic disease management systems can identify all cases of CHD in identified populations, track the care these individual receive and any impact on mortality, morbidity and re-hospitalisation. While this may benefit patients, the sharing of patient data must also comply with data handling legislation. In Europe, two major acts (European Human Rights Act of 1998; Data Protection Act of 1998) seek to maintain the confidentiality of personal data held in electronic records. Similar legislation exists throughout North America. Compliance with such legislation is essential but difficult as acts tend to be complex, multifaceted and subject to little legal precedent. Drawing on the development of the United Kingdom's first integrated regional CHD Register, this paper will state the main legal and ethical issues confronting those setting up and maintaining population-based monitoring systems. These issues are: maintaining the security of feeder systems, ensuring confidentiality of personal data and agreeing access to relevant CHD information. Particularly, the paper will focus on the importance of reconciling achieving adequate patient consent and respecting individual autonomy with developing a monitoring system that contains a sufficiently large proportion of the population. We will outline a long term strategy for achieving this.[1]In implementing a coronary heart disease register in the West of Scotland, an 'opt-out' strategy for consent has been developed that successfully resolves these challenges. The strategy is premised on the need to take all reasonable measures to inform those for whom personal data could be stored regarding the purpose of the register, the types of data stored, storage method, and likely data usage/users. This information was given through a sustained media campaign, leaflet mailing to each household and leaflet distribution to key local public settings. Individuals could then opt-out of inclusion on the register through a freepost address or local telephone number. With a sustained and comprehensive public awareness of the register and its purpose, this strategy fulfils the ethical imperative of informed consent and the implied right of individuals to refuse inclusion while resulting in a register that is also complete.

1. Clark AM, Jamieson R, Findlay I. Registries and Informed Consent. New England Journal of Medicine 2004;351(6):612.

325 (759). Posters (Date: 24th May 2005)
Using Social Theory to Evaluate Cardiac Rehabilitation Services: Increasing Organizational Research Capacity and Applicability of Findings
Alexander Clark, Paul MacIntyre
Canada/Scotland, Paisley

We report the methods used to evaluate the cardiac rehabilitation (CR) programme implemented as part of the Scottish National CHD Demonstration Project: '*Have a Heart Paisley*.' This approach was highly innovative as it attempted to address not only the issue of programme effectiveness, but what elements of CR work for whom, when and why. The evaluation involved 12 different studies, synergistically linked, that included an implementation evaluation of the previous cardiac rehabilitation program, an outcomes evaluation comparing care outcomes in 2002 to 1999, a regression analysis of attendance predictors and a qualitative strand that examined the influence of CR on patients over the long term, attendance decision-making and the views of program content held by vulnerable populations, such as women, the elderly and patients from deprived communities. Unlike approaches that are solely focused on outcomes, this approach allowed patients' views and experiences of the program to be examined and the outcomes from the program explained. This is particularly useful in generating specific, prescriptive knowledge that health professionals can use to harness the strengths of the CR programme and address areas for improvement. By using a diverse set of methods and empowering health professionals to carry out their own evaluation, we will show how responsive and useful evaluation work can be integrated into programmes and build sustainable research capacity.

327 (782). Posters (Date: 23rd May 2005)
Preventing and Reducing Tobacco Use Among Youth in India: Project Mytri (Mobilizing Youth for Tobacco Related Initiatives in India)
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Background: India is undergoing a rapid epidemiological shift characterized by a progressive rise in the burden of non communicable diseases. Deaths attributable to tobacco are expected to rise alarmingly in many developing nations of the world in the next two decades, with India having the fastest rate of rise in these deaths. Most of these deaths will occur in the productive years of adult life, as a consequence of an addiction acquired in youth.
Aim: To conduct a group-randomized trial to evaluate the efficacy of a school-based, multi-component, tobacco prevention intervention for adolescents in grades 6-9 in two cities (Delhi and Chennai) in India (Project MYTRI).
Methodology: Project MYTRI is being conducted in several phases. The first phase was a formative one and used qualitative research to assess the relevance of MYTRI's intervention objectives and guide the development of the quantitative survey instrument. Forty-eight FGDs were conducted with students (N= 435) in sixth and eighth grades in six schools in Delhi, India. This phase was followed by a large-scale, baseline survey of students in grades 6 and 8 in the Government (lower SES) and Private schools (higher SES) that had been recruited for the study. Thirty two schools in the two study cities were recruited, matched, and randomly assigned to receive the intervention or serve as controls in the third phase. This will be followed by intermediate (after the first year of intervention, with 7^{th} and 9^{th} graders) and final follow-up (after the second year of intervention, with 8^{th} and 10^{th} graders) surveys to assess the impact of intervention in the target population.
Results: This presentation will highlight the findings of the Focus Group Discussions (FGDs) (a) students in Government schools reported as ''consumers'' of tobacco, while students in Private schools reported mostly as ''commentators''; (b) Private school students commented that tobacco use is higher in lower SES students and tobacco use varieties differed in the two groups (c) parents and peers were perceived to play a strong influence on youth tobacco use; (d) chewing *gutkha* is considered less harmful and more easily accessible than smoking cigarettes or *bidis*; (e)Students commented that currently cigarette smoking is becoming more fashionable among college going girls. Relevant outcome measures in the survey include current tobacco use and intentions to use tobacco, separately for smoking tobacco(bidi and cigarettes) and for chewed tobacco (gutkha). Preliminary analyses of the student survey will also be presented.

337 (789). Posters (Date: 24th May 2005)
Cardiovascular, Renal and Endocrinometabolic Iniciative: ''Model of Healthy Life''
B Larocca, A Rivas, CL Milanés, J Chique, B Plata, L Rodríguez, M Ayala
Minister of Health and Social Development (MSDS). Venezuela, Bolivarian Republic
Sixth International Conference on Preventive Cardiology 2005, IGUAZZU, BRASIL

Heart disease account for 28 % of all deaths in our country and represent the first cause of death (129.7/100,000 population). With the purpose to give an answer to the social requirement of the Venezuelan population with special emphasis in the poor people, and to help them to be more healthy, the Minister of Health and Social Development trough the Programs of Cardiovascular, Renal an Endocrino-Metabolic Health, named CAREM, together developed the *Intervention Strategies* in the public sector of health by following precepts given by the institution as governmental policies, resulting in the ''Design of a Model of Healthy Life'', in order to promote health and better standard of living, from the pre- conception stage to achieve a complete growth an aging.
It is import to point out the participation of the community to guide the human and social developing according with governmental police of health strengthens the Primary Care of Health, which is given under the name of ''BARRIO ADENTRO'' meaning care in more efficiently form to the people who live in slums.
We have to take in consideration that the diseases approach by CAREM shared risk factors and damage to targed organs in similar conditions, from this we can assume that intervention strategies are the same. In conclusion with CAREM Initiative we will provide operative norms to health workers that will enhance the integral care of the population with special emphasis in CAREM AREAS. Modifying these behaviors is critical for both preventing and controlling heart disease.

338 (790). Posters (Date: 24th May 2005)
Can Statins Prevent Endothelin-1 Rise in Acute Coronary Syndrome without ST Segment Elevation?
£ukaszyk Andrzej, Cieśliñski Andrzej, Magorzata Pyda
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Background: It has been evidenced that prolonged treatment with statins reduces the number of acute cardiac events. Endothelial cells are probably one of the targets for action of statins. However, more than one mechanism should be considered in this respect.
Objective: to test the hypothesis that one of statins action is suppression of endothelin-1 rise at the early stage (first 24h) of acute coronary syndrome.
Methods: thirty one men and women with either unstable angina at rest or non-Q wave myocardial infarction were prospectively investigated to establish whether these conditions are associated with high plasma endothelin-1 level and how former treatment with statins could influence that. Ten of the patients have been previously treated with statins (7 — with simvastatin, 3 with atorvastatin) for months or years. Twenty one have been not. The control group consisted of 27 patients diagnosed with stable angina or history of myocardial infarction admitted to the hospital for an angiogram. The blood specimens were drawn in first 24 hours of the episode, frozen at —80 ^{o}C and then plasma endothelin-1 was assayed with ELISA.
Results: Patients with acute coronary syndrome had significantly higher mean plasma endothelin-1 concentration than did the controls (1.07 [SD = 0.73] ng/ml vs 0.41[SD = 0.18] ng/ml, $P < 0.001$). Patients on statins had significantly lower mean plasma endothelin-1 than did patients not formerly treated (1.27 [SD= 0.79] ng/ml vs 0.66 [SD = 0.3] ng/ml, $P < 0.05$). The difference between patients on statins and controls was not significant (0.66 ng/ml vs 0.41 ng/ml — NS).
Conclusion: Prolonged treatment with statins in advance of acute coronary syndrome without ST segment elevation suppress endothelin-1 rise, what possibly can reduce the number of cardiac events.

340 (791). Posters (Date: 22nd May 2005)
Prevalence of Microalbuminuria in the Population of a Rapidly Developing Country and Association with Blood Pressure and Diabetes
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Background: Microalbuminuria is both an independent cardiovascular risk factor and a complication of conditions such as diabetes and hypertension. We estimated microalbuminuria in the population of the Seychelles (Indian Ocean) where the prevalence of high blood pressure and diabetes is high.
Methods: We conducted a survey in a random sample of the population aged 25-64 in 2004. Based on random urine samples, we determined a protein/creatinine ratio of $\geq$30 mg/mmol with an urinanalyser (Status, Bayer), which closely predicts proteinuria $\geq$300 mg protein per 24 hours. Diabetes was defined as fasting blood glucose $\geq$7.0 mmol/l, 2-hour glucose $\geq$11.1 mmol/l or aware of having diabetes. Blood pressure (BP) was based on the 2 last out of 3 readings with an automatic device.
Results: The survey was attended by 1255 persons (participation rate of 80.3%). The prevalence of microalbuminuria increased (% in men/% in women) from 3.2/4.3 at age 25-34 to 25.7/29.3 at age 55-64. At age 25-64, the prevalence of BP $\geq$160/100 mmHg was 12.4/8.3 and that of diabetes was 9.3/9.9. Microalbuminuria was found in 6.7% of persons with neither BP $\geq$160/100 nor diabetes, 25.5-30.6% with either condition, and 62.7% with both conditions. In multivariate analysis, the odds ratios for microalbuminuria were 3.4 for diabetes and 1.3 for glucose intolerance (vs. diabetes & no intolerance) and 5.4 for BP $\geq$160/100 and 2.8 for BP =140-159/90-99 (vs. BP <140/90). Microalbuminuria was also associated with age but not with sex, overweight, smoking, and blood cholesterol.
Conclusion: Microalbuminuria was commonly found in the general population and was associated with age, BP and diabetes. The costs and benefits of using this investigation in developing countries, e.g. to help adjust treatment of hypertension and diabetes, should be appraised.

341 (791). Posters (Date: 23rd May 2005)
Ultrasound Screening of Peripheral Atherosclerosis: Is it Useful in Developing Countries?
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[2]Ministry of Health, Republic of Seychelles
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[4]Canton Laboratory for Clinical Chemistry, St Gallen, Switzerland

Background: Peripheral atherosclerosis is be both a marker of the aggregate level of conventional cardiovascular risk factors and an independent cardiovascular risk factor.
Methods: We conducted a survey in a sample representative of the population aged 25—64 in the Seychelles, Indian Ocean (participation rate of 80.2%). Within a random subsample of persons aged 35-64 (n=552), atherosclerosis plaques were identified and measured (M'ATH software, Metris, F) in standard segments of the right and left carotid and femoral arteries using B-mode ultrasound (Logiqbook, GE). A plaque was defined for a focal thickening of the intima-media thickness of $\geq$1.2 mm.
Results: The prevalence of $\geq$1 plaque in any of the 4 artery sites was 68%/32% in men/women aged 35-44 and 99%/95% at age 55-64. The prevalence of $\geq$1 plaque in the 4 sites was 0%/0% at age 35-44 and 26%/16% at age 55-64. An atherosclerosis burden score (ABS) ranging from 0 to 4 (corresponding to 0-4 artery sites with $\geq$1 plaque) was associated significantly and independently with age, sex, LDL-cholesterol, HDL-cholesterol, systolic blood pressure, smoking and diabetes (R^2: 48%). A high ABS (3—4) was found in approximately 10% of individuals with a low risk factor profile. Inversely, a low ABS (0-1) was found in approximately 13% of individuals with a high risk factor profile.
Conclusion: The carotid/femoral atherosclerosis burden score was associated strongly with conventional risk factors. In settings with limited resources, ultrasound of carotid/femoral arteries (which requires no reagents or disposables) may be an affordable non-invasive means for identifying individuals at increased cardiovascular risk. The significance of plaques in subjects with low levels of conventional risk factors must be further elucidated.

342 (789). Posters (Date: 22nd May 2005)
Epidemiological Situation of the Cardiovascular Diseases in Venezuela
J Chique, B Larocca, L Rodríguez
Minister of Health and Social Development (MSDS), Venezuela, Bolivarian Republic

Heart disease is the nation's leading cause of death since 1950. Several policies had been designed for its intervention oriented to decrease the mortality, however the epidemiological analysis including quantification, qualification, evaluation and monitorization of the social impact of these interventions were not completed until now. In the present study we have done a review of the registered information and an epidemiological analysis of the cardiovascular diseases emphasizing the mortality during the period 1996-2002. One of each three death registered in the country are related to cardiovascular system (I00-I99)., been more frequent in old people (>60 y). The rates of death from heart disease were higher among men than women and represent the 23% of deaths in people >60 years old. Analizing the specific cardiovascular disease as a cause of death we found that for each 10 deaths, 5 were cause by isquemic heart disease (I20-I25), three were for stroke (I60-I69), one was for hypertension (I10-I15).
In conclusion, based in this evidences the cardiovascular diseases as well in the international reports, represent a major health problem in our country. We clearly know that we must apply a new integral strategies to reach a significant decrease in mortality for cardiovascular disease.

347 (774). Posters (Date: 23rd May 2005)
Is Screening of Population in Small Cities Effective? Results of the Polish 400 Cities Project
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Medical University of Gdansk, Gdansk, Poland

Aim: To assess percentage of subjects with newly detected arterial hypertension and other cardiovascular risk factors in screening studies performed in population of 100 small cities in Poland — Polish 400 Cities Project (P400CP).
Material and Methods: P400CP, designed for years 2003-2005, is aimed to increase detectability of hypertension, hypercholesterolemia, diabetes mellitus in populations of small cities (< 8000 inhibitants) in Poland and to build infrastructure for primary cardiovascular prevention. In year 2003 and till September 2004, one-week screening and educational programs were performed in 97 small cities. We examined 31093 subjects (age 7-98, mean age 57.1 +/-13.6): 20631 women (W) and 10462 men (M). Laboratory tests (strip tests): fasting glucose (Glc), total cholesterol (Ch), as well as blood pressure (BP — two readings during two visits), anthropometric measurements and questionnaire interviews were performed. Visceral obesity was defined as waist circumference >102 cm in M, and >88 cm in W.
Results: Only 13.15% of all screened subjects did not have increased BP, Glc or Ch (W 13.66%; M 12.15%; p<0.001). In 68.47% (K 66.89%; M 71.57%; p<0.001) of patients at least one

newly found risk factor was detected. The Table shows the prevalence of risk factors.
Overweight or obesity was observed in 70.58% of examined subjects (W 68.08%; 75.49%; p<0.001), visceral obesity was observed in 47.22% (W 53.51%; M 34.81%; p<0.001).

RISK FACTORS	diagnosed earlier		newly detected	
	W	M	W	M
mean BP≥140/90 mmHg	39.1%	32.4%	24.7%	35%
Glc>100 mg/dl	5.2%	6.3%	13.5%	19.5%
CH≥190 mg/dl	13.4%	8.8%	53.6%	51.9%

Conclusions: 1. Increased total cholesterol level and overweight or obesity represents the most commonly observed disorder. Nevertheless only every tenth patient was aware of hypercholesterolemia. 2. Every second patient was aware of BP≥140/90 mmHg and every third was aware of Glc>100 mg/dl. 3. Te results obtained indicate an urgent need for intensive preventive measures. 4. The data above show that screening of general population in small cities should be recommended in high-risk regions like Poland.

349 (774). Posters (Date: 23rd May 2005)
Association of Arterial Hypertension with Visceral Obesity: Estimates from Representative Survey in Poland in 2002 Poster B07 Presenting: Tomasz Zdrojewski
Zofia Babinska[1], Tomasz Zdrojewski[2], Piotr Bandosz[2], Roman Konarski[3], Bogdan Wyrzykowski[2]
[1]Department of Family Medicine,
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Objective: To assess association of arterial hypertension with visceral obesity in adults in Poland.
Design and Methods: In 2002, we conducted a survey on representative sample of adults in Poland (n=3051, age range: 18-94). The main aim of this nationwide study was to assess the prevalence and control of all main cardiovascular risk factors. The study included blood pressure and anthropometric measurements. Arterial hypertension (blood pressure ≥140/90 mmHg or antihypertensive medication) was diagnosed on the basis of three separate visits. Visceral obesity was defined as waist circumference >88 cm in females (F) and >102 cm in males (M).
Results: Prevalence of arterial hypertension was 29% (F 29%, M 28.5%, n.s.) and visceral obesity - 28.5% (F 37%, M 20%, p<0,01). Hypertension and visceral obesity was present in 21% in F and in 11% in M (p<0,01). In hypertensives mean waist circumference (F 95.3±2.7 cm; M 99.8±3.2 cm) was much higher (p<0.001) than in normotensive subjects (F 80.3±3.4 cm; M 90.3±3.5 cm). Prevalence of visceral obesity in normotensive subjects was 22.5% in F and 14% in M. In hypertensives, prevalence of visceral obesity was 71% in F and 37% in M. Significant correlations between systolic (F 0.45; M 0.27) and diastolic (F 0.43; M 0.36) arterial blood pressure and waist circumference were found (p<0.01).
Conclusions: 1. In Poland in 2002, every fifth women and every tenth men had both arterial hypertension and visceral obesity. 2. Mean waist circumference was significantly higher in hypertensive subjects than in normotensive ones. 3. Visceral obesity was always much more frequent in hypertensive subjects than in normotensive ones. 4. Significant correlations between blood pressure and waist circumference were observed for both sexes.

350 (774). Posters (Date: 23rd May 2005)
Distribution of C-Reactive Protein in General Population and in Patients with Arterial Hypertension in Country Representing High Risk Region for CVD
Kamil Chwojnicki[1], Tomasz Zdrojewski[1], Piotr Bandosz[1], Roman Konarski[2], Bogdan Wyrzykowski[1]
[1]Department of Hypertension & Diabetology, Medical University of Gdansk
[2]Center for Social Research in Sopot, Poland

Objectives: According to the 2003 ESH/ESC Guidelines C-reactive Protein (CRP) analysis is recommended in hypertensive patients. The aim of the study was to assess distribution of CRP and other traditional cardiovascular risk factors in general adult population of Poland and in patients with arterial hypertension (AH).
Design and Methods: In 2002, a cross-sectional survey of CV risk factors (NATPOL PLUS) was performed in in 2,359 individuals (random sample, 304 sampling points, age range 18-94 years; response rate 62%). BP measurements, laboratory tests (lipidogram, high sensitive CRP according to FDA standards) and questionnaire interviews were performed.
Results: Arterial hypertension (BP >=140/90 during three separate visits or treatment) was found in 29% of respondents. Cholesterol >=200 mg/dl was found in 52.5%, LDL-cholesterol >= 135 mg/dl in 57%, HDL-cholesterol <=40mg/dl in 11%, and triglicerides >= 150 mg/dl in 16% of examined subjects. Mean CRP was 2,17 mg/L in males (M) and 2,35 mg/L in females (F) (n.s). It was significantly (p<0,05) higher in hypertensives (M 2,64 mg/L, F 3,10 mg/L,) than in normotensive subjects (M 1,93 mg/L; F 1,96 mg/L). The table shows distribution of hs-CRP (mg/L) in general population and in patients with AH.

	Males:			Females:		
CRP	All	Normal	AH	All	Normal	AH
0—1	46.8	50.7	37.7	42.3	49.9	25.5
1—3	30.5	29.9	32.9	31.1	29.3	35.8
>3	22.7	19.3	29.4	26.6	20.9	38.8

Conclusions: In high risk regions for cardiovascular diseases like Poland hs-CRP above 1 mg/L was observed in more than half of adults. In every fourth adult it exceeded 3 mg/L. The mean values of hs-CRP were much higher in hypertensives than in normotensive subjects. However, a wide use of hs-CRP by general practitioners in everyday practice may be limited due to economic reasons.

357 (799). Posters (Date: 23rd May 2005)
Oxidised LDL, Total Antioxidant and Paraoxonase Polymorphism in Patients with MI
Lakshmy Ramakrishnan, Siuli Das, Mukta Sharma, D Prabhakaran, KS Reddy
Cardiac Biochemistry and Cardiology, AIIMS, N.Delhi

The high prevalence of CAD in Indians is not fully explained by traditional risk factors. A large number of genes are likely to be involved in the pathogenesis of coronary artery disease. Human Paraoxonase enzyme has been implicated in the pathogenesis of atherosclerosis. Paraoxonase is a calcium dependent Glycoprotein that is associated with HDL and has been shown to prevent LDL oxidation in vitro. A decreased Paraoxonase activity has been documented in patients with myocardial infarction. The PON enzymatic activity polymorphism varies among different ethnic background. The genetic basis of the inter individual variability of PON activity has been attributed to the presence of an A to G polymorphism in the coding region of PON gene. Individuals homozygous for Arg (BB genotype) at 192 show a significantly higher PON activity (using paraoxon as substrate) than those homozygous for Gln (AA genotype) and are at increased risk of CAD. We looked at PON 192 polymorphism in patients with MI (n=100) and healthy controls (n=200). We also measured the circulating oxidized LDL, total antioxidant status and Paraoxonase activity in the cases and controls. A significantly higher oxidized LDL was found in cases (44.4 ± 22.0 U/L) compared to controls (36.7 ± 9.6 U/L) and this was accompanied by a decrease in total antioxidant level (1.30 ± 0.43 mmol/L vs 1.53 ± 0.53 mmol/L). The Paraoxonase activity in our subjects were lower than that reported for other population. Data on PON 192 polymorphism suggested B allele, which is associated with increased risk of CAD, is more prevalent in MI patients.

359 (801). Posters (Date: 22nd May 2005)
A Comparative Study on Antioxidant Status and OX LDL in the Patients with MI and Healthy Controls
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Free radicals, cytokines, nitric oxide and antioxidant play a major role both in atherosclerosis and myocardial damage and preservation. Myocardial infarction is the most common cause of congestive cardiac failure. In various studies it has been found that people with high intake of antioxidant have a lower risk of myocardial infarction. In this connection we have studied the association between antioxidant status and oxidized LDL in cases (50) with myocardial infarction and controls (100). Our finding shows that the levels of total antioxidant (0.868 mmol/L), superoxide dismutase (1279.2 U/ml) and glutathione peroxidase (40.62 U/L) are lower in cases with MI than healthy controls (1.173 U/ml, 1378 U/ml and 59.05 U/L respectively). On the other hand the level of oxidized LDL was higher in cases (32.9 U/L) as compared to controls (22.7 U/L).

361 (803). Posters (Date: 23rd May 2005)
Microalbuminuria and Lipid Profile in Patients with NIDDM

Diabetes mellitus is associated with decreased life expectancy. Chronic sub clinical hyperglycemia is perhaps the major factor for complications in diabetes. The progressive secondary complications are the major cause of morbidity and mortality in diabetes which are due to chronic and degenerative involvement of vessels leading to macro and microangiopathy. A sub clinical increase in UAE early in the course of diabetes is a powerful predictor of later development of clinical diabetic nephropathy and renal failure. The increase in urinary albumin excretion has a predictive value for CVD in NIDDM. Microalbuminuria in diabetes mellitus has been related to poor glycemic control and alterations in lipid profile. The study was undertaken to study the lipid profile in NIDDM patients with (20-200 ug/min) and without (<20 ug/min) microalbuminuria. 141 type 2 diabetic patients were recruited for the study . Their anthropometric data, blood pressure and duration of diabetes were recorded . Blood samples were collected after an overnight fast for the estimation of plasma glucose, glycosylated hemoglobin and lipid profile. A timed urine collection was done for the microalbumin estimation. The analysis showed no significant difference in lipid profile of the patients with and without microalbuminuria. Also we could not find any association with blood pressure.

362 (804). Posters (Date: 24th May 2005)
Internal Validity in Survey Research of Health Beliefs and Behaviours — Cautions and Constraints
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Abstract: Survey research is widely used and forms an important research methodology. Therefore, the validity of the survey instrument should be high. Validity refers to the accuracy and trustworthiness of survey instruments and data findings in research. Commonly used techniques to validate surveys tend to ignore many issues of internal validity, including congruency of researcher's and respondent's understanding of the questions; conceptually matching of items in the survey with the concepts relevant to the population under study; relevance of the items on the survey in the context being studied; whether the respondent understands and is comfortable with the terminology and the wordings of the questions; influence of one question on the answers to subsequent questions, on the response rate to the questionnaire as a whole or to specific questions in particular; the influence of different interviewer characteristics and contexts on the response rate and on the validity of the answers; the influence of anonymity promised to the participants on the validity of the responses and on the response rate to the questionnaire as a whole or on the individual questions in particular; and whether the answers elicited are the 'true' responses, or merely the respondents' way to manage an uneasy interview situation in a least disturbing way. Based on field experiences and literature review, this article discusses some of the pitfalls and deficiencies in designing, interpreting and validating surveys.

364 (805). Posters (Date: 24th May 2005)
Poor Utilization of Heath Care Services by Hypertensive Persons told to seek Treatment in Dar es Salaam, Tanzania
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Objective: To assess the proportion of persons who attended health care services after being told that they had high blood pressure (BP) and that they should seek antihypertensive treatment.
Methods: BP was measured with an automated device within a survey of cardiovascular risk factors of all residents aged 25-64 of a defined area of Dar es Salaam (n=9254 participants). Triplicate BP readings on three additional occasions were performed in all participants who had first BP reading of ?160/95 mmHg or reported treatment and in a similar number of persons with BP<160/95 mmHg and matched for age and sex ('controls'). All BP measurements were made at the participants' homes. After the 4th visit, persons with sustained high BP or reporting antihypertensive treatment ('cases') were advised to seek health care for high BP. We visited 12 months later the cases

and controls at their homes and asked them about their health care seeking behaviors.
Results: From the 1315 cases and controls enrolled in this study, 908 (69%) could be found after 12 months. The proportions of persons who attended at least once a public or private health care facility for high BP, in the 12-month interval, was 51.0% for cases under treatment (n=99), 25.4% for cases not under treatment (n=389), and 4.0% for controls (n=423). Attendance was associated directly with BP level, age, female sex, and reported concern about hypertension and inversely with reported lack of perceived illness. No relation was found with education or income levels.
Conclusions: This low utilization of health care services by hypertensive subjects has important relevance for both prevention and control of hypertension in a population with previously demonstrated high stroke mortality.
A poster will be displayed
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370 (814). Posters (Date: 22nd May 2005)
Extracted Barley Beta-Glucan Improves CVD Risk Factors and Other Biomarkers in a Population of Generally Healthy Hypercholesterolemic Men and Women
Joel Pins, Joseph M. Keenan1, Leslie L. Curry, Melanie J. Goulson, Lore W. Kolberg
University of Minnesota, Department of Family Practice and Community Health
Cargill Health and Food Technologies

Whole barley foods, like oats, are rich in soluble fibers and particularly â-glucan. However, barley foods are not commonly consumed in the U.S or worldwide. Therefore, we conducted a double-blind, placebo-controlled, 5-group parallel study to determine the effects of extracted barley â-glucan on CVD biomarkers. Treatment groups included either low molecular weight (LMW) or high molecular weight (HMW) â-glucan at both 3 and 5 gram doses. Treatment delivery was both a ready-to-eat cereal and juice. Generally healthy hypercholesterolemic (LDL-C 130-190 mg/dL) men (n = 76) and women (n = 79) between the ages of 25-73 who completed a 4-week diet phase (modified fat diet) were randomly allocated to one of the four treatment groups or control. Additionally, treatment groups were stratified by metabolic syndrome status. Metabolic syndrome participants were identified using the ATP III guidelines definition and/or elevated fasting insulin levels of = 10 μU/L. All subjects consumed treatment or control twice daily for 6 weeks. They were counseled to maintain the study diet and all other lifestyle habits throughout treatment. Three-day food records were collected during week 1 and week 6 of the study. Fasted blood samples were collected pre- and post-intervention, and blood lipids and other CVD biomarkers were determined. Participants in the metabolic stratus also participated in a 4-hour mixed meal challenge where baseline and post-prandial parameters (glucose, insulin, FFA, Tg) were assessed.
Stratified analyses indicated a difference in treatment effect between metabolic and non-metabolic participants for fasted triglycerides and hs-CRP. For these two parameters, metabolic participants had higher baseline values and significant reductions in all treatment groups compared to non-metabolic participants. In conclusion, short-term administration of extracted barley â-glucan significantly improved CVD risk factors.

384 (837). Posters (Date: 22nd May 2005)
Cardiovascular Risk Factors Trend: Results of the Ariana Population Surveillance
Habiba Ben Romdhane, Hajer Skhiri Souha Bougatef, Donia Gharbi, Hichem Ben Azouz, Noureddine Achour

Objective: One of the objectives of the Ariana Study is to enhance the Tunisian capacity for undertaking epidemiological research relevant to the CVD surveillance and establishing the magnitude of the CVDs in the population.
Methods: Cardiovascular risk factors were assessed in two population surveys conducted in 1996-97 and 2000-01 in the Ariana region among 7602 adultes 35-70 years aged. The surveys were based on:1- a questionnary,2- an anthropometric and physical examination,3- a biological investigation, and 4 - an EGC registration for the second cohort.

CVD Risk Factor Results by Treatment Groups:

TC					
pre	234.0 ± 18.4	235.9 ± 17.8	233.6 ± 17.8	238.0 ± 21.0	235.1 ± 19.7
post	231.3 ± 20.9 *a*	218.8 ± 16.8 **b*	214.5 ± 17.3 **b*	211.6 ± 14.8 **b*	205.9 ± 20.1 **c*
LDL-C					
pre	152.7 ± 10.7	153.9 ± 11.6	152.8 ± 14.9	154.6 ± 15.1	154.5 ± 13.2
post	150.9 ± 18.8 *a*	140.5 ± 10.1 **b*	138.8 ± 16.1 **b*	134.3 ± 10.3 **c*	132.0 ± 9.0 **c*
HDL-C					
pre	50.5 ± 11.2	49.6 ± 10.6	47.9 ± 8.5	50.4 ± 10.8	50.8 ± 9.6
post	49.9 ± 11.0 *a*	50.8 ± 11.4 *a*	47.4 ± 9.2 *a*	49.7 ± 9.7 *a*	51.9 ± 8.9 *a*
Tg					
pre	153.9 ± 53.0	154.9 ± 46.9	164.7 ± 64.4	166.7 ± 67.8	158.3 ± 58.6
post	158.8 ± 54.4 *a*	142.2 ± 35.0 *b*	152.5 ± 43.7 *b*	145.7 ± 50.9 **b*	133.7 ± 40.8 **b*
sBP					
pre	119.9 ± 11.7	120.0 ± 10.7	119.8 ± 10.8	120.3 ± 9.6	124.4 ± 10.9
post	119.1 ± 8.7 *a*	117.5 ± 7.9 **a*	118.3 ± 9.5 *a*	121.9 ± 11.2 *a*	119.8 ± 11.6 **a*
dBP					
pre	70.3 ± 6.7	69.0 ± 6.9	70.4 ± 8.2	71.0 ± 6.1	71.9 ± 8.6
post	69.5 ± 6.1 *a*	68.6 ± 6.8 *a*	68.8 ± 6.7 *a*	71.0 ± 8.3 *a*	70.6 ± 8.7 *a*
hs-CRP					
pre	2.2 ± 1.3	2.4 ± 1.0	2.1 ± 0.9	2.0 ± 1.1	2.3 ± 1.2
post	2.1 ± 1.3 *a*	1.8 ± 0.9 **a*	1.6 ± 0.6 **b*	1.6 ± 0.7 **b*	1.4 ± 0.7 **b*

* indicates statistical differences within groups at p-value <0.05.

Results: Relative to the first survey, the prevalence of hypertension, diabetes, hypercholesterolemia didn't change significantly whilecborder line cholesterol increased on both genders, tobacco smoking decreased and ex-smokers increased on men.. In both genders, hypertension and diabetes prevalence is low before 50 years but it increased after this age. Risk factors association is common : about 35% have more than two risk factors. This association is more common on women and diabetes-hypertension is the most frequent. Awareness and treatement of hypertension have increased but its control is still very low.
Conclusion: These two surveyss integrated in a global surveillance program has contributed to identify priorities and intervention relevant to region contexte. The prevalence of major risk factors is high in the Ariana population. Astill considerable proportion of persons, are not aware of their risk facors and do not well controlled them. A strong effort must be done to involve the health personnel for educating patients, the population for changing their life style and managers for enhancing the availability of drugs. The question is how much will be the cost CVDs control for a country which has a limited resources.
Keyword: Cardiovascular Diseases, Epidemiological transition, Risk factors Surveillance, Tunisia Project.

386 (837). Posters (Date: 24th May 2005)
Community Involvennment in the Ariana Heart Health Project
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Background: Tunisia is a country of 10 millions inhabitants, classified among the medium human develpment countries. The cardiovascular diseases (CVDs) are the leading causes of death with almost 30%. During the last decade, the implementation of a national strategy on CVDs was identified as a priority. The goal of the Tunisian Strategy is to enhance the national capacity for implementing a program relevant to the community needs. Data on CVDs incidence and associated risk factors prevalence and awareness are necessary for the community needs assessment achievement.
Method: Primary surveys on different aspects of CVDs problem were conducted in the Ariana region in Northern Tunisia (about 700 000 inhabitants). The first one, conducted in 1996—97, on a randomly selected 6000 adults 35-64 years old, was focused on risk factors .The second one, conducted on the same sample in 2000-2001, was focused on CHDs screening by the ECGs registration. Since 2001, a CHDs population register according to MONICA criteria's was implemented. In 2002, an economical study on direct cost myocardial infarction management was performed. The results of all these investigations were presented on a large community forum. The partners identified to be involved in the project were invited to discuss the CVDs determinants, consequences and prevention.
Results: The different investigations highlight the CVDs problem magnitude. Hypertension, tobacco smoking, obesity and sedentarily were identified as priorities . A multidisciplinary committee has elaborate an integrated and comprehensive community based program. Partnership, health sector organization, health education, health personnel training, involvement of mass media, NGOs, schools are identified as the main axes of this program.
Conclusion: Our approach on CVDs program implementation is interesting regarding the process and the first results especially for advocacy. The assessment of the interventions will demonstrate how practical and feasible is a community-based program in the social, economical and cultural Tunisian context.

387 (837). Posters (Date: 22nd May 2005)
Determinants and Impact of the Epidemiological Transition in Tunisia: The Case of Cardiovascular Diseases
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Objective: We aim at analysing the increase of CVDs in the tunisian hospitals in order to assess the burden of NCDs in the transitional context.
Methods: Data are recorded through the Tunisian National Morbidity and Mortality Survey (TNMMS) including 150 000 patients during one year-march 2003 to February 2004-. In order to assess the CVDs (CHDs vs RHDs) trend, two representative samples of Cardiology Departements patients were compared One is selected from the TNMMS and the second from the hospitalisations recorded in 1992 . Causes, stay duration, status at the end of the hospitalisation, transfer to an other hospital and patients sociodemographic characteristics are recorded and compared for the two periods. All the diagnosis are coded referring to the DMC 10. To analyze the determinant of the epidemiological transition, we have elaborated the CVD causal pattern and we have documented all their determinants.
Results: Tunisia has known a crucial demographic transition, outcome of an impressive economical, social and health development. The demographic transition announces an epidemiological transition characterized by the decrease of communicable diseases, maternal and foetal mortalities and the increasing of non-communicable diseases.). CHD rate has dramatically increased, especially on women while RHD has decreased especially on men.

Trend of main causes of hospitalizations in the Cardiology Unit Tunisia, 1992, 2003

	1992		2003	
	Men(%)	Women(%)	Men(%)	Women(%)
CHD	39.2	15.5	58.9	38.2
RHD	11.8	25.3	4.4	11.8
HYPERTENSION	6.4	10	6.7	14.7

Conclusion: This study has confirmed that so far controlling transmitted diseases seems to be successful, Tunisian people are about to face a new problems as hypertension, obesity, diabetes and tobacco smoking. The new challenge with the burden of diseases requires the implementation of a national strategy relevant to the epidemiological, social and economical transition. Population needs and cost effectiveness of interventions assessment is crucial to set the national priorities.

388 (827). Posters (Date: 22nd May 2005)
A Study on Yunnan Endemic Sudden Cardiac Death (Fulminant Myocarditis)
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To find effective measures for control of Yunnan endemic sudden death (YESCD) or Yunnan endemic fulminant myocarditis (formerly Yunnan fulminant viral myocarditis) a field investigation and emergency response to YESCD was conducted in July and August 2004 in some new and historical YESCD epidemic areas of Yunnan province, southwest of China. Questionnaire

survey and clinical examinations (physical examination, electrocardiography (ECG), and chest X-ray film) of YNSD cases and controls were done. Blood samples of the subjects, main foods (rice and corn etc) and soil samples were taken for measurement of glutathione peroxidase (GSHPx), the levels of selenium and selenium protein P (SeP), tumor necrosis factor-α (TNF-α), interferon-γ (IFN-γ), Coxsackie virus B antibodies (CVBx and CVB1-6), and enterovirus. In July 2004, 30 cases of YESCD were reported and 17 cases died in four counties in Yunnan province. 327 people in four sites (villages, counties) were surveyed. Of the 30 cases reported, 5 cases were clinically diagnosed as acute (1 case), chronic (1 case) and latent (3 cases) types of Keshan disease based on the presentation and epidemiological features. Seven of the 17 died cases were dissected in field. Of them, the findings of 4 cases are typical chronic type of Keshan disease, characterized in fresh and old focal necrosis, degeneration and fibrosis of myocardium cells and accompanied by inflammatory cell (lymphocytes and monocytes) infiltration. The levels of selenium and GSHPx activity in the blood of the people of the epidemic areas are low, and significantly correlated in reverse with the number of cases of YESCD occurred. In conclusion, YESCD is possibly related to selenium deficiency and very probably the acute type of Keshan disease, although Keshan disease is an unknown cause cardiomyopathy. Emergency response preparedness should be established, and the provincial and local departments of disease control should seriously consider administering selenium for the people at risk in the epidemic areas in Yunnan province before and during the rain season.

389 (824). Posters (Date: 22nd May 2005)
Prevalence of Silent Myocardial Ischemia and its Association with Metabolic Control in Mexican Subjects with Type 2 Diabetes
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Objective: To estimate the prevalence of asymptomatic myocardial ischemia in Mexican patients with type 2 diabetes, as well as its association with their metabolic control.
Methods: A cross sectional study is being conducted in a Medical Family Unit of the Mexican Institute of the Social Security that provides medical care to low-income families in Mexico City. Two hundred patients with type 2 diabetes mellitus have been randomly selected, aged 35-86 years old. A graded exercise test was performed according to the Bruce protocol, following the American College of Cardiology/American Heart Association guidelines. Horizontal or descending ST-segment depression of at least 0.1 mV measured 80 ms after de J-point in 3 consecutive cycles was considered a significant sign of ischemia. Fasting venous blood was tested using standard assays for glucose, total, high (HDL) and low-density lipoprotein cholesterol, triglycerides and glycosylated hemoglobin (HbA1c). Metabolic control was defined following the parameters provided by the American Diabetes Association. Prevalence with 95% confidence intervals (CI95%) was estimated and mean values of the biochemical parameters were compared with a t test (or Kruskal-Wallis test when no normal distribution was assumed).
Results: We have found 22 patients with ischemia, so the prevalence of silent myocardial ischemia (SMI) in this population is 7.9% (CI95% 4.7 — 11.0). There is no difference on the prevalence by gender. We have found no SMI in the 35-44 age group, and the prevalence in those over 65 years old is 18.8%. Subjects with SMI have higher serum values of HDL (49 vs. 44 mg/dl; $p<0.05$) and lower values of triglycerides (177 vs. 247 mg/dl; $p=0.09$). We found no differences on the mean values of the other studied parameters, including blood pressure. Only 23.7% of the studied population had an HbA1c < 7.0%. No differences were observed on the occurrence of SMI regarding metabolic control.
Discussion: Type 2 diabetes and cardiovascular diseases are the leading causes of death in Mexico. It has been estimated that there are nearly 3.62 millions diabetics in the country. Therefore, nearly 300,000 Mexican diabetics could have undetected SMI. Traditional cardiovascular risk factors do not seem to fully explain the occurrence of coronary heart disease in diabetics, nor metabolic control. Further studies should be performed in Mexican diabetics to prevent or early diagnose coronary heart disease.

394 (840). Posters (Date: 23rd May 2005)
Hyperhomocysteinemia: An Emerging Risk Factor in Atherosclerosis
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Atherosclerosis, long known as the leading cause of mortality and morbidity among industrialized nations and appearing to be in the forefront in the fast developing countries, continues to baffle leading authorities in terms of causes and management.
While for a good while, atherosclerosis has been associated with lipid abnormalities, elevated blood pressure, smoking, diabetes mellitus, sedentary lifestyle, stress, blood fat abnormalities and hypercoagulable states, as proposed in the studies conducted in Framingham (Massachussetts), Tecumseh (Michigan) and Chicago (Illinois), ''newer'' risk factors have been identified to have some links with the process of atherosclerosis, one of which is hyperhomocysteinemia. The search for risk factors other than the so called ''western'' ones has come to the fore because of cases of well documented myocardial infarction in individuals in the developing countries with practically none of the so called ''standard'' risk factors.
This communication will put into proper perspective homocysteneimia as it relates to the atheroclerotic process, its metabolism, oxidative damage to the arterial linings, pathophysiology of homocysteine in cardiovascular diseases, causes of its elevation, conditions associated with elevation of homocysteine and its relationship with the other established cardiovascular risk factors, and especially its effect on the production of cholesterol. Discussion will focus on homocysteine as it affects the population of the developing countries, its manifestation and recommended management.

400 (846). Posters (Date: 24th May 2005)
Cardiovascular Diseases Program Prevention in Kosova
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Purpose: To improve a cardiovascular efficient detection of high risk population in Kosova.
Methodology: Descriptive study on the health information system of cardiovascular diseases in Kosova and health problems and health status of the population.
Results and discussion: Cardiovascular diseases are increasingly causing huge problems of Kosovars health. In addition, they are causing substantial burden on social care. They account for around 40% of total mortality. Though, communicable diseases are still causing a substantial amount of ill health and death, non-communicable diseases should have a proper place in our priority setting and we should address this group of diseases with appropriate actions in order to be able to reduce efficiently the heavy burden of Kosovars health and economy. From the at-

tained data from the Health Information System, from all kinds of non-communicable diseases, cardiovascular diseases and cancers accounts for majority of them.
Conclusion: Cardiovascular diseases are still huge health problem of Kosova health system. The strategy consist on efficient detection of those at high risk; reduce the risk factor profile in general population; ensure the best survival and quality of life outcome; improve preventive specific measures and consequences. Only careful planning and foresight can help mitigate the problems of a growing population and its healthcare needs.
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405 (853). Posters (Date: 24th May 2005)
Comparison Anticardiolipin and Antiphospholipid Antibodies in Patients that Respond and not Respond to Streptokinase
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Background: Myocardial infarction is one of the most causes of hospitalization, and its treatment is mainly reperfusion of infarcted myocardium. Streptokinase therapy is a medical approach for reperfusion therapy but response to it is variable between patients which may be due to antistreptokinase antibodies or other antibodies such as antiphospholipid or anticardiolipin antibody. Therefore this study will compare the blood levels of anticardiolipin and antiphospholipid antibodies and patients that respond and not respond to streptokinase.
Methods: Each group contains 26 male patients with myocardial infarction who aged 4060 years and experienced the first time MI. They didn't have the history of autoimmune disease, pulmonary thromboembolism, Arterial thromboembolism, stroke and deep vein thrombosis. Their response to streptokinase were measured according to their first ECG and the ECG of 90180 minutes after streptokinase. Reduction of more than half of ST elevation was considered as their response to the treatment. The levels of anticardiolipin and antiphospholipid antibodies were measured by ELISA. Relation between the mean level of these antibodies and their response to streptokinase was assessed.
Result: The Mean level of IgG Anticardiolipin in patients that response to streptokinase was significantly lower than the other group (P=0.009) but the mean level of other antibodies: IgM Anticardiolipid(p=0.554), IgG Antiphospholipid(p=0.251) and IgM Antiphospholipid(p=0.301) was not significantly different (P=0.554, P=0.251, P=0.301).
Conclusion: Based on the results, can say that anticardiolipin antibody has an effect on the response to streptokinase. This antibody can inhibit the fibrinolytic effect of plasminogen and can neutralize the normal dose of streptokinase.

410 (857). Posters (Date: 22nd May 2005)
Red Clover Attenuates Aortic and Coronary Fatty Streak in Hypercholesterolemic Rabbits
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Abstract: Phytoestrogen are naturally found in many plants and possess estrogenic activity. Red clover is a member of the legume family and has high content of phytoestrogen. Consequently the effect of this plant on the development of atherosclerosis in male hyperlipidemic rabbits is studied.
Twenty rabbits were randomly divided in four groups. Rabbits receiving control diet, this diet added red clover, 1% cholesterol diet or 1% cholesterol diet supplement red clover. Using red clover in hyperlipidemic rabbits significantly decrease total cholesterol, fasting blood sugar (FBS), triglyceride(TG) and LDLcholesterol (LDLC) and significantly increase HDLcholesterol (HDLC) compared with hyperlipidemic rabbits (P<0.05). Also, the mean of fatty streak formation was significantly lower in aorta, left and right coronary.
Our finding support that using red clover prevents the progression of atherosclerotic lesion and reduce cardiovascular risk factor.

413 (861) Poster (Date: 23rd May 2005)
Prevalence of the Metabolic Syndrome in Central Part of Iran
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Introduction: The clustering of several cardiovascular disease risk factors such as abdominal obesity, hypertension, dyslipidemia and disturerbances in glucose metabolism has been termed metabolic syndrom (1). The metabolic syndrome has been shown to predict of cardiovascular diesease (CVD) and diabete (2-3). Some epidemiological studies showed that CVD is main cause of mortality in the entire world, also they showed that diabetic patients have excessive risk to CVD mortality.
In addition to increasing a patints risk of CVD the metabolic syndrome may hasten the development of stroke, type 2 diabetes, diabetic nephropathy, retinpathy and distal neuropathy(4). The results from a reprsentative sample of US adults showed that the metabolic syndrome is highly prevalent. For example 24% of US have the metabolic syndrome (5). Some socioeconomic changes such as transition from a rural to an urban lifestyle, socioeconomic position, education and exercise are associated with a higher prevalence of the metabolic syndrome (6). Prevalence of this disorder in Iran is unknown. Because the implication of the metabolic syndrome for health care are substantial, we sough to establish the prevalence of this condition in adults of central regions of Iran.
Methods: Between 2000 and 2001as the baseline survey of a national community based program for CVD prevention and control called Isfahan Healthy Heart Program, Examination survey using a multistage, stratified sampling designs subjects have been evaluated in Isfahan, Najaf-Abad and Arak in the central part of Iran. After an interview in the home, participants were invited to attend, 1 of 3 examination session: morning, afternoon or evening. As details reported in IHHP reports(7). As ATP III reports, participants having 3 or more of the following criteria were defined as having the metabolic syndrome:

1. Abdominal obesity: waist circumference > 102 cm in men and >88 cm in woman.
2. Hypertriglyceridemia: $\geq$150 mg/dl.
3. Lows highdensity lipoprotein (HDL) cholestrol: <40 mg/dl in men in <50 mg/dl in women.
4. High blood pressure $\geq$110 mg/dl(4).

We counted participants who reported currently using antihypertensive or antidiabetic medication (insulin or oral agents) as participants with high blood pressure or diabetic respectively.

Serum total cholesterol and triglycerids were measured with enzymatic colorimetric methods (Elan Auto analyzer 2000), High density lipoprotein cholesterol was measured following the precipitation of other lipoproteins with a heparin manganese chloride mixture (and) LDL cholesterol level was derived from the friedewold equation(9). Serum glucose concentration was measured using an enzymatic reaction. All of examination has done in Isfahan cardiovascular research center labratories and this laboratory has With the cental laboratory of the university hospital of leaven in Belgium. Three blood pressure reading were obtained in the mobile examination center. The average of the second and third systolic and diastolic blood pressure readings were used in the analyses.

For man and non pregnant women aged at least 19 years who attended the medical examination and who had fasted at least 8 hours, we calculated the prevalence of the metabolic syndrome by age, sex and rural or urban Isfahan and central province community.

We calculated prevalence of the metabolic syndrome by using SPSS 11.

Table 1. Age and sex specific prevalence of the metabolic syndrome among 12600 Inranian adults Aged at least 19 years by sex and aged, Isfahan Healthy heart program, 1999 to

Men					Women					Age	
60• Frequency (%)	50-59 Frequency (%)	40-49 Frequency (%)	30-39 Frequency (%)	20-29 Frequency (%)	60• Frequency (%)	50-59 Frequency (%)	40-49 Frequency (%)	30-39 Frequency (%)	20-29 Frequency (%)		
104(33.9)	64(26.2)	75(17.9)	50(8.4)	25(3.5)	180(63.6)	146(57.9)	212(46.4)	251(33.7)	124(17.7)	Urban	Isfahan provin ence
12(16.7)	20(28.2)	13(10.7)	9(5.7)	6(2.9)	51(68.9)	35(53.0)	53(44.5)	56(28.7)	27(14.3)	Rural	
56(19.6)	50(21.1)	35(10.4)	31(5.7)	17(2.9)	175(60.6)	118(53.6)	165(45.5)	166(27.0)	80(14.1)	Urban	Center provin ence
15(9.4)	9(8.5)	11(6.7)	15(5.9)	2(0.6)	68(48.9)	56(47.5)	72(33.0)	60(22.5)	35(10.6)	Rural	

Date and presented as percentage (SE) Frequency.
Age,Y

Table 2. Prevalence of the metabolic syndrome abnormalities in rural and urban area at Isfahan and Provinence

FBS Frequency(%)	SBP Frequency(%)	HDL Frequency(%)	TG Frequency(%)	WC Frequency(%)			
138(5.9)	443(18.7)	793(33.9)	1230(52.5)	396(16.8)	Urban	men	Isfahan provinence
28(4.4)	139(21.6)	189(31.1)	347(54.8)	64(10.0)	Rural		
203(6.5)	458(18.5)	1507(61)	1426(45.5)	2152(86.1)	Urban	women	Center provinence
41(6.3)	151(22.9)	342(54.8)	298(45.7)	499(75.8)	Rural		
110(5.3)	292(14)	821(40.5)	996(48.6)	224(10.8)	Urban	men	
27(2.8)	172(16.7)	300(30.6)	377(38.5)	51(5)	Rural		Isfahan provinence
129(6.1)	344(16.1)	1351(65.6)	904(43.2)	1571(73.8)	Urban	women	
56(5.3)	216(19.8)	649(60.6)	404(37.8)	605(55.6)	Rural		

WC: Waist Circumference
SBP: Systolic Blood Pressure
FBS: Fasting Blood Sugar
TG: Trigleceride

Table 3. Prevalence 1 or more abnormalities of the metabolic syndrome among 12600 Iranian adults > 19 years

5 Frequency(%)	4< Frequency(%)	3< Frequency(%)	2< Frequency(%)	1< Frequency(%)			
9(0.4)	60(2.5)	672(10.6)	544(23)	835(35.3)	men	Urban	
36(1.4)	211(8.4)	250(26.8)	860(34.3)	527(21)	women		Isfahan provinence
4(0.6)	13(2)	43(6.7)	141(21.9)	239(37.2)	men	rural	Center provinence
11(1.7)	61(9.3)	151(22.9)	177(26.9)	160(24/3)	women		
3(0.1)	43(2.1)	146(7)	511(24)	729(34.9)	men	Urban	
22(1)	157(7.4)	533(25)	668(31.3)	506(23.7)	women		Isfahan Provinence
2(0.2)	9(0.9)	41(4)	182(17.7)	357(34.7)	men	rural	
7(0.6)	71(6.5)	213(19.5)	283(25.9)	351(32.2)	women		

Results: Total number of 12514 subjects of Isfahan Arak and Najaf-Abad participated in this study 4873 and 1302 subjects from rural and an urban area of Isfahan and Arak and 4220 and 2119 subjects were taking part in study from rural and urban area of central province. women (Isfahan or central province) had the highest age adjusted prevalence of the metabolic syndrome (68.9 and 63.6) respectively (Table 1). The rural or an urban men had the highest prevalence of hypertriglyceridemia and low HDL cholesterol (Table 2). Men had the highest prevalence of hypertriglyceridemia, and women had the highest abdominal obesity and low HDL cholesterol concentration. 22.9% of rural Isfahanian women had high blood pressure. Overall, the age adjusted prevalence of the metabolic syndrome were 25.4% and 21.7% in urban and rural area of Isfahan respectively. It was highest among in rural Isfahanian 5059 years women (68.9%) and lowest among rural Arakian men (5.6%).

Discoution: Using ATP III new definition, we estimate that approximately 26.2% and 21.3% of central part of Iran adults have the metabolic syndrome. ATP III and NCEP determined prevalent metabolic syndrome. Prevalence of the metabolic syndrome is highly associated with race, population and caltural habits. Life style factors such as general obesity, sedentary life style change and daily physical activity have closely relationship with the metabolic syndrome. Obesity such as one of the most important components of the metabalic syndrome has been increase in all the world, it suggest that the further prevalence of the metabolic syndrome would have increased. Also gender and age had positive effect on metabolic syndrome (4). Prevalence of MS among rural Iranian women is higher (especial in 60 years old) central obesity and low HDL highest among women (86/1% , 65.6%) and lowest among arakian rural men (5%). The prevalence of hypertiglycidemia is highest in Isfahanian rural men (54.8). Some studies have as other studies hypertension is not strongly linred to the metabolic syndrome (15). Clustring of components of the metabolic syndrome is highly life in woman.

Genetic abnormalities, fetal malnutrition and visceral adiposity may play roles in the pathophysiology of Insulin resistance and the metabolic syndrome (16). Although insulin resistance among patiants with the individual components of the metabolic syndrome is common, significant proportions of these patients do not have insulin resistance resent studies demonstrate that dietary modification and enhanced physical activity may delay or prevent the tranition form impaired glucose tolerance to type 2 diabetes melltus and provide relevant treatment pradigms for patient with the metabolic syndrome.

The proper management of the individual abnormalities of these syndrome can reduce morbidity and mortality.

Table 1 Age and sex specific prevalence of the Metabolic syndome among ……..Iran and ults Aged atleast 19 years, by sex and age, Isfahan Health program, 199….

Table 2 prevalence of the metabolic syndrome abnormalties in rural and urban area of Isfahan and central provinece.

Table 3 prevalence of 1 or more Abnormalities of the metabolic syndrome among Iranian Adults > 19 years IHHP.

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415 (855). Posters (Date: 24th May 2005)

Apolipoprotein a, Factor VII and Triglyceride in MI Patients and their Relation Response to Streptokinase

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Introduction: Various studies indicate that elevated level of lipoprotein (a), triglyceride (TG) and F-VII are not only the risk

factor of Myocardial Infarction but also are effective in response to treatment, one of the treatment ways of MI is the use of thrombolytic drugs such as streptokinase (SK). There are different cross reaction factors that decrease the responsiveness to thrombolytic therapy. Streptokinase antibody and tissue-plasminogen activator inhibitor (PAI) are some of these factors.
Lp(a) is considered as a cross reaction factor because of its structural similarity to plasminogen, so it reduces the rate of response and the necrotic potency. Because of high prevalence of non-responsive to streptokinase in our population, it is very important to find factors cause it. In this study the serum level of Lp(a), F-VII and triglyceride in patients with MI who receive SK and its relation with positive response to treatment have been assessed.
Materials and Methods: This cross-sectional study was done on 30 patients referred to Emergency Department that their clinical signs and ECG showed MI. Blood sampling and ECG were done for these patients, then 1.5 and 3 hour after getting SK, ECG was repeated and compared with the first one.
The serum level of Lp(a), TG and F-VII of patients with positive response to SK and those with negative response to SK was measured. The results were statistically assessed by T-Student, Man-Whitney tests and by correlation coefficient.
Result: There wasn't any significant difference due to three factors in the group with positive response to SK and the group with negative response to SK. The mean Lp(a) in group with negative response to SK was less than the other group. The correlation of response to SK due to TG and F-VII was less than Lp(a).
Conclusion: The elevated level of Lp(a), TG and F-VII is related with the occurrence of MI. The more higher the serum level of Lp(a), the positive response to SK is reduced, because of interaction effect of Lp(a). Comparing the serum level of F-VII and TG with Lp(a) showed that measurement of LP(a) is more important regarding positive response to treatment. Comparing the mean Lp(a) in the community and in patients with MI showed that in patients with MI, Lp(a) level is more higher than normal level. So more attention should be paid to it as a risk factor.
Keywords: Lp(a), Streptokinase, Factor VII.
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419 (872) Poster (Date: 23rd May 2005)
The comparison of active and inactive employees on risk factors of coronary heart disease
Shekarchizadeh. Pkarimian .J

23 Men Employee of the Azad islamic university of isfahan had studied about coronary Risk factors comparisonof the results of the whole sample with the standards showed that ratio of weight to height is in a optimum level,body mass index and body fat percent showed that they are fat, vo2 max and other blood risk factors were in good level. comparison of the active Employees with the inactives showed that total cholesterol , LDL cholesterol.Weight, body mass index and the body fat in the unactive Employees are significantly higher than the actives. Vo2 max is significantly high inthe active group and the other blood risk factors and the Blood pressure in rest and exercise had no difference between two groups.
Keywords: Risk factors, Activity Coronary Heart Disease.

421 (946). Posters (Date: 23rd May 2005)
Health Monitor Survey

Introduction and objectives: The aim of the study was to assess health behaviour of different sociodemographic groups and to monitor time trends in health behaviour. The experience gained in other countries shows that the various socioeconomic groups are differently affected by the political, economic and social changes. Therefore, the assessment of the trends in health and health behaviour in Moldova is essential for planning of health promotion programs and evaluation of Moldovan Health Program and health care reform.
Health Monitor Survey was proposed because there was an increasing awareness among health professionals that non-communicable diseases account for nearly two-thirds of the total number of deaths in Moldova, and that, to a large extent, these diseases are dependent on risk factors and lifestyles which are amenable to modification. This is an area where was realized that increased emphasis on prevention could lead to major health gains.
The monitoring was realized on the basis of the questionnaire CINDI Health Monitor and included 600 persons 25-64 years from the Cahul region of the country. The sample is representative from the point of view of age, sex and (as mentioned) all regions. There were monitored food habits, physical activity, alcohol drinking, smoking, and special questions concerning the care of one's own health and it's judging.
The survey aimed to assess at the community level the main risk factors that generate non-communicable Chronic Diseases and thus to make a significant contribution to the health of the Moldovan people.
Method: The sample represented as well as possible the target population. The way used to draw a sample was a simple random sample. The survey was conducted at the regional level in a demonstration area.
Results: A large number of people (85.6%) had had their blood pressure taken during the current and last year, but only a low percent (9%) had had their cholesterol measured in the past year. Smoking, from the Survey results, does not appear as a great problem: 70.7% of interviewed people claim not to smoke at all and women hardly smoke at all. Only 0.8% of all interviewed women reported that they are smokers. This low prevalence of smoking among women is due to specific socio-cultural characteristics of the rural areas. One of the main causes of concern that needs continuous efforts is related with smoking cessation activities. A large percent of current smokers (25% out of 29.3%) are willing to quit. Even if the results of the Survey do not reveal serious nutrition problems several interventions are particularly needed, given that inappropriate nutrition substantially raises the risk of morbidity from hypertension, dyslipidemia, type II diabetes, coronary heart disease and stroke.
Alcohol abuse should be identified as one of the main areas of concern. Continued efforts to prevent drinking behavior in adult population and adolescents, as well as efforts to promote health behavior habits, using techniques that have documented effectiveness, may decrease the rate of alcohol consumption and help to meet the health targets.
Conclusion: This survey was designed to establish baseline information with respect to risk factors. Future surveys using a similar protocol can use this information to begin identifying trends or differences in the responses. It is hoped that this survey will permit intervention and prevention programs to recognize outcome effectiveness of their programs. Tobacco use, alcohol use, improper nutrition, sedentary lifestyle are recognized as preventable factors affecting mortality and morbidity in this country. With concerted and properly directed effort perhaps inroads can be made in fighting this state and national plague.

Health improvement program and local authority community strategies need to be coordinated — and ultimately integrated — through local strategic partnerships, to ensure they focus more specifically on reducing health inequalities and tackling the social, economic and environmental influences on health.

424. (Date: 23rd May 2005)

Prevalence and Determinants of Abdominal Obesity in an Adult Population in the District of Colombo, Sri Lanka

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Objectives: Abdominal obesity (AO) has recently been recognized as a more reliable predictor of coronary heart disease (CHD) than BMI. South Asians as an ethnic entity are prone to develop AO. In the backdrop of increasing life expectancy, changing lifestyles and high mortality due to CHD, we assessed the prevalence and determinants of AO in target populations at risk in Sri Lanka.

Study methods: Colombo district represents rapid urbanization with exposure to a range of traditional and western lifestyles. A community-based study was carried out in a sample of 1400 males and females of (20-64) years of age, residing in Colombo for not less than one year. A multi stage-stratified-probability sampling method was used to represent age, sex and geographical distribution.

Determinants of obesity in relation to population characteristics and lifestyle risk behaviours were assessed via an interviewer-administered-questionnaire. Quality of diet was assessed by a validated food frequency questionnaire based on energy-dense-foods and dietary fibre. Vigorous and moderate physical activities and, walking were assessed as part of transportation, job, housework, recreation, sports and leisure time activities. Waist circumference, weight, height were measured using standardized protocols. Obesity was defined by standard classifications based on Asian adults.

Results and Discussion: Prevalence of abdominal obesity (AO) was 34.9 % (95% CI=32.5-37.4). It was 25.7 and 44.7% in males and females, respectively. 32.2% had generalized obesity while 32% had both types.

Of the many correlates of AO, increasing age, urban residence, currently married status and physical inactivity were common to both sexes. Parity was a likely explanation for higher risk among females (OR=6.8) compared to males (OR=2.3). A gradual reduction in AO was noted with increasing level of activity in both males (OR=1.4) and females (OR=2.8).

Higher socio-economic status was a key determinant of AO in males (education beyond A/Levels (β=0.89,OR=2.43); monthly income > Rs. 10,000 (β=1.57,OR=4.82); sedentary occupations ($p<0.001$).

Higher AO associated with frequent 'eating out' and 'large' meals ($p<0.05$) and, alcohol consumption ($p<0.001$) may be linked to high consumption of energy-dense foods. An independent urban- rural gradient was noted with AO ($p<0.001$). These characterize the early phase of the epidemiological transition.

Higher AO associated with low consumption of whole grain products and sugar-sweetened beverages and, high consumption of whole egg-products and deep-fried-foods ($p<0.05$) implies the influence of fast food culture on AO.

In conclusion, the prevalence of AO was high in Sri Lanka. Its determinants were multi-factorial, which included some population and behaviour-related characteristics among risk groups with AO.