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COHORT ANALYSIS OF STROKE MORTALITY IN THE POPULATION OF BELGRADE

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Introduction: Stroke has been the third leading cause of death in many countries. During the last decades, a declining mortality from this condition was seen in developed countries, whereas an increase in stroke mortality has been observed in eastern Europe. The objective of this analysis was to estimate stroke mortality rates and their trends in the population of Belgrade, during the period 1987-2001 with special emphasis on the assessment of age-period-cohort effects.
Methods: The data analysis included estimation of age-specific and standardized stroke mortality. Mortality rates were adjusted by direct method according to world population. Regression coefficient was determined by Fishers' test.
Results: The average age-adjusted stroke mortality rate in the population of Belgrade in the period observed was 83.9/100,000 (95%CI-confidence interval 73.3-94.5), in males 89.9/100,000 (95%CI 79.0-100.8) and in females 76.6/100,000 (95%CI 67.1-86.2). Stroke mortality rates in Belgrade show an increasing tendency, according to the linear model, for the period 1987-2001 (y=63.03+2.611x, p=0.030); in males (y=64.16+3.216x, p=0.006) and in females (y=62.03+1.827x, p=0.107). The age-specific mortality rates show low values (<4.5/100,000) in the age group of up to 34. In the age groups of over 35, mortality rates from stroke rise rapidly with the highest value in persons older than 85-2862.0/100,000 (95%CI 2455,7-3268,3). The highest increase of the age-specific mortality trend was observed in the age group of 70-74 (y=417.45+73.927x, p=0.001), with both sexes. In cohort analysis of age-specific death rates, all age groups of the youngest birth cohorts have 2-3 times higher stroke mortality risk than birth cohorts of the oldest generations, with both sexes.
Conclusions: The results suggested that the significant increasing tendency in stroke mortality in Belgrade druring the last 15 years, especially in younger generations, cannot be ingnored. This situation shows that prevention and control of major risk factors for stroke must be regarded as a priority.

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THE METABOLIC SYNDROME AND ANTIOXIDANT CONCENTRATIONS: FINDINGS FROM THE THIRD NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY, 1988-1994

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Introduction: Oxidative stress is thought to play a role in the pathophysiology of diabetes mellitus and cardiovascular disease. People with the metabolic syndrome are at increased risk for developing these conditions. But little is known about antioxidant status among the people with the metabolic syndrome.
Methods: Using data from the Third National Health and Nutrition Examination Survey (1988-1994), we compared circulating concentrations of vitamins A, C, and E, retinyl esters, five carotenoids, and selenium between 8808 United States adults aged ≥ 20 years with and without the metabolic syndrome.
Results: After adjusting for age, sex, race or ethnicity, education, smoking status, cotinine concentration, physical activity, fruit and vegetable intake, and vitamin or mineral use, participants with the metabolic syndrome had significantly lower concentrations of vitamin C and carotenoids except lycopene. With additional adjustment for serum lipid concentrations, concentrations of retinyl esters and vitamin E were significantly lower among participants with the metabolic syndrome compared to those without this syndrome. Retinol concentrations were similar between the two groups. After excluding participants with self-reported diabetes mellitus or a glucose concentration ≥ 126 mg/dL, the results were very similar. Consumption of fruits and vegetables also was lower among people with the metabolic syndrome.
Conclusions: These results show that United States adults with the metabolic syndrome have suboptimal concentrations of several antioxidants which may in part explain their increased risk for diabetes mellitus and cardiovascular disease.

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DIFFERENT METHODS FOR DETERMINATION OF THE ANKLE BRACHIAL INDEX INFLUENCE THE PREVALENCE ESTIMATE OF PERIPHERAL ARTERIAL DISEASE

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Introduction: The clinical importance of the early identification of lower extremity peripheral arterial disease (PAD) as a manifestation of generalised atherothrombotic disease has been increasingly acknowledged in the recent years. The determination of the ankle brachial index (ABI) is an efficient method of objectively documenting the presence of lower extremity PAD. Systolic blood pressure measurements in the tibial posterior and anterior artery in each leg and the brachial artery pressures are used to calculate the ABI. While this results in different options for determination of the ABI, only one mode of calculation is typically used and recommended by experts. However, up to now, it has not well been investigated, whether and how the different methods of calculating the ABI affect the prevalence estimates of PAD and the association of PAD with other manifestations of atherothrombotic disease.
Methods: In the cross-sectional part of the observational getABI study, 344 general practitioners throughout Germany determined the ABI in 6,880 consecutive, unselected patients aged 65 years or older with bilateral Doppler ultrasound measurements. Additional assessments comprised patient history with the focus on atherothrombotic diseases. The ABI was calculated according to the following methods: the highest arterial pressure of each leg (method #1), the lowest pressure (#2), only the systolic pressure of the tibial posterior (#3), and only the systolic pressure of the tibial anterior artery (#4) was used for determination of the ABI in each leg. In addition, ABI was determined after exercise, however, only in the tibial posterior artery of each leg (#5). An ABI < 0.9 in either leg was considered as evidence of PAD for all 5 ABI determination methods.
Results: The estimated prevalence of PAD was lowest using method #1 (18.0%) and highest using method #2 (34.5%). The prevalence moderately differed between method #3, #4, and #5 (24.2%, 29.0%, and 27.8%, resp.). The association between PAD and other manifestations of atherothrombotic disease was influenced by the mode of ABI determination, when odds ratios (ORs) were used for the description of this association (e.g. at the cut off point 0.9 the univariate ORs varied between 1.7 and 2.2 for the association of PAD and coronary artery disease). However, using receiver operating characteristic (ROC) methodology, the association was nearly the same with only slight differences between the resulting ROC curves.
Conclusions: The data confirm the high prevalence of PAD in primary care. While different methods of determining the ABI clearly affect the estimation of PAD prevalence, there is no effect on the association between PAD and other manifestations of atherothrombotic disease. However, to make data comparable across different epidemiological and clinical studies, one mode of calculation should be universally used or different cut off points should be applied.

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HYPERTENSION KNOWLEDGE ON CVD RISK FACTORS AND HEALTHY LIFESTYLE BEHAVIOURS AMONG ELDERLY PEOPLE IN POLAND

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Introduction and objective: CVDs are the main cause of death and one of the main causes of disability in Poland. Both mortality and disability from CVDs are clearly correlated with age and most pronounced among people in older age groups. The objective of this paper is to evaluate the level of knowledge on CVD risk factors and healthy lifestyle behaviors in random sample of people aged 65 and older.
Material and methods: The anonymous questionnaire was used by the trained interviewers who interviewed 1910 persons aged 65 and older. This group constituted 98% of nationwide sample of elderly Polish population. The diagnosis of arterial hypertension was based on doctor's diagnosis and treatment. The body mass index, level of physical activity and knowledge on the basic CVD risk factors was recorded. Also type and level of activity was described and categorized after the analysis of respondents' answers to questionnaire. The statistical analysis was performed using chi2 test (Epi-info 6 program).
Results: The prevalence of arterial hypertension in the study group was 51%. 95% of the patients with hypertension were treated with hypotensive agents. 70-80% of respondents were familiar with well-established risk factors of CVDs. About 50% of persons with hypertension were overweight or obese and more than 80% kept physical activity on various range. Untreated patients with hypertension had lower education level and their attitudes to medical procedure and diet restriction were sceptical.
Conclusion: There is necessity of improving effectiveness of health education in elderly population, in spite of their relatively high level of knowledge on healthy lifestyles. The high prevalence of overweight and obesity in elderly patients with treated hypertension was observed, which suggest that health education in this group should be more focused on dietary habits.

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ANIMAL PROTEIN AND ANIMAL FAT INTAKE AND THE RISK OF STROKE MORTALITY

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Introduction: A previous study among a cohort of 40,000 Japanese persons reported a protective effect of animal products intake on stroke mortality. We examined the association of total stroke and cerebral infarction mortality with intake of animal protein and animal fat and type of fat in a sub-group of the cohort.
Methods: Participants were members of the Adult Health Study, a longitudinal study of atomic-bomb survivors of Hiroshima and Nagasaki. During 1984-85, 3733 persons completed a 24-hour diary of food intake. Energy and macronutrient intakes were estimated through the responses to the diary. Stroke deaths were monitored until 2000. The associations between nutrients and stroke mortality were examined using a Cox proportional hazard model. The risks were stratified by sex and age, and adjusted for smoking and drinking habits, radiation dose, history of hypertension and diabetes, body mass index, vitamin supplementation, blood cholesterol level, and total energy intake.
Results: During the follow-up period, 90 deaths of stroke, including 60 deaths due to cerebral infarction were identified. The highest tertile of animal fat (mean intake of 36g/day), as compared to the lowest tertile (mean intake of 10 g/day), was significantly associated with cerebral infarction mortality (relative hazard 0.36; 95% confidence interval 0.16-0.83; p-trend = 0.009). Animal protein intake (highest tertile: 52g/day; lowest tertile: 20g/day) reduced the risk of cerebral infarction death, although not at the significant level (relative hazard 0.53; 95% CI 0.25-1.11; p-trend = 0.078). Animal fat and animal protein consumption decreased the risk of total stroke mortality, although not significantly.
Conclusions: Levels of animal fat and animal protein intakes in Japanese populations are much lower than the levels in Western populations. Within the low range of intake, animal fat and protein had protective effects against cerebral infarction mortality.

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HOMOCYSTEINE, CARDIOVASCULAR DISEASE RISK FACTORS, AND FOOD INTAKE IN THE POL-MONICA BIS PROJECT 2001

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Homocysteine (Hcy) is positively related to atherosclerotic vascular disease, and is of particular interest in the Polish population, where the prevalence of these disease is relatively high.
Since no representative data on homocysteine status of population has been available in Poland, in 2001 plasma homocysteine, folate and vitamin B_{12} levels, lipids profile and dietary habits have been determined in a representative subsample of 617 men and 657 women aged 20-74 years from urban (Warsaw) and urban (Tarnobrzeg province) participants of the Pol-MONICA Study sponsored by World Bank. Food intake was assessed by 24- hour recall. Mean (SD) Hcy concentration was 11,7 micro mol/L (5.4 micro mol/L) in men and 10.2 micro mol/L (4.7 micro mol/L) in women. Elevated Hcy levels (Hcy =12 micro mol/L) were seen in 33,1% of men and in 19,9% of women.
Persons with elevated homocysteine level were older, more often with subjective poor health status and low physical activity, and had significantly lower plasma folate and vitamin B_{12} compare to persons with normal Hcy level. No differences were found in body mass index, systolic and diastolic blood pressure, and lipids profile. Men with elevated Hcy level consumed significantly lower amount of grain products, meat and meat products, whereas women with elevated Hcy level consumed lower amount of dairy products, vegetables, fruit, added vegetable fat, and greater amount of alcohol than persons with normal Hcy level.
In multivariable logistic analysis the odds ratio of high Hcy level (Hcy greater than 12 micro mol/L) was modyfied by age, marital status, physical activity, BMI, plasma folate and vitamin B_{12} in men. In women it was modified by age, marital status, plasma folate and alcohol intake, according to logistic regression results. Diet did not influence on the odds ratio high Hcy level in both genders.

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SNORING AND BREATHING PAUSES DURING THE SLEEP. CHANGES ON THE PREVALENCE BETWEEN 30 AND 100 YEARS OF AGE

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Introduction: Several authors have described the decrease of the prevalence of snoring in men after the age of 60 years, following a continued increase up to that age. Is not clear neither if this pattern is repeated or not among women, nor the effect on it of the informing person. Whether these changes are accompanied of other sleep related sintomatology, as breathing pauses, also remains unclear. The objectives of the present study are: a) to know the trend of the prevalence of snoring and breathing pauses during the sleep on men and women 30 to 100 years old; b) to determine the bias introduced by the informing person.
Methods: The sleep characteristics of 1582 women (27.7% older than 70 years) and 1456 men (34.5% older than 70 years) -random sampling of the population of Vitoria-Gasteiz- 30 to 100 years old were studied through an interviewer-administered questionnaire. Response by the companion of the bedroom was preferred but, if this was not possible, information by the own subject or by other person living in the house was accepted. Those with a frequency of snoring of five or more days per week were labelled as snorers and those with a reported frequency of breathing pauses greater once a week as having breathing pauses during the sleep.
Results: Taking into account all the possible informing persons, prevalence of snoring increases, among men, from the 30-39 years of age (36%) up to the 50-59 years (55%) to decrease afterwards. Among women, the increase is between 30-39 years old (12%) and 70-74 (41%) when a decrease begins. The increase of the prevalence of breathing pauses is maintained until the 70-74 period in both men (from 17% to 32%) and women (from 2% to 15%) followed in both groups by a decrease. The same pattern is observed looking only at information provided by bedroom companions, but with greater prevalences reported for the youngest men -from 43% (30-30 years old) to 57% (50-59 years)- and also among the oldest groups of men.
Conclusion: *1)* Data confirms the decrease of the prevalence of snoring among men above 60 years of age, as described by other studies. This decrease occurs later on women, after 75 years of age. *2)* The prevalence of breathing pauses increases, in both sexes, up to 70-74 years of age. *3)* These trends are real and independent of the informing person. *4)* The information obtained from the own subject or from persons other than the bedroom companion might lead to an infraestimation of the prevalence of sleep disturbances.

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THE PREVALENCE OF CARDIOVASCULAR DISEASES RISK FACTORS AMONG KAUNAS MIDDLE AGED MALE POPULATION ACCORDING TO EDUCATION

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Introduction: The main objective of this study was to evaluate the prevalence of cardiovascular disease risk (CVD) factors in different educational groups among Kaunas middle aged male population.
Methods: We analyzed the data from the cross-sectional survey of the WHO MONICA project carried-out in 2001. The investigated (Kaunas, Lithuania) population aged 35-64, comprising 300 was analyzed by education. Subjects were classified into three categories according to the highest achieved education: primary, secondary and university (tertiary). Overweight was defined as body mass index (BMI) ≥25 kg/m^2, and obesity - as BMI ≥30 kg/m^2. Hypertension was defined when systolic blood pressure (SBP) was =140 mmHg, or/and diastolic (DBP) ≥90 mmHg, or normal BP (< 140/90 mmHg) if the person had taken antihypertensive drugs within the last two weeks. Serum total cholesterol level ≥5.2 mmol/l was classified as hypercholesterolemia. Regular smokers were the subjects who smoke at least one cigarette per day. Frequent drinking of strong alcohol drinks was defined as having strong alcohol drinks (example: vodka, brandy, whisky) at least once a week. Physically active person was defined, which exercise no less than two times per week at least 30 minutes till he sweats. Also participants were asked to evaluate their own health status.
Results: The prevalence of overweight and obesity among male population increased by education. The prevalence of overweight among low educated males was lower, comparing males with secondary and university background (57.1% vs. 66.1% and 67.1%). The obesity cases were not found among males with primary education, but prevalence of obesity was higher among high education level vs. secondary. The prevalence of hypertension did not differed significantly according education among investigated Kaunas middle-aged males, but it was a tendency to increase the prevalence by education. The highest prevalence of hypertension was among males with university degree (48.1%, vs. 43.6% secondary and 42.1% primary). The highest prevalence of hypercholesterolemia was among primary educated males (51.4%). The proportions among persons with university and secondary education were lower (46.8% and 35.5%). 35.4% of high-educated, 32.3% of secondary educated and 8.6% of primary educated males rated their health status as good or excellent. About half of males with primary and secondary education were regular smokers. This proportion was three times smaller among university-educated persons (16.5%). The prevalence of frequent drinking strong alcoholic drinks did not differ statistically significantly by education. Males with university and secondary degree were more physical active comparing with primary (25.3% and 25.3% vs. 11.4%).
Conclusions: The prevalence of obesity and hypertension increased by education in male population. Opposite situation was in prevalence of hypercholesterolemia. The males with university education more frequently rated their health as good and excellent, were more physically active and smoked less comparing with low educated males.

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THE PREVALENCE OF THE METABOLIC SYNDROME IN THE WARSAW ADULT POPULATION

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Introduction: The recent reports of WHO Consultations published in 1991 and the ATP III US NECP published in 2001 definied the metabolic syndrom and highlit the importance of its prevention and treating to prevent cardiovascular disease. Limited information is available about the prevalence of the metabolic syndrome in Polish population.
Aim: To estimate the prevalence of the metabolic syndrome in the Warsaw adult population and asses the changes between years 1988 and 2001.
Population and methods: The prevalence of the metabolic syndrome was estimated in two randomly selected samples of the Warsaw population examined in 1998 (1433 men and women aged 35-64 years) and in 2001 (1370 men and women aged 20-74 year). Personal characteristic, measurement of blood pressure, waist circumference height, weight and laboratory measurement (fasting glucose, triglicerides and HDL concentrations) were collected using standardized methods according to WHO MONICA Project Manual. Metabolic syndrome was definied according to 1999 WHO criteria.
Results: In the year 2001 the prevalences of the metabolic syndrome in the age range 20-74 years were 20,6% among men and 17,4% among women. In both genders the prevalence increased with age: from 2,7% (men) and 0% (women) in participants age 20-34 years to 36,6% and 39,7% respectively, in participants aged 65-74 years. For the age range 35-64 years the prevalence of the metabolic syndrome in 2001 compared to 1998 was 2 fold higher in men (19,9% vs 9,3%) and above 3-fold higher among women (18,8% vs 5,7).
Conclusion: The results show that metabolic syndrome is important and increasing problem in the Polish population. It is challenge for health care sector and socjety to prevent development of metabolic syndrom and its complications by means of implementation of nationalwide multifactorial prevention program.

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JOINT EFFECTS OF TRIGLICERIDES, TOTAL CHOLESTEROL, LDL-CHOLESTEROL, AND HDL-CHOLESTEROL ON CHD DEATH: WARSAW POL-MONICA FOLLOW-UP STUDY

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Objective: To assess the joint effect of baseline triglycerides (TG) and lipoprotein cholesterol on the risk of coronary heart disease (CHD) death in a population based cohort after controlling for other cardiovascular risk factors.
Material and methods: Men (n=1287) and women (n=1300) who participated in the first survey of the Warsaw Pol-MONICA Project in 1983-84 were followed until 1996 for CHD mortality. The total cholesterol (TC), high-density lipoprotein cholesterol (HDL-C), low-density lipoprotein cholesterol (LDL-C) and triglicerides (TG) were dichotomized within gender into low and high values. The cut points were defined for each lipid and gender separately and were selected as the lower cut point of the tertile where a distinct increase in CHD risk began (in univariate analyses). Points of division in mg/dL were:

Gender	TC	HDL-C	LDL-C	TG
Men	23	45	142	123
Women	228	52	148	107

The multivariable adjusted relative risk of CHD death for combinations of low or high TG, with low or high TC, HDL-C, and LDL-C were calculated using the proportional hazard model. Combinations with the lowest CHD risk were chosen as the reference group.
Results: Increased CHD risk was observed in all combinations high TG and all other lipids, bit it was significant only if high TG coexisted with high TC (RR-2.85 95%; CI: 1.50-5.39) or low HDL-C (RR-2.07; 95% CI: 1.15-3.72) or high LDL-C (RR-2,26; 95%; CI: 1.25-4.10). When TG was low, the increase in CHD risk was not significant even though TC or LDL-C was high or HDL-C was low. A formal test of interaction between TG and the other lipids was not significant, indicating that TG is an independent multiplicative risk factor for CHD death in Polish population.
Conclusion: Combined lipid disorders produce high CHD risk in Polish middle aged population and the role of TG is substantial. Our findings indicated that in the presence of high TC, high LDL-C or low HDL-C, TG should be considered as a risk factor at much lower levels than the recommended 150-200 mg/dl.

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THE 1992-2002 TRENDS OF MAIN CARDIOVASCULAR RISK FACTORS FOR CHRONIC DISEASES IN THE REGION OF MURCIA-A MEDITERRANEAN AREA IN THE SOUTHEAST OF SPAIN

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Introduction: The Region of Murcia shows, nationwide, high-standardized rates of incidence and mortality by heart attack and moderate ones by cancer. The first systematic review of main cardiovascular risk factors for chronic diseases was made in 1992. In 2002 another evaluation was made. Here we introduce the main results from both surveys as well as the observed trends.
Methods: In 1992 a survey was made among a representative sample of population formed by 3,091 people. The response rate to questionnaire variables was 61% and 48% to that requiring a blood sample. In 2002 another community survey was made to 2,562 people with a response rate of 77% to the questionnaire variables and 59% to those requiring a blood specimen. The evaluated risk factors have been: smoker (≥ 1 cig. /day), hypertension (≥ 140/90 mmHg or with pharmacological treatment), high cholesterol (≥ 200 mg/dL), obesity (BMI ≥ 30) and, sports physical activity (≥ 2 hours/week). We compare the whole prevalence, as well as by gender, and we proof that a trend do exits through a chi square test. The results are presented for a coincident age range in both surveys (20-65 years).
Results: The proportion of smokers shows, globally, a decreasing trend (42.8% vs. 34.5%; p<0.001) although, by gender, trends are opposed: while men had a 30% decrease, women had an increase of 17%. Hypertension prevalence decreased as a whole (28% vs. 22.7%; p<0.001) although by gender only women had a significant decreasing trend (37%). Both men and women had increased their high serum cholesterol prevalences, which represents a global increase of 31% (39.5% vs. 51.7%; p<0.001). Although without comparative figures from 1992, the HDL-cholesterol prevalence is high being only one out of ten people at a level of risk. High prevalence of obesity is maintained (20.5% vs. 19.7%; NS) although by gender an opposite trend does exist. Men's increases whereas women's decreases, both by a significant 24%. Finally, sports physical activity ≥ 2 hours/week increased (17.8% vs. 33.5%; p<0.001) with a marked increase in men (80%) while, in women rates, were duplicated (12.5% vs. 25.9%).
Conclusions: The population extent of main cardiovascular risk factors for chronic diseases shows important variations in this decade, being more favorable for women. The most worrying trends are the raising of smoking in women, obesity in men and, serum cholesterol in both genders. However, the lipid profile in this population is not so clearly damaging as in others, mainly because of the high prevalence of HDL cholesterol in serum. Sports physical activity has had an outstandingly increase in both genders.

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RELACIÓN DE LA MORTALIDAD POR ENFERMEDADES CARDIOVASCULARES EN LA PENÍNSULA IBÉRICA Y CONCENTRACIÓN DE CALCIO Y MAGNESIO EN AGUAS DE CONSUMO

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Introducción: Varios estudios epidemiológicos llevados a cabo desde 1957 han puesto de manifiesto la existencia de una relación inversa entre la mortalidad cardiovascular por diversas causas y la dureza de las aguas. Varios autores afirman que es la concentración de magnesio en el agua la responsable de esta asociación ya que el riesgo de padecer una enfermedad cardiovascular se incrementa más por ingesta baja de magnesio que de calcio. Por ello, nos planteamos evaluar la existencia de una relación estadística entre mortalidad cardiovascular y concentración de magnesio en agua de consumo en la Península Ibérica.
Material y métodos: El estudio comprende datos de 252 municipios localizados en España y Portugal y 9.863.624 habitantes. Los datos de calcio y magnesio en agua de consumo fueron facilitados por las autoridades de Salud Pública de las 17 comunidades autónomas españolas y por el Instituto de Higiene y Medicina Social de Portugal; la mortalidad por enfermedades cardiovasculares, correspondiente al año 1993 por el Instituto Nacional de Estadística en España y por el Instituto de Higiene y Medicina Social en Portugal. Los datos fueron analizados estadísticamente para obtener parámetros de correlación y regresión lineal. Se realizaron distintas transformaciones hasta encontrar la de mejor ajuste a los datos de estudio. Se buscó una ponderación adecuada que reflejase el tamaño de la población y evitara la influencia de grandes ciudades.
Resultados: La concentración media de magnesio en el agua de consumo en las áreas consideradas fue de 0,70 mmol/l (DV 0,66) y la de calcio 1,61 mmol/l (DV 1,19). Se realizaron transformaciones logarítmicas tanto para la mortalidad por todas las enfermedades cardiovasculares como para el magnesio (este mismo ajuste se ha encontrado en estudios epidemiológicos realizados en Canadá y Sudáfrica) y se encontró una correlación negativa estadísticamente significativa ($p < 0,001$).
Conclusión: Estos resultados sugieren que la tasa de mortalidad por enfermedades cardiovasculares está influenciada por la concentración de magnesio en agua de consumo.

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PSYCHOSOCIAL FACTORS ASSOCIATED WITH HOSPITAL READMISSIONS OF OLDER PATIENTS WITH HEART FAILURE

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Introduction: Rehospitalizations among older patients with heart failure (ROPHF) are extremely frequent. Their determinants are not well known, but could be related to the intrinsic characteristics of the disease, the type of services provided by the health system, and psychosocial factors shared by the patients and the caregivers. Objective: To examine the association between psychosocial factors and ROPHF.
Methods: Systematic review of the literature published from 1966 to the present. Articles were identified from searches in Medline (1966-2002) and Embase (1980-2002), in the Cochrane Library, and scans of reference lists of review articles and of all manuscripts selected for review. Inclusion criteria were: a) Papers reporting any data on the relationship between psychosocial factors (including demographic, health and dependency status indexes, socio-economic level, health related behaviour, quality and characteristics of care) and ROPHF; b) Study includes patient aged 65 years or older with a previous hospitalisation due to heart failure. Exclusion criteria were: *a)* From the reported data, it was not possible to quantify the association between the psychosocial variable and the rehospitalization; *b)* Less or equal than 25% patients suffered heart failure; *c)* Less than 50% patients were 60 years old or over; *d)* Papers which duplicated information from other papers. Disagreements in data extraction were settled through joint discussion of the research team.
Results: A total of 1,783 articles were considered for inclusion, of which only 93 finally provided useful information for this review. There are relatively few studies assessing the association between pure psychosocial variables and ROPHF. Demographic factors were the most frequently studied (26 papers), followed by health status indexes (23 papers). Quite surprisingly, we found no evidence of the association between age and ROPHF. However, rehospitalizations appear to be more frequent among males, african-americans, patients with worse self-perceived health, with higher Charlson comorbidity index, presenting psychological alterations, with higher number of previous hospitalisations, with longer stay during the index hospitalisation, without emotional support, and among smokers. The medical speciality (cardiology, internal medicine, geriatrics) of the physician who cares for the patient does not seem to be related to the frequency of rehospitalization, although some characteristics of care (insurance: Medicaid, Medicare, and low quality discharge planning) are risk factors for rehospitalization.
Conclusions: As age per se is not associated with higher risk of rehospitalization, diagnostic or treatment nihilism to prevent readmissions in the more aged it is not clinically (and obviously not ethically) justified. Simple indicators such as self perception of health status, Charlson comorbidity index or the number of previous hospitalizations are related to a greater risk of rehospitalization. The fact that smoking is associated with more frequent OHFPR provides additional support for quitting counselling.

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INCIDENCIA DE DMID EN NIÑOS DE 0 A 14 AÑOS EN LA COMUNIDAD DE MADRID. 1996-2001

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La diabetes tipo I es una de las enfermedades crónicas mas frecuentes de la infancia. En el año 1996 se inició en La Comunidad de Madrid el Programa de Prevención de Diabetes, y dentro de este se enmarca el Registro de Incidencia de DMID en niños de 0 a 14 años. El objetivo es obtener estimaciones fiables y comparables de incidencia de la enfermedad por sexo, cohorte de nacimiento, área geográfica y tiempo. Se presentan aquí los resultados obtenidos desde octubre de 1996 a septiembre de 2001.
Método: Captura-Recaptura. *Definición de caso:* Los criterios establecidos por el grupo DERI. *Fuente de información principal:* Notificación de casos nuevos en niños de 0 a 14 años. Participan los Servicios de Pediatría de todos los Centros Hospitalarios de la red sanitaria pública y los dos centros privados de mayor relevancia. *Otras fuentes:* ADE (Asociación Diabéticos de España).
Resultados: Se han incluido en este trabajo los 558 casos recogidos por el sistema de notificación y 43 a través de los datos de ADE. La tasa de incidencia media anual es de 16/100.000, siendo por sexo de 16,2/100.000 en varones y 15,7/100.000 en mujeres. La tasa por grupos quinquenales es de 12,5/100.000 en el grupo de 0 a 4 años, de 17,8/100.000 en el de 5 a 9 años y de 17,3/100.000 en los niños de 10 a 14 años. Las tasas de incidencia en los 5 años de estudio, oscila de 13,3 en el período 2000/2001 a 16,6 en el período 1999/2000. Las tasa por Área Sanitaria según el lugar de residencia en el momento del diagnóstico no ofrecen un patrón geográfico determinado. En la distribución temporal se observa que en los meses de otoño-invierno se diagnostican el 56,2% de los casos y en primavera-verano el 43,7%.
Conclusiones: Se observa un incremento en la incidencia de DMID en menores de 15 años en relación a la estimada por un estudio previo realizado en nuestra comunidad en el periodo 1985-1988, tanto globalmente como en los tres grupos de edad estudiados. Nuestros datos, en cambio, arrojan cierta estabilidad en la incidencia a lo largo de los 5 años, lo que nos hace pensar que esta disparidad pueda ser por las diferencias metodológicas entre los dos estudios.

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FAMILY HISTORY OF DIABETES AND RISK OF TYPE 1 DIABETES MELLITUS

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Introduction: Both genetic and environmental factors are thought to play an important role in the aetiology of Type 1 diabetes. To quantify in detail the familial risk to Type 1 diabetes in children under 5 years of age a nationwide population-based case-control study was performed in Germany during 1992-95.
Methods: Data from 760 incident cases (71% of eligible) and 1871 population controls (43% of eligible), individually matched for age, sex, and place of residence, were analysed. Information on family history of type 1 and type 2 diabetes in parents, siblings and grandparents as well as on putative environmental risk factors were collected using a mailed parent-administered questionaire. Data were analysed by multivariate conditional logistic regression, in particular adjusting for relevant confounders: family' socio-economic status, duration of overall breastfeeding, maternal age at delivery, number of children in the family.
Results: A family history of type 1 diabets was reported in 9.9% (75) of cases and 1.1% (20) of controls. The respective numbers regarding first-degree relatives were 7.5% (57) and 0.7% (13). Among cases 3.8% (29), 2.0% (15), 1.7% (13), 2.8% (21) had a type 1 diabetic father, mother, sibling or grandparent. The respective estimates among controls were 0.2% (4), 0.4% (7), 0.1% (2) and 0.4% (7). A family history of type 1 diabetes was significantly associated with an increased risk for type 1 diabetes (OR (95%-CI): 12.8 (7.2-22.9)). Regarding first-degree relatives the OR was 14.5 (7.3-28.6). Further, the risk of type 1 diabetes was also increased by an isolated history of type 1 diabetes in fathers, mothers, siblings or grandparents. The respective ORs were 24.6 (7.4-82.4), 6.9 (2.6-18.5), 23.1 (5.0-108.0) and 8.0 (3.0-21.6). A family history of type 2 diabetes did not significantly affect the type 1 diabetes risk. When adjusting for relevant environmental confounders OR estimates were only slightly altered.
Conclusions: This large nationwide population-based case-control study provides detailed valid estimates of the familial risk of type 1 diabetes in preschool age relevant for patients' advice. It is confirmed that a history of type 1 diabetes in fathers or siblings confers a three times higher risk than a type 1 diabetes history in mothers or grandparents.

378 A PROSPECTIVE STUDY OF RISK FACTORS FOR DIABETIC FOOT ULCERATION

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Introduction: Diabetes mellitus is an important chronic disease both in terms of the number of persons affected and the considerable associated morbidity. The objective of our study has been to analyze risk factors for foot ulceration among patients with Diabetes Mellitus type II.
Methods: In our project we used a prospective cohort study in which we enrolled patients with diabetes mellitus type II who were treated at Northeast Foot Surgery Clinic, Cohoes, NY, USA, between 1997-2002. Statistical analyses were performed using Epi Info 2002 software.
Results: A total of 317 diabetic patients (117 females - 54.6% and 144 males - 45.4%) were included in this study. The mean age was 69.08+/-14.6 years. This sample was further divided in 2 batches: batch A, with foot ulcerations (29 patients - 9.15%) and batch B, without foot ulcerations (288 patients - 90.85%). Among the patients included in batch A, 19 had improper footwear (65.52%), 29 had peripheral neuropathy (100%), 11 had high blood pressure (37.93%), 8 had vasculopathy (27.59%) and 15 were exposed to stress (51.72%). Among the patients included in batch B, 4 had improper foot wear (1.39%), 226 had peripheral neuropathy (78.47%), 75 had high blood pressure (26.04%), 20 had vasculopathy (6.94%) and 93 were exposed to stress (32.29%). Comparing the batches A and B we found a very significant difference for peripheral neuropathy (p=0.005273). The risk factors assessed in our study were improper foot wear (RR=24.29; 95% CI: 12.84-45.94), vasculopathy (RR=3.93; 95% CI: 1.92-8.05), stress (RR=2.07; 95% CI: 1.04-4.14) and high blood pressure (RR=1.64; 95% CI:0. 81-3.33).
Conclusions: Peripheral neuropathy and improper footwear could be confirmed as strong predictors for foot ulcerations. Other risk factors for diabetic foot ulcerations, found in our study, were vasculopathy, stress and high blood pressure. Early detection of these risk factors and their multispecialities approach can prevent the complications occurrence, such as diabetic foot ulcerations and amputations.

379 ESTUDIO DESCRIPTIVO DEL CONSUMO DE ALCOHOL Y TABACO ENTRE ESTUDIANTES DEL ULTIMO CURSO DE LA LICENCIAUTURA DE FARMACIA

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Introduccion: El impacto del consumo de alcohol y tabaco en España esta cambiando debido a la incorporación de nuevos hábitos en el estilo de vida. El consumo de tabaco,según datos de la Encuesta Nacional de Salud, ha disminuido en varones e incrementado en mujeres.
Objetivo: Valorar el consumo de alcohol y tabaco, estratificado por sexo, su dependencia y posibles efectos sobre la salud en estudiantes del último año de la Licenciatura de Farmacia en Valencia.
Material y métodos: Se ha realizado un estudio cross-sectional en 849 estudiantes del último curso de la Licenciatura de Farmacia en Valencia, durante los cursos académicos 2001- 2 y 2002-3. La encuesta ad-hoc, obtenida de forma voluntaria y anónima, consta de los siguientes apartados: información demográfica, estado de salud, consumo de alcohol y tabaco.
Resultados: Se observa un predominio de las mujeres (77,2%) frente a los varones (22,8%). La edad de los estudiantes oscila entre los 22 y 24 años. El 85.0 % presenta un estado de salud bueno. Un 82 % declara no estar tomando tratamiento ; mientras que las causas de los que afirman recibir tratamiento (18 %) son: alergia, anticonceptivos, anemia, migraña, resfriado y gripe. Un 21,8% presenta molestias: dolor de garganta (5,4%), dolor de cabeza (3,1%), tos (2.4 %), carraspeo (5,7%), y otras causas diversas, principalmente problemas respiratorios (3,3%) y malestar general (1,1%). En cuanto al alcohol, el 26,9% son abstemios, 9,8% bebedores ocasionales, 60,9% bebedores de fines de semana, y el 2,4% bebedores regulares. El 52,8% se declaran no fumadores, el 36,0% fuman actualmente, y los ex fumadores constituyen el 11,2%. El 67,7% de los fumadores no está de acuerdo con su hábito tabáquico, presentando el 55,3% algún tipo de motivación para abandonarlo.
Conclusiones: En el 5º curso de la Licenciatura de Farmacia de Valencia, se observa un porcentaje elevado de consumo de alcohol, principalmente de fin de semana (60,9%), resultado similar al obtenido en un estudio realizado con estudiantes de la Facultad de Farmacia de Vitoria (60,6%). El porcentaje de fumadores (36,0%) es superior a los obtenidos en estudiantes de medicina de la Universidad Autónoma de Barcelona (25,7%) y de la Universidad de la Laguna (26,2%). Las edades de comienzo de los hábitos alcohólico y tabáquico oscilan principalmente entre los 15 y 18 años. Es necesario potenciar campañas educativas en materia de alcohol y tabaco dirigidas a este colectivo de futuros profesionales sanitarios.

380 DURATION OF TYPE 2 DIABETES IS AN INDICATOR FOR OCCURRENCE OF NEPHROPATHY

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Introduction: Diabetic nephropathy is the major cause of end-stage renal disease (ESRD) and 40% of type 2 diabetes will progress to diabetic nephropathy. In order to prevent of ESRD, a diabetic nephropathy screening and the appropriate intervention were recommended. The purpose of this study was to determine the prevalence of diabetic nephropathy and to define associated factors among type 2 diabetes mellitus. Finally, we assessed the association between the duration of type 2 diabetes and diabetic nephropathy.
Methods: During 1991-93, a community-based survey of type 2 diabetes for inhabitants aged 30 and over in Kinmen was conducted. A total of 971 type 2 diabetes was ascertained. In 1999, we carried out a screening for diabetic nephropathy. Five hundreds and seventy-seven (59.4%) out of type 2 diabetes were examined. Diabetic nephropathy was defined as a random urinary protein-to-creatinine ratio (UPCR) (ratio≥0.2) that had been indicate to a tool of screening for nephropathy. The duration of diabetes was classified into four categories: ≤9 years, 10-12 years, 13-15 years, and ≥16 years.
Results: One hundred and seventy-five of 577 of diabetes were diagnosed with diabetic nephropathy, and the prevalence was 30.3 %. Based on multiple logistic regression analysis, the significant associated factors for diabetic nephropathy were systolic blood pressure, duration of diabetes, BUN, and HbA1c.Odds ratios for duration were estimated as 1.53 (95%CI: 0.51-4.56) in 10-12 years, 9.50 (95%CI: 1.13-80.18) in 13-15 years, and 11.12(95%CI: 1.29-96.12) in ≥16 years compared with ≤9 years.
Conclusions: This community-based screening for diabetic nephropathy displayed systolic blood pressure, duration of diabetes, BUN, and HbA1c were the most important associated factors. Duration of diabetes is an indicator for occurrence of nephropathy.

381 HYPERTENSION VERSUS CONSCIOUS MODIFICATION OF FOOD HABITS IN CITIZENS OF LODZ-GORNA DISTRICT, ACCORDING TO THE CINDI HEALTH MONITOR SURVEY

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Hypertension (HA) is a chronic and noncommunicable disease. It distinguishes itself by multiple ethiology and does not only mean a raised level of blood pressure, but it concerns various cardiovascular and metabolic distempers. There exist two types of treatment for HA: a pharmacological and non-pharmacological one. It is necessary to cure HA in a multidirectional manner. And crucial, in terms of the non-pharmacological treatment, is the sanitary education, aimed both at ill individuals, and population at risk. Principally, the education should be focused upon inducing to lifestyle change. A decrease of blood pressure will tend to provoke a decline in mortality due to cardiovascular diseases. The lifestyle modification will improve the efficiency of pharmacological treatment methods.
The purpose of this study is making a statement whether exist any differences in food habits between two groups of participants (men and women). The first one are the individuals who during last 12 months have been diagnosed as having, or been treated for hypertension. The second one consists of the patients who have been diagnosed as having normal blood pressure, and not been treated for that problem then. Moreover, we answer the question whether the consciousness of having HA can induce to the lifestyle change.
The material and the methods. In the year 2001, according to the CINDI Health Monitor Survey, we did research work on a sample of 1832 persons (1002 men - 54,7% of the whole population scoped, and 830 women - 45,3%), aged 18-64. The sample was drawn form the list of electors, registered as dwellers of Lodz-Gorna district. The sample was proportionally weighted by sex and age. The independent variable in the study is the answer - "YES or NO" - to one of the questions from the CINDI Questionnaire, which reads as follows: "During last 12 months have you been diagnosed as having, or been treated for high blood pressure (hypertension)?" We realize a comparative characterization of both groups of participants: those who answer "YES", and those who do "NO". Additionally, we estimate the consumption of various foods and check out the respondents' declarations referring to the lifestyle modification (in some selected aspects).
The results and the conclusions. In the domain of the lifestyle and food habits change we did not find any statistically significant differences between both groups of respondents. The results of the study are a proof of a fact that individuals having hypertension do not follow their doctors' advice or are not advised by their physicians in terms of the HA prevention. The weight of the integrated prophylaxis of HA should be moved towards the sanitary education aimed both at individuals who have been and not been diagnosed as having HA. The lifestyle modification will be to the patients' advantage, and it will tend to reduce the HA risk and enhance the pharmacological treatment efficiency.

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PUBLIC UNDERSTANDING OF THE CAUSES OF HIGH STROKE RISK IN NORTH-EAST BULGARIA

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Introduction: Stroke incidence in N-E Bulgaria is amongst the highest yet reported for European populations but the extent of public knowledge of the modifiable causes of stroke is undocumented.
Method: 91 subjects aged 45 to 74 living in a rural town to the south-west of Varna and 97 subjects living in the city were quota sampled from the lists of local GPs. During interviews conducted in January - March 2000 respondents were asked: 'Why do you think stroke is so common in this region?'. Recorded first and other reasons offered were post-coded and then grouped into more inclusive categories.
Results: 178 respondents offered at least one reason. Stress (101) and poverty (20) accounted for 68% of the first mentions. Dietary factors other than salt and fruit and vegetables accounted for 40% of other mentions. There were no mentions at all of high blood pressure and no first mentions of smoking or salty food or low consumption of fresh fruit and vegetables.
Numbers by category for respectively first and other mentions were:

Stress:	101,	70;
Poverty:	20,	59;
Diet salt / salty preserves:	0,	13;
insufficient fruit & veg /vitamins:	0,	4;
other diet:	26,	130;
Pollution/environment:	19,	16;
Lifestyle, smoking:	0,	10;
other lifestyle:	10,	17;
Biomedical (excl blood pressure):	2,	3;
Total:	178,	322

Discussion: It is striking that established risk factors for stroke were so comprehensively overlooked by these respondents. Education about established risk factors for stroke should be a public health priority in Bulgaria whilst the search continues for additional factors accounting for high stroke risk in this region.

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HYPERTENSION CONTROL IN SMALL BUT WELL-CHARACTERISED URBAN AND RURAL POPULATIONS IN VARNA REGION

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Introduction: Stroke incidence and case fatality are very high in rural areas near Varna but are less elevated in city residents. Few studies have reported on the effectiveness with which hypertension is controlled in Bulgarian populations.
Methods: 81 rural residents and 78 urban residents aged 45 to 74, took part in a study in 2000. Blood pressure was measured in the subjects' home on two occasions one week apart in winter and again in summer. On each occasion two measurements were made with a standard mercury sphygmomanometer after 5 minutes rest in the sitting position. Hypertension was defined as a usual (mean) systolic blood pressure (SBP) greater than 140 mmHg or a usual diastolic blood pressure (DBP) greater than 90 mmHg or verified drug treatment for hypertension. Hypertensives were classified as 'aware', 'treated' or 'controlled' if mean pressures were below 140/90 mmHg.
Results: Urban females had the best experience of hypertension control whilst rural males had the worst. In the former 29/40 were hypertensive and of these 27/29 were 'aware', 26/29 were 'treated' and 15/29 were controlled. Among rural males, 30/37 were hypertensive and of these, 23/30 were aware, 18/30 were treated but 0/30 were controlled.
A majority of the medications were calcium antagonists or ACE inhibitors. Thiazide diuretics were not commonly used.
Discussion: Proportions 'aware' and 'treated' are not low but the effectiveness of control is poor - especially in the rural areas (2/57) where stroke risks are highest. Further study is urgently required of the effectiveness of hypertension control in Bulgarian populations at high risk of stroke. Given the common use of relatively expensive medications, there may be considerable scope for increasing the cost-effectiveness of hypertension control.

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SEASONAL VARIATION IN BLOOD PRESSURE AND IN PROPORTIONS HYPERTENSIVE IN SMALL BUT WELL-CHARACTERISED URBAN AND RURAL POPULATIONS IN VARNA REGION

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Introduction: Blood pressure has been reported to be higher in winter and this effect may be largely due to ambient temperature. We have made multiple blood pressure measurements in Bulgarian populations with limited access to central heating in winter or to cooling in summer.
Methods: 81 rural residents and 78 urban residents aged 45 to 74, divided approximately equally by sex and age-strata, took part in a validation study of dietary measurement in 2000. Blood pressure was measured in the subjects' home on two occasions one week apart in winter and again in summer. On each occasion two measurements were made with a standard mercury sphygmomanometer after 5 minutes rest in the sitting position. The indoor temperature at the time of measurement was recorded. The 4 measurements within each season were made by the same fieldworker and data quality was monitored using digit preference and other published guides. Subjects were deemed to meet the pressure criteria for hypertension if they had a usual systolic blood pressure (SBP) greater than 140 mmHg or a usual diastolic blood pressure (DBP) greater than 90 mmHg, where 'usual' refers to the mean of 4 available readings for either winter or summer or of 8 readings for both combined (available for 148 subjects). Statistical analysis was performed with proc glm in SAS ver 8 taking account of the repeated nature of the observations within individuals.
Results: Mean (95% CI) SBP was 137.3 (133.9-140.7) mmHg in summer compared to 149.7 (145.5-153.8) mmHg in winter and mean DBP was 85.1 (82.0-88.2) mmHg in summer compared to 91.8 (88.4-95.2) mmHg in winter. As a result the proportion exceeding the pressure criteria for hypertension was 47% (n =69) in summer compared to 70% (n=103) in winter - or to 61% (n=90) based on mean pressures over both seasons. Ambient temperature at the time of measurement was an average of 7 degrees higher in summer (25.5º vs 18.5º) and season accounted for 55% of the variation in temperature at the time of measurement. In models of the relationship between ambient temperature and blood pressure that also included season, the coefficient for temperature became statistically insignificant, suggesting that if blood pressures are responding to seasonal changes in ambient temperatures they are not doing so on a short-term (hour to hour or day to day) basis.
Discussion: Blood pressures in these populations are subject to substantial seasonal variation. When characterising blood pressure distributions, including proportions above cut points for hypertension, it may be important to note the season and the ambient temperature at the time of measurement. Seasonal variation in blood pressures may contribute to a winter excess in stroke incidence and in all cause mortality.

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SODIUM AND POTASSIUM EXCRETION IN WINTER AND SUMMER IN URBAN AND RURAL BULGARIAN POPULATIONS HETEROGENEOUS FOR STROKE RISK

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Introduction: The high level and geographic variability of stroke risk in Bulgaria awaits explanation. Sodium (Na) may increase stroke risk independently of its effect on blood pressure and potassium (K) may be protective. Urinary sodium and potassium excretions in representative Bulgarian populations have not been reported.
Methods: During one week in winter and one week in the following summer in 2000, 81 rural residents and 78 urban residents aged 45 to 74, divided approximately equally by sex and age-strata, made 24 hour urine collections on days 1 and 7. Completeness of collection was monitored by the administration of three 80mg tablets of para-amino benzoic acid (PABA). Aliquots were kept at -20 degrees until analysed in Cambridge. For collections with PABA recoveries in the range of 70-85%, complete excretions were estimated as (93 - estimated PABA recovery (%)) x 0.82 for sodium and x 0.60 for potassium. Because the data were unbalanced, least square means were calculated using proc glm in SAS ver 8.02. Contrasts between sexes were based on unweighted means of the 2 locations for each sex and contrasts between locations were also based on the unweighted means of constituent sexes. Contrasts between seasons were within individuals.
Results: 122 subjects provided at least 3 collections with at least 70% PABA recovery of whom 29 had 3 usable collections and 46 had 4 apparently complete collections. Overall mean Na excretion was 240 (95% CI 233-246) mmol/d (compared to 242 (234-248) mmol/d for the 98 who provided at least 3 apparently complete collections). Sodium excretion was 51 (38-64) mmol/d higher in males than females, and was not significantly higher in the rural areas (difference 7 (-6-20) mmol/d). It was 31 (19-42) mmol/d higher in winter compared to summer, resulting in a contrast between 304 (279-329) mmol/d in rural males in winter and 206 (192-221) mmol/d in urban females in summer. Overall K excretion was 68 (66-70) mmol/d without significant differences in one-way comparisons by sex or location. However there was a greater seasonal change in K excretion in rural populations, rising from a low of 49 (46-52) mmol/d in winter to 84 (81-87) mmol/d in summer compared to a change from 58 (55-60) mmol/d to 80 (77-83) mmol/d in the urban population.
Conclusions: Salt consumption in these populations is very high, comparable to that reported for northern China (though the Intersalt data used for this external comparison are likely to underestimate true intakes as they are not corrected for incomplete collection). By contrast, K intakes are not notably low - as they are in many other 'high salt' cultures. Further investigation of the role of dietary sodium in Bulgaria's high stroke rates is warranted.