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Metab Syndr Relat Disord. 2016 Dec;14(10):475-482.

Association Between the Duration of Periodontitis and Increased Cardiometabolic Risk Factors: A 9-Year Cohort Study.

Morita T, Yamazaki Y, Fujiharu C, Ishii T, Seto M, Nishinoue N, Sasaki Y, Nakai K, Tanaka H, Kawato T, Maeno M.

BACKGROUND: Epidemiological studies have reported that periodontitis and cardiometabolic disease such as cardiovascular disease and type 2 diabetes are associated; however, there have been very few prospective cohort studies on this topic. Therefore, we conducted a 9-year follow-up study to examine the relationship between the duration of periodontitis and cardiometabolic risk factors, including hypertension, hyperglycemia, dyslipidemia, and obesity.
METHODS: The study participants comprised 572 adult industrial workers (417 men and 155 women; mean age, 37.4 years) who had undergone annual medical and dental health examinations from 2003 to 2012; the evaluation of the four cardiometabolic risk factors in 2003 revealed normal values in all the participants. We investigated the relationship between the cumulative duration of the presence of periodontal pockets, which is a major symptom of periodontitis, and the presence of cardiometabolic risk factors after 9 years using multiple logistic regression analysis.
RESULTS: The odds ratio (OR) for the presence of ≥1 cardiometabolic risk factor in participants with a cumulative duration of periodontal pockets for ≥6 years was significantly higher than that in participants without pockets. The ORs for the onset of obesity, hypertension, dyslipidemia, and hyperglycemia were higher in participants with a cumulative duration of periodontal pockets for ≥6 years than those in participants without pockets or in participants with a cumulative duration of periodontal pockets for ≤5 years, and all the differences, except dyslipidemia, were significant.
CONCLUSIONS: Chronic periodontitis was significantly associated with having cardiometabolic risk factors during the 9-year observation period, suggesting that the risk of cardiometabolic disease might increase in people who have untreated periodontitis.

PMID: 27740886 [PubMed - in process]

Nat Rev Cardiol. 2017 Jan;14(1):39-55

Thyroid hormones and cardiovascular disease.

Jabbar A, Pingitore A, Pearce SH, Zaman A, Iervasi G, Razvi S.

Myocardial and vascular endothelial tissues have receptors for thyroid hormones and are sensitive to changes in the concentrations of circulating thyroid hormones. The importance of thyroid hormones in maintaining cardiovascular homeostasis can be deduced from clinical and experimental data showing that even subtle changes in thyroid hormone concentrations - such as those observed in subclinical hypothyroidism or hyperthyroidism, and low triiodothyronine syndrome - adversely influence the cardiovascular system. Some potential mechanisms linking the two conditions are dyslipidaemia, endothelial dysfunction, blood pressure changes, and direct effects of thyroid hormones on the myocardium. Several interventional trials showed that treatment of subclinical thyroid diseases improves cardiovascular risk factors, which implies potential benefits for reducing cardiovascular events. Over the past 2 decades, accumulating evidence supports the association between abnormal thyroid function at the time of an acute myocardial infarction (MI) and subsequent adverse cardiovascular outcomes. Furthermore, experimental studies showed that thyroid hormones can have an important therapeutic role in reducing infarct size and improving myocardial function after acute MI. In this Review, we summarize the literature on thyroid function in cardiovascular diseases, both as a risk factor as well as in the setting of cardiovascular diseases such as heart failure or acute MI, and outline the effect of thyroid hormone replacement therapy for reducing the risk of cardiovascular disease.

PMID: 27811932 [PubMed - in process]

Int J Med Inform. 2016 Dec;96:24-37

Development of an integrated e-health tool for people with, or at high risk of, cardiovascular isease: The Consumer Navigation of Electronic Cardiovascular Tools (CONNECT) web application.

Neubeck L, Coorey G, Peiris D, Mulley J, Heeley E, Hersch F, Redfern J.

BACKGROUND: Cardiovascular disease is the leading killer globally and secondary prevention substantially reduces risk. Uptake of, and adherence to, face-to-face preventive programs is often low. Alternative models of care are exploiting the prominence of technology in daily life to facilitate lifestyle behavior change.

OBJECTIVE: To inform the development of a web-based application integrated with the primary care electronic health record, we undertook a collaborative user-centered design process to develop a consumer-focused e-health tool for cardiovascular disease risk reduction.

METHODS: A four-phase iterative process involved ten multidisciplinary clinicians and academics (primary care physician, nurses and allied health professionals), two design consultants, one graphic designer, three software developers and fourteen proposed end-users. This 18-month process involved, (1) defining the target audience and needs, (2) pilot testing and refinement, (3) software development including validation and testing the algorithm, (4) user acceptance testing and beta testing. From this process, researchers were able to better understand end-user needs and preferences, thereby improving and enriching the increasingly detailed system designs and prototypes for a mobile responsive web application.

RESULTS: We reviewed 14 relevant applications/websites and sixteen observational and interventional studies to derive a set of core components and ideal features for the system. These included the need for interactivity, visual appeal, credible health information, virtual rewards, and emotional and physical support. The features identified as essential were: (i) both mobile and web-enabled 'apps', (ii) an emphasis on medication management, (iii) a strong psychosocial support component. Subsequent workshops (n=6; 2×1.5h) informed the development of functionality and lo-fidelity sketches of application interfaces. These ideas were next tested in consumer focus groups (n=9; 3×1.5h). Specifications for the application were refined from this feedback and a graphic designer iteratively developed the interface. Concurrently, the electronic health record was linked to the consumer portal. A written description of the final algorithms for all decisions and outputs was provided to software programmers. These algorithmic outputs to the app were first validated against those obtained from an independently programmed version in STATA 11. User acceptance testing (n=5, 2×1.0h) and beta testing revealed technical bugs and interface concerns across commonly-used web browsers and smartphones. These were resolved and re-tested until functionality was optimized.

CONCLUSION: End-users of a cardiovascular disease prevention program have complex needs. A user-centered design approach aided the integration of these needs into the concept, specifications, development and refinement of a responsive web application for risk factor reduction and disease prevention.

PMID: 26847070 [PubMed - in process]

J Sports Sci. 2016 Nov 28:1-8. [Epub ahead of print]

Associations between prolonged sedentary time and breaks in sedentary time with cardiometabolic risk in 10-14-year-old children: The HAPPY study.

Bailey DP, Charman SJ, Ploetz T, Savory LA, Kerr CJ.

This study examines the association between prolonged sedentary time and breaks in sedentary time with cardiometabolic risk in 10-14-year-old children. This cross-sectional design study analysed accelerometry-determined sedentary behaviour and physical activity collected over 7 days from 111 (66 girls) UK schoolchildren. Objective outcome measures included waist circumference, fasting lipids, fasting glucose, blood pressure, and cardiorespiratory fitness. Logistic regression was used for the main data analysis. After adjustment for confounders, the odds of having hypertriglyceridaemia (P = 0.03) and an increased clustered cardiometabolic risk score (P = 0.05) were significantly higher in children who engaged in more prolonged sedentary bouts per day. The number of breaks in sedentary time per day was not associated with any cardiometabolic risk factor, but longer mean duration of daily breaks in sedentary time were associated with a lower odds of having abdominal adiposity (P = 0.04) and elevated diastolic blood pressure (P = 0.01). These associations may be mediated by engagement in light activity. This study provides evidence that avoiding periods of prolonged uninterrupted sedentary time may be important for reducing cardiometabolic disease risk in children.

PMID: 27892780 [PubMed - as supplied by publisher]

Psychoneuroendocrinology. 2016 Dec;74:7-12.

Plasma leptin concentration is associated with fatigue severity in patients with cardiovascular risk factors - HSCAA study.

Kurajoh M, Kadoya M, Morimoto A, Naka M, Miyoshi A, Kanzaki A, Kakutani-Hatayama M, Hamamoto K, Shoji T, Moriwaki Y, Yamamoto T, Inaba M, Namba M, Koyama H.

Fatigue induced by complex dysfunctions of the central nervous system is frequently complained by patients with cardiovascular risk factors. Although leptin is considered to regulate the central nervous system, there are no reports regarding its association with fatigue in those patients. This cross-sectional study included 347 patients with cardiovascular risk factors. Fatigue score and plasma leptin concentration were measured. In addition, abdominal fat accumulation, systemic inflammation, sleep condition, and functions of hypothalamus-pituitary axis and autonomic system were estimated. Plasma leptin concentration (natural logarithm transformed) was significantly and positively ($r=0.222$, $p<0.001$) associated with fatigue score, and significantly ($p<0.001$) higher in the moderately-fatigued group (2.32±0.75ng/ml, mean±SD, n=52) than in the normally-fatigued group (1.85±1.02ng/ml, mean±SD, n=295). Multiple logistic regression analysis showed that plasma leptin concentration was significantly and independently associated with a moderately-fatigued condition independent of other factors, including age, gender, presence of diabetes, hypertension, dyslipidemia, alcohol consumption habit, urinary free cortisol, serum high-sensitive CRP concentration, visceral and subcutaneous fat area, apnea/hypopnea index, sleep efficiency, and heart rate variability. Hyperleptinemia may contribute to fatigue severity in patients with cardiovascular risk factors.

PMID: 27567116 [PubMed - in process]

Prev Med. 2016 Oct;91:329-334.

Dose-response gradients between a composite measure of six risk factors and cognitive decline and cardiovascular disease.

Adams ML, Grandpre J.

We created a composite risk factor index which includes 6 risk factors (diabetes, hypertension, obesity, depression, sedentary lifestyle, and current smoking) previously shown to be associated with cognitive decline (CD) and Alzheimer's disease (AD) as well as cardiovascular disease (CVD). Using 2011 Behavioral Risk Factor Surveillance System results for 95,147 adults ages ≥45years we found that 77.3% of study adults reported ≥1 risk factor (RF) while <1% reported all 6. Reporting any RFs increased risk for CD and CVD, with a dose-response gradient shown for increasing numbers of RFs from 0 to 6. Number of RFs, % of adults with CD and CVD respectively were: 0 RF: 5.8% w/CD, 4.4% w/CVD; 1 RF: 9.6% w/CD, 10.8% w/CVD; 2 RF: 12.7% w/CD, 17.6% w/CVD; 3 RF: 19.3% w/CD, 23.7% w/CVD; 4 RF: 24.6% w/CD, 29.7% w/CVD: 5 RF: 39.0% w/CD. 32.2% w/CVD; and all 6 RF: 54.4% w/CD and 43.7% w/CVD. Adjusted odds ratios (ORs) were similar except they tended to be higher for CVD compared with CD, with ORs for all 6 RF compared with 0 RF of 11.2 (95% confidence interval 5.2-24.3) for CD and 16.3 (8.5-31.2) for CVD. While dose-response gradients had been reported for individual RFs, our study found dose-response gradients for increasing numbers of RFs and similar strengths of associations for CD and CVD, plus adds prevalence results from a representative survey. The similarity between CVD and CD results supports evidence from other studies and suggests potential benefits of coordinating CVD and CD/AD prevention efforts.

PMID: 27612576 [PubMed - in process]

Int J Obes (Lond). 2016 Dec;40(12):1899-1905.

Trajectories of total and central adiposity throughout adolescence and cardiometabolic factors in early adulthood.

Araújo J, Barros H, Ramos E, Li L

BACKGROUND/OBJECTIVES: Our aim was to identify trajectories of total and central adiposity from 13 to 21 years, and to investigate how adiposity changes at different phases of adolescence relate to adulthood cardiovascular risk factors.
SUBJECTS/METHODS: This study included participants from a population-based cohort (EPITeen), Portugal. Body mass index (BMI) and waist circumference (WC) were measured at 13, 17 and 21 years, and sex- and age-specific z-scores were calculated. Adiposity trajectories were identified using mixture growth models (BMI, n=2901; WC, n=2898). Cardiovascular risk factors were evaluated at 21 years (n=1763): systolic (SBP) and diastolic blood pressure (DBP), insulin resistance (HOMA-IR), triglycerides and cholesterol. Association of trajectory, and changes in adiposity z-scores with each cardiovascular risk factor was estimated by linear regression models.
RESULTS: 'Normal', 'high, declining' and 'high, increasing' trajectories were identified in both sexes. 'High, increasing' BMI trajectory was associated with less favorable cardiovascular risk profile at 21 years in both sexes, whereas 'high, declining' presented a more favorable profile, similar to 'normal' trajectory in females. In addition, BMI increases between 13-17 years and 17-21years were associated with increases in systolic and diastolic blood pressure, and insulin resistance, but more strongly for the later period. For every standard deviation (s.d.) increase in BMI between 17-21 years, mean SBP increased by 1.99 mmHg (95% confidence interval (CI): 1.01; 2.97) for females and 3.83 mmHg (2.67; 4.98) for males; the respective increase was 1.56 mmHg (0.72; 2.40) and 2.80 mmHg (1.97; 3.64) for DBP and 0.27 (0.21; 0.32) and 0.30 (0.24; 0.36) for HOMA-IR (log-transformed). Similar results were found for WC.
CONCLUSIONS: Increases in adiposity, particularly from late adolescence-to-young adulthood, were associated with unfavorable cardiovascular profile in early adulthood. A benefit on the cardiovascular risk profile for participants in the declining adiposity trajectory was observed.

PMID: 27677621 [PubMed - in process]

J Vasc Surg. 2016 Dec 13. pii: S0741-5214(16)31271-X.

Sarcopenia is a risk factor for cardiovascular events experienced by patients with critical limb ischemia.

Matsubara Y, Matsumoto T, Inoue K, Matsuda D, Yoshiga R, Yoshiya K, Furuyama T, Maehara Y.

BACKGROUND: Prognosis is poor for patients with critical limb ischemia (CLI), and the most frequent cause of death is cardiovascular disease. Low grip strength is a risk factor for cardiovascular events, and sarcopenia may be associated as well. Thus, we hypothesized that sarcopenia is a risk factor for cardiovascular events experienced by patients with CLI. If this is true and appropriate therapy becomes available, the prognosis of patients with CLI will improve with appropriate risk management strategies to prevent cardiovascular events. Therefore, the aim of this study was to verify this hypothesis.

METHODS: We studied 114 patients who underwent revascularization and computed tomography between January 2002 and December 2012 in the Department of Surgery and Sciences at Kyushu University in Japan. Sarcopenia was defined as skeletal muscle area measured by L3-level computed tomography scan <114.0 cm(2) and <89.8 cm(2) for men and women, respectively. Clinical characteristics, cardiovascular event-free survival, <2-year death, causes of death, and effective treatments for sarcopenia were investigated.

RESULTS: We identified 53 (46.5%) patients with sarcopenia. Three-year cardiovascular event-free survival rates were 43.1% and 91.2% for patients with and without sarcopenia, respectively (P < .01). During follow-up, cardiovascular disease caused the deaths of 4 and 15 patients without and with sarcopenia (P < .01), respectively, and in particular, ischemic heart disease caused the deaths of 0 and 5 patients without or with sarcopenia (P < .05), respectively. Single antiplatelet therapy (SAPT; hazard ratio, 0.46; 95% confidence interval, 0.24-0.82; P < .01) and statin therapy (hazard ratio, 0.38; 95% confidence interval, 0.16-0.78; P < .01) were independent factors associated with improved cardiovascular event-free survival. Three-year cardiovascular event-free survival rates for patients with sarcopenia who received SAPT, dual antiplatelet therapies, and no antiplatelet therapy were 75.3%, 21.1%, and 29.5%, respectively (P < .01).

CONCLUSIONS: Sarcopenia is a risk factor for worse cardiovascular event-free survival, and SAPT and statin therapy reduced this risk for patients with CLI. Furthermore, SAPT but not dual antiplatelet therapy increased cardiovascular event-free survival in patients with sarcopenia.

PMID: 27986478 [PubMed - as supplied by publisher]

Mol Cell Endocrinol. 2016 Nov 15;436:78-92.

The role of food intake regulating peptides in cardiovascular regulation.

Mikulášková B, Maletínská L, Zicha J, Kuneš J.

Obesity is a risk factor that worsens cardiovascular events leading to higher morbidity and mortality. However, the exact mechanisms of relation between obesity and cardiovascular events are unclear. Nevertheless, it has been demonstrated that pharmacological therapy for obesity has great potential to
improve some cardiovascular problems. Therefore, it is important to determine the common mechanisms regulating both food intake and blood pressure. Several hormones produced by peripheral tissues work together with neuropeptides involved in the regulation of both food intake and blood pressure. Anorexigenic (food intake lowering) hormones such as leptin, glucagon-like peptide-1 and cholecystokinin cooperate with α-melanocyte-stimulating hormone, cocaine- and amphetamine-regulated peptide as well as prolactin-releasing peptide. Curiously their collective actions result in increased sympathetic activity, especially in the kidney, which could be one of the factors responsible for the blood pressure increases seen in obesity. On the other hand, orexigenic (food intake enhancing) peptides, especially ghrelin released from the stomach and acting in the brain, cooperates with orexins, neuropeptide Y, melanin-concentrating hormone and galanin, which leads to decreased sympathetic activity and blood pressure. This paradox should be intensively studied in the future. Moreover, it is important to know that the hypothalamus together with the brainstem seem to be major
structures in the regulation of food intake and blood pressure. Thus, the above mentioned regions might be essential brain components in the transmission of peripheral signals to the central effects. In this short review, we summarize the current information on cardiovascular effects of food intake regulating peptides.

PMID: 27450151 [PubMed - in process]

Eur J Nutr. 2016 Nov;55(Suppl 2):25-43.

Controversies about sugars: results from systematic reviews and meta-analyses on obesity, cardiometabolic disease and diabetes.

Khan TA, Sievenpiper JL.

Fructose-containing sugars are a focus of attention as a public health target for their putative role in obesity and cardiometabolic disease including diabetes. The fructose moiety is singled out to be the primary driver for the harms of sugars due to its unique endocrine signal and pathophysiological role. However, this is only supported by ecological studies, animal models of overfeeding and select human intervention studies with supraphysiological doses or lack of control for energy. The highest level of evidence from systematic reviews and meta-analyses of controlled trials has not shown that fructose-containing sugars behave any differently from other forms of digestible carbohydrates. Fructose-containing sugars can only lead to weight gain and other unintended harms on cardiometabolic risk factors insofar as the excess calories they provide. Prospective cohort studies, which provide the strongest observational evidence, have shown an association between fructose-containing sugars and
cardiometabolic risk including weight gain, cardiovascular disease outcomes and diabetes only when restricted to sugar-sweetened beverages and not for sugars from other sources. In fact, sugar-sweetened beverages are a marker of an unhealthy lifestyle and their drinkers consume more calories, exercise less, smoke more and have a poor dietary pattern. The potential for overconsumption of sugars in the form of sugary foods and drinks makes targeting sugars, as a source of excess calories, a prudent strategy. However, sugar content should not be the sole determinant of a healthy diet. There are many other factors in the diet-some providing excess calories while others provide beneficial nutrients. Rather than just focusing on one energy source, we should consider the whole diet for health benefits.

PMID: 27900447 [PubMed - in process]

Clin Nutr. 2016 Dec;35(6):1242-1250.

Modification in a single meal is sufficient to provoke benefits in inflammatory responses of individuals at low-to-moderate cardiometabolic risk.

Monfort-Pires M, Ferreira SR.

BACKGROUND & AIMS: Postprandial state is characterized by metabolic changes which may elevate circulating inflammatory biomarkers, used to assess cardiometabolic risk. It is unclear if biological benefits of certain food components could be obtained by a short-term change in a single meal of Brazilian's habitual diet. We investigated the postprandial effects of 2 fat tolerance tests (FTT) with different isocaloric meals (a typical Brazilian and a modified meal) differing by type of fatty acids and fiber contents, prior to and after breakfast interventions.
METHODS: This crossover clinical trial included 80 overweight individuals with at least one cardiometabolic risk factor, (35-69 years) who received two isocaloric breakfast interventions for 4 weeks, with a 2-week washout. The Brazilian breakfast was saturated fat-enriched while the modified one was rich in unsaturated fatty acids and fibers. Before and after intervention periods, individuals underwent two FTT with meals with similar composition to the interventions breakfasts but higher energy content. Variables were compared by repeated-measures ANOVA. Correlations were assessed by Pearson's coefficient.
RESULTS: At the end of both interventions, participants did not change plasma glucose or triglycerides. The higher IL-6 and IL-8 responses to the FTT with the Brazilian meal compared to that with the modified meal was accentuated after the interventions (p-diet <0.01; p-time <0.01). Acutely, E-selectin, TNF-α, IFN-γ, IL-10 and IL-17 concentrations did not increase in response to the FTTs, but
showed higher values only after the Brazilian intervention. In contrast, intervention with the modified breakfast induced reductions in fasting and postprandial cytokines (p-diet <0.01). Changes in MUFA and PUFA intakes were inversely correlated to changes in inflammatory markers, while changes in saturated fat intake were directly correlated to IFN-γ and IL-6.
CONCLUSION: Isocaloric meals with distinct nutrient composition elicit different postprandial inflammatory responses after a relatively short intervention in a single meal. Each saturated fat-enriched meal consumed, as well as each unsaturated fat and fiber-enriched meal may induce pro- or anti-inflammatory responses that could impact on the cardiometabolic risk profile.

PMID: 26987426 [PubMed - in process]

BMC Cardiovasc Disord. 2016 Dec 15;16(1):256.

Asymptomatic hyperuricemia is not an independent risk factor for cardiovascular events or overall mortality in the general population of the Busselton Health Study.

Nossent J, Raymond W, Divitini M, Knuiman M.

BACKGROUND: To investigate the impact of uric acid (UA) levels on cardiovascular disease and mortality at a population level.
METHODS: Prospective analysis of baseline serum UA measurement and 15 year follow-up data from the Busselton Health Survey (n = 4,173), stratified by existence or absence of baseline cardiovascular disease. Outcomes were ascertained from state-wide hospital discharge and mortality registries. Cox regression produced adjusted hazard ratios (HR) for UA level as continuous and categorical (low, medium, high) predictor for cardiovascular events (CVE) and mortality. Gout was defined as a patient's self-reported history of gout.
RESULTS: After age and gender adjustment each 0.1 mmol/L rise in UA level was associated with increased mortality (HR 1.19, CI 1.04-1.36), cardiovascular mortality (HR 1.27, CI 1.03-1.57) and first CVE (HR 1.28, CI 1.13-1.44) in participants with no history of CVE. Adjustment for behavioural and biomedical risk factors of cardiovascular disease attenuated these associations. Results for participants with a history of CVE and for a subset of 1,632 participants using UA levels (2-6 measurements) averaged over time were similar. The overall prevalence of hyperuricemia was 10.7%. When stratified by history of gout, UA level was significantly associated with increased risk of cardiovascular mortality only in participants with a history of CVE (HR 2.13, CI 1.03-4.43).
CONCLUSIONS: Despite the considerable prevalence of hyperuricemia in 10.7% of the population, single or time averaged measures of UA were not independently predictive of incident cardiovascular disease or mortality. Hyperuricemia did associate with an increased risk of cardiovascular death only in participants with gout and existing cardiovascular disease.

PMCID: PMC5160002
PMID: 27978810 [PubMed - in process]

Ann Med. 2016 Nov;48(7):559-567. Epub 2016 Aug 25.

Impact of cardiovascular risk factor control on long-term cardiovascular and all-cause mortality in the general population.

Bérard E, Bongard V, Dallongeville J, Arveiler D, Amouyel P, Wagner A, Cottel D, Haas B, Ruidavets JB, Ferrières J.

PURPOSE: In clinical trials, lowering cardiovascular risk factors (CVRFs) reduces cardiovascular (CV) morbidity and mortality. We assessed the impact of controlling CVRFs at baseline on long-term all-cause and CV mortality in the general population.
METHODS: Analysis was based on the Third French MONICA population-based survey (1994-1997). Vital status was obtained 18 years after inclusion. Statistical analysis was based on Cox-modelling.
RESULTS: About 3402 participants aged 35-64 were included and 569 (17%) presented with 2 or more uncontrolled CVRFs, 1194 (35%) had one uncontrolled CVRF, 770 (23%) had all CVRFs controlled under treatment (or were former smokers) and 869 (25%) exhibited no CVRF. During the follow-up, 389 deaths occurred (76 were due to CV causes). Considering all-cause mortality, the adjusted hazard ratios (aHR) for subjects with one uncontrolled CVRF and for those with two or more were 1.38 [1.03-1.83] ($p=0.029$) and 1.80 [1.33-2.43]($p<0.001$), respectively, as compared with subjects presenting with all their CVRFs controlled. For subjects exhibiting no CVRF, the aHR was 0.66 [0.44-0.98] ($p=0.042$). Considering CV mortality, aHRs for subjects presenting with one and two or more uncontrolled CVRF were 1.70 [0.84-3.42] ($p=0.138$) and 3.67 [1.85-7.29] ($p<0.001$), respectively, as compared with subjects who had either all their CVRFs controlled or exhibited no CVRF.
CONCLUSIONS: Failing to control CVRFs significantly increases long-term all-cause and CV mortality in the French general population. Key messages Only 30% of patients with cardiovascular risk factors were controlled. Failing to control cardiovascular risk factors significantly increased long-term cardiovascular and all-cause mortality. A residual risk for all-cause mortality remained even when patients were controlled.

PMID: 27558835 [PubMed - in process]

Eur J Prev Cardiol. 2016 Oct;23(15):1618-27.

Lifestyle and risk factor management in people at high cardiovascular risk from Bulgaria, Croatia, Poland, Romania and the United Kingdom who participated in both the EUROASPIRE III and IV primary care surveys.

De Backer G, De Bacquer D, Rydén L, Kotseva K, Gaita D, Georgiev B, Gotcheva N, Mancas S, Miličić D, Pająk A, Reiner Ž, Wood D; EUROASPIRE investigators.

OBJECTIVE: The objective of this study was to determine time trends in the implementation of European guidelines on the management of cardiovascular disease prevention in people at high cardiovascular risk.
METHODS: Cardiovascular disease prevention as reflected in the primary care arms of the EUROASPIRE III and IV surveys were compared in centres from Bulgaria, Croatia, Poland, Romania and the United Kingdom that participated in both surveys. All patients were free of cardiovascular disease but considered at high cardiovascular disease risk since they had been started on blood pressure and/or lipid and/or glucose lowering treatments. They were interviewed and examined by means of standardized methods ≥6 months after the start of therapy.
RESULTS: EUROASPIRE III comprised 2604 and EUROASPIRE IV 3286 subjects whereof 76% and 56% were interviewed. There were no major differences between the two surveys in age, gender, centres and reasons for inclusion. The prevalence of smoking was similar between EUROASPIRE III and IV. The proportion of smokers who did not intend to quit was significantly greater in EUROASPIRE IV compared with III. The prevalence of overweight or obesity was high and identical in both surveys. No significant differences were observed in physical activity. In participants not on blood pressure lowering treatment an elevated blood pressure was observed in 47% in both EUROASPIRE III and IV. In participants not on lipid lowering drugs the low-density lipoprotein cholesterol was ≥2.5 mmol/l in 87% and 88% in EUROASPIRE III and IV respectively. In participants free from known diabetes fasting plasma glucose was ≥7 mmol/l in 12% and 18% in EUROASPIRE III and IV. In subjects with known arterial hypertension blood pressure was at or below guideline recommended targets in 28% in EUROASPIRE III and 35% in IV. In participants on lipid lowering drugs the low-density lipoprotein cholesterol was < 2.5 mmol/l in 28% and 37% in EUROASPIRE III and IV. Glycated haemoglobin was < 7.0% in participants with known diabetes in 62% and 60% in EUROASPIRE III and IV.

Conclusions The results from EUROASPIRE III and IV clearly demonstrate that the control of modifiable risk factors in people at high cardiovascular disease risk remains poor.
PMID: 27084894 [PubMed - in process]

Am J Health Promot. 2016 Oct 25. pii: 0890117116674666. [Epub ahead of print]

Differences in Cardiovascular Disease Risk Factors and Health Behaviors Between Black and Non-Black Students Participating in a School-Based Health Promotion Program.

Jamerson T, Sylvester R, Jiang Q, Corriveau N, DuRussel-Weston J, Kline-Rogers E, Jackson EA, Eagle KA.

PURPOSE: To compare cardiovascular disease (CVD) risk factors of black and non-black children participating in Project Healthy Schools (PHS), a school-based wellness program.
DESIGN: Participants were surveyed and participated in physiological screenings pre- and post-PHS intervention.
SETTING: Middle schools in 4 Michigan communities of varying socioeconomic status.
PARTICIPANTS: A total of 3813 sixth-grade students comprised the survey sample, and 2297 sixth-grade students comprised the screening sample.
INTERVENTION: Project Healthy Schools is a school-based intervention designed to reduce the risk of obesity and CVD in children through the promotion of healthy eating and physical activity.
MEASURES: Physical examination, blood test, and self-reported survey data on dietary habits, physical activity, and sedentary behaviors were collected pre- and post-PHS.
ANALYSIS: Paired and independent t tests were used for physiologic variables. Wilcoxon sign-rank and rank-sum tests were used for survey variables.
RESULTS: At baseline, blacks had a higher percentage of overweight/obese students (43% vs 34%; $P < .0001$) and demonstrated poorer health habits than non-blacks; however, non-blacks had poorer lipid profiles. At follow-up (post-PHS intervention), both groups demonstrated significant improvements in physiological measures and health behaviors.
CONCLUSION: Despite disparities between the groups at both baseline and follow-up, changes seen post-PHS interventionwere beneficial in both groups. These results suggest that early intervention for risk factor modification is possible and may be of great importance in the prevention of CVD, particularly in high-risk groups.

PMID: 27780894 [PubMed - as supplied by publisher]

Int J Cardiol. 2016 Dec 15;225:23-29.

Life-course risk factor levels and coronary artery calcification. The Cardiovascular Risk in Young Finns Study.

Hartiala O, Kajander S, Knuuti J, Ukkonen H, Saraste A, Rinta-Kiikka I, Kainulainen S, Kähönen M, Hutri-Kähönen N, Laitinen T, Lehtimäki T, Viikari JS, Hartiala J, Juonala M, Raitakari OT, Magnussen CG.

BACKGROUND: Risk factors measured in early life have been shown to predict coronary artery calcium (CAC) in adulthood. However, limited data exist on when risk factor profiles of those who develop CAC diverge from those who do not. We investigated the associations of coronary heart disease risk factor trajectories beginning in adolescence and CAC measured at middle-age.

METHODS: CAC was measured among 589 participants aged 39-45years in whom cardiovascular risk factors (serum lipids, blood pressure, body mass index, physical activity, smoking habits, and fruit, vegetable, fish, and butter intake) had been collected in 1980, 1983, 1986, 2001, and 2007 as part of the Cardiovascular Risk in Young Finns Study.

RESULTS: Mean levels of low-density lipoprotein cholesterol (LDL-C), total cholesterol, apolipoprotein B (Apo-B), and systolic blood pressure (SBP) levels across the 27-year period were significantly higher among those with CAC vs. those without. The difference between the groups was 0.25mmol/l (95% confidence interval, 95%CI, 0.079-0.41) for LDL-C, 0.26mmol/l (95%CI 0.080-0.44) for total cholesterol, 0.05mmol/l (95%CI 0.0085-0.091) for Apo-B and 1.92mmHg (95%CI 0.10-3.74) for SBP after adjustment for other risk factors. Those with CAC at age 39-45years had higher serum lipid levels already in adolescence or early adulthood compared with those without CAC, with these differences becoming more pronounced during the life-course.

CONCLUSIONS: Long-time risk factor exposure to higher LDL-C, total cholesterol and Apo-B levels already starting in adolescence and higher SBP levels in adulthood is associated with CAC at middle-age.

PMID: 27697667 [PubMed - in process]

Medwave. 2016 Nov 15;16(10):e6606.

Hyperuricemia as a risk factor for cardiovascular disease: clinical review.

[Article in English, Spanish]

Gudiño Gomezjurado Á.

Cardiovascular diseases are one of the most important causes of morbidity and mortality worldwide. Several risk factors have been associated with the development of these pathologies. However, there is controversy about whether hyperuricemia is an independent risk factor for developing cardiovascular disease. To answer this question, we performed a recent literature review of relevant published material to assess the association of hyperuricemia with four major cardiovascular diseases: hypertension, coronary heart disease, heart failure and atrial fibrillation.

PMID: 27922586 [PubMed - in process]

Am J Med Sci. 2016 Nov;352(5):448-454.

Adiposity and Cardiovascular Risk Factor Variables in Childhood Are Associated With Premature Death From Coronary Heart Disease in Adults: The Bogalusa Heart Study.

Berenson GS, Srinivasan SR, Xu JH, Chen W.

BACKGROUND: More than 600 deaths of all causes have been documented over the 40-year duration of the Bogalusa Heart Study. Of these, 97 deaths have been related to cardiovascular events, based on obituaries published in local newspapers, death certificates obtained from the State Health Department, information from the coroner and word of mouth by nursing staff from the community.
METHODS: This study was a retrospective longitudinal cohort with several observations of each subject. It consisted of 6 cross-sectional surveys of children aged 5-7 years, conducted between 1973 and 1988, and 4 cross-sectional surveys of previously examined subjects as young adults extending into middle age, conducted between 1988 and 2010.
RESULTS: Excluding pulmonary, congenital and noncoronary cardiovascular diseases, 46 deaths (average age at death = 44.7 years, range: 31-55) were considered to have been related to coronary artery disease, that is, myocardial infarction. Cardiovascular risk factor observations, gathered from multiple surveys (average of 4.4 surveys, range: 1-14) since childhood, indicated that body fatness and elevated blood pressure beginning in childhood were more common in subjects who later died of coronary artery disease than in living subjects.
CONCLUSIONS: The present findings emphasize that sub-clinical cardiovascular disease begins early in life and that early prevention is vital.

PMID: 27865291 [PubMed - in process]

BMJ Open. 2016 Nov 7;6(11):e011891. doi: 10.1136/bmjopen-2016-011891.

Cannabis exposure as an interactive cardiovascular risk factor and accelerant of organismal ageing: a longitudinal study.

Reece AS, Norman A, Hulse GK.

OBJECTIVES: Many reports exist of the cardiovascular toxicity of smoked cannabis but none of arterial stiffness measures or vascular age (VA). In view of its diverse toxicology, the possibility that cannabis-exposed patients may be ageing more quickly requires investigation. DESIGN: Cross-sectional and longitudinal, observational. Prospective. SETTING: Single primary care addiction clinic in Brisbane, Australia. PARTICIPANTS: 11 cannabis-only smokers, 504 tobacco-only smokers, 114 tobacco and cannabis smokers and 534 non-smokers. EXCLUSIONS: known cardiovascular disease or therapy or acute exposure to alcohol, amphetamine, heroin or methadone. INTERVENTION: Radial arterial pulse wave tonometry (AtCor, SphygmoCor, Sydney) performed opportunistically and sequentially on patients between 2006 and 2011. MAIN OUTCOME MEASURE: Algorithmically calculated VA. SECONDARY OUTCOMES: other central haemodynamic variables. RESULTS: Differences between group chronological ages (CA, 30.47±0.48 to 40.36±2.44, mean±SEM) were controlled with linear regression. Between-group sex differences were controlled by single-sex analysis. Mean cannabis exposure among patients was 37.67±7.16 g-years. In regression models controlling for CA, Body Mass Index (BMI), time and inhalant group, the effect of cannabis use on VA was significant in males ($p=0.0156$) and females ($p=0.0084$). The effect size in males was 11.84%. A dose-response relationship was demonstrated with lifetime exposure ($p<0.002$) additional to that of tobacco and opioids. In both sexes, the effect of cannabis was robust to adjustment and was unrelated to its acute effects. Significant power interactions between cannabis exposure and the square and cube of CA were demonstrated (from $p<0.002$). CONCLUSIONS: Cannabis is an interactive cardiovascular risk factor (additional to tobacco and opioids), shows a prominent dose-response effect and is robust to adjustment. Cannabis use is associated with an acceleration of the cardiovascular age, which is a powerful surrogate for the organismal-biological age. This likely underlies and bi-directionally interacts with its diverse toxicological profile and is of considerable public health and regulatory importance.

PMCID: PMC5129004
PMID: 27821595 [PubMed - in process]

J Endocrinol Invest. 2016 Dec 23. doi: 10.1007/s40618-016-0601-y. [Epub ahead of print]

Depression contributing to dyslipidemic cardiovascular risk in the metabolic syndrome.

Lemche AV, Chaban OS, Lemche E.

PURPOSE: Triglycerides are considered an emerging risk factor for cardiovascular mortality. Recent evidence relating depression and metabolic syndrome (MetS) implicated triglyceride levels. We thus investigated interrelations of self-reported depression severity (Zung) and MetS-related biological measures with CVD risk estimates in MetS patients.
METHODS: N = 101 patients fulfilling International Diabetes Federation criteria for MetS from a nationwide sampled treatment cohort for MetS with familial T2DM risk or manifest T2DM in a Ukrainian governmental health care system were participants. Both laboratory and non-laboratory measures were included. Recent European cardiological SCORE system CVD risk estimates were used as outcome variables.
RESULTS: Following correlation matrix, we entered all variables into principal component analysis (PCA; 76.7% explained variance), followed by hierarchical regression and structural equation modeling (SEM). The PCA suggested a one-factor solution, where the latent variable showed highest loadings of SCORE risk estimates, triglycerides, depression severity, and pulse pressure. A comprehensive SEM was adjusted with 92.7% explained variance: overall CVD risk related to depression, pulse pressure, triglycerides, and fasting glucose.
CONCLUSION: The findings in this MetS sample suggest that triglycerides and depression severity are the key variables among MetS biomarkers in cross-sectionally associating with the fatal and total SCORE risk estimates in MetS.

PMID: 28012071 [PubMed - as supplied by publisher]

Gac Sanit. 2016 Oct 25. pii: S0213-9111(16)30180-7.

[Clinical trial with educational intervention in perimenopausal women with cardiovascular risk factor].

[Article in Spanish]

Soto-Rodríguez A, García-Soidán JL, de Toro-Santos M, Rodríguez-González M, Arias-Gómez MJ, Pérez-Fernández MR.

OBJECTIVE: To assess whether an educational intervention in women in perimenopausal age with diabetes mellitus, hypertension and/or dyslipidemia could improve aspects of quality of life and exercise.
METHODS: A randomized clinical trial.
VARIABLES: physical activity, quality of life and weight in women aged 45-60 years (n = 320) at time 0 and 12 months after surgery. intervention group (IG): 3 interactive workshops on cardiovascular disease prevention and control group (CG): information by mail.
RESULTS: The IG obtained better scores on the mental component of quality of life one year later ($p < 0.05$) and showed a significant increase in physical activity ($p < 0.01$). GI women maintained their weight while in CG women it increased ($p < 0.01$).
CONCLUSIONS: A simple educational intervention in premenopausal women with a cardiovascular risk factor improves aspects of quality of life and of healthy habits such as physical activity.

PMID: 27793547 [PubMed - as supplied by publisher]

G Ital Dermatol Venereol. 2016 Dec;151(6):678-693.

Psoriasis and cardiovascular disorders.

Frieder J, Ryan C.

Psoriasis is associated with an increased risk of cardiovascular disease and related comorbidities such as diabetes mellitus, metabolic syndrome, dyslipidemia, and obesity. The precise mechanistic links underlying the association between psoriasis and cardiovascular disease remain unknown, however, multiple pathologic mechanisms have been proposed. Shared inflammatory pathways between psoriasis and atherosclerosis are likely involved. Other possible mechanisms include endothelial dysfunction, cytokine dysregulation, platelet upregulation, and dyslipidemia. Additional studies are needed to more clearly define the association between psoriasis and cardiovascular disease. Current, but limited, data suggests that psoriasis treatments targeting inflammation may be able to reduce the cardiovascular risks in this patient population. As new therapies become available, long-term prospective studies will be required to determine their potential effects on cardiovascular risk. This review summarizes the current literature on proposed pathogenic links between psoriasis and cardiovascular disease, the epidemiology of psoriasis and associated cardiovascular and cardiometabolic diseases, and the impact of anti-psoriatic treatments on cardiovascular risk profile. In addition, we provide a brief discussion of risk factor management strategies in patients with psoriasis.

PMID: 27627099 [PubMed - in process]

Mayo Clin Proc. 2016 Nov;91(11):1525-1534.

Sedentary Time, Cardiorespiratory Fitness, and Cardiovascular Risk Factor Clustering in Older Adults--the Generation 100 Study.

Sandbakk SB, Nauman J, Zisko N, Sandbakk Ø, Aspvik NP, Stensvold D, Wisløff U.

OBJECTIVE: To determine whether meeting physical activity (PA) recommendations and/or having high age-specific cardiorespiratory fitness (CRF) attenuate the adverse effect of prolonged sedentary time on cardiovascular risk factor (CV-RF) clustering in older adults.

PATIENTS AND METHODS: We conducted a cross-sectional study of Norwegian women (495) and men (379) aged 70 to 77 years from August 22, 2012, through June 30, 2013. Sedentary time and PA were assessed by accelerometers and CRF by directly measured peak oxygen uptake (VO2peak). Logistic regression was used to estimate adjusted odds ratios (ORs) and CIs for the association between sedentary time and prevalence of CV-RF clustering (≥3 of the following: hypertension, high blood glucose level, high waist circumference, low high-density lipoprotein cholesterol level, or high triglyceride level) and for the modifying effect of PA and CRF.

RESULTS: Overall, 163 of the 495 women (32.9%) and 140 of the 379 men (36.9%) had CV-RF clustering. Each additional hour of sedentary time was associated with 22% (OR, 1.22; 95% CI, 1.02-1.45) and 27% (OR, 1.27; 95% CI, 1.04-1.55) higher likelihood of having CV-RF clustering in women and men, respectively, whereas a 1-metabolic equivalent decrement in VO2peak corresponded to 57% (OR, 1.57; 95% CI, 1.34-1.84) and 67% (OR, 1.67; 95% CI, 1.44-1.95) higher likelihood of CV-RF

clustering in women and men, respectively. High CRF (VO2peak >27.5 mL/kg per minute in women and >34.4 mL/kg per minute in men) attenuated the adverse effects of high sedentary time on CV-RF clustering, even among individuals not meeting recommendations for PA.

CONCLUSION: High age-specific CRF fully attenuates the adverse effect of prolonged sedentary time on CV-RF clustering, independent of meeting the PA consensus recommendation in older adults.

PMID: 27769609 [PubMed - in process]

Nurs Health Sci. 2016 Dec;18(4):488-495.

Association of cardiovascular emerging risk factors with acute coronary syndrome and stroke: A case-control study.

Martínez Linares JM, Guisado Barrilao R, Ocaña Peinado FM, Salgado Parreño FJ.

In this study, we estimated the risk of acute coronary syndrome and stroke associated with several emerging cardiovascular risk factors. This was a case-control study, where an age - and sex-matched acute coronary syndrome group and stroke group were compared with controls. Demographic and clinical data were collected through patient interviews, and blood samples were taken for analysis. In the bivariate analysis, all cardiovascular risk factors analyzed showed as predictors of acute coronary syndrome and stroke, except total cholesterol and smoking. In the multivariate logistic regression model for acute coronary syndrome, hypertension and body mass index, N-terminal section brain natriuretic peptide and pregnancy-associated plasma protein-A were independent predictors. For stroke, the predictors were hypertension, diabetes mellitus, body mass index, and N-terminal section brain natriuretic peptide. Controlling for age, sex, and classical cardiovascular risk factors, N-terminal section brain natriuretic peptide and pregnancy-associated plasma protein-A were independent emerging cardiovascular risk factors for acute coronary syndrome, but pregnancy-associated plasma protein-A was not for stroke. High levels of cardiovascular risk factors in individuals with no episodes of cardiovascular disease requires the implementation of prevention programs, given that at least half of them are modifiable.

PMID: 27510402 [PubMed - in process]

Eur J Prev Cardiol. 2016 Nov 21. pii: 2047487316679524. [Epub ahead of print]

Relation between cardiovascular disease risk factors and epicardial adipose tissue density on cardiac computed tomography in patients at high risk of cardiovascular events.

Franssens BT, Nathoe HM, Leiner T, van der Graaf Y, Visseren FL; SMART study group.

BACKGROUND: The radiodensity of epicardial adipose tissue may provide information on cardiovascular risk in addition to epicardial adipose tissue volume. The aim of this study was to quantify the relation between cardiovascular risk factors and the radiodensity of epicardial adipose tissue in patients at high risk of cardiovascular disease.
DESIGN: This was a cross-sectional study in 140 patients at high risk of cardiovascular disease.
METHODS: Patients from the Secondary Manifestations of ARTerial disease (SMART) cohort study were invited to undergo cardiac computed tomography angiography. The radiodensity (in Hounsfield units; HU) and volume (in cm(3)) of epicardial adipose tissue were quantified semi-automatically. Multivariable linear regression was used to quantify the relation between cardiovascular risk factors and the radiodensity of epicardial adipose tissue.
RESULTS: The cardiovascular risk factors most strongly associated with epicardial adipose tissue density were sex, body mass index and visceral fat, with a lower adipose tissue attenuation of 3.5 HU (95% confidence interval (CI) 2.0-5.0 HU) for female sex, 1.6 HU (95%CI 0.2-2.9 HU) for body mass index >25kg/m(2) and 1.3 HU (95% CI 0.6-2.0 HU) for a one standard deviation higher quantity of visceral fat, adjusted for age, sex, coronary artery bypass graft history and epicardial adipose tissue volume.
CONCLUSION: Low epicardial adipose tissue computed tomography attenuation is associated with an adverse cardiovascular risk factor profile in patients at high risk of cardiovascular disease, independent of the volume of epicardial adipose tissue and waist circumference. These findings support the potential role for epicardial adipose tissue radiodensity as a valid biomarker of cardiovascular risk. Adipose tissue radiodensity may be a more sensitive marker than epicardial adipose tissue volume with which to study the contribution of epicardial adipose tissue to the coronary atheromatous disease process.

PMID: 27872327 [PubMed - as supplied by publisher]

J Am Heart Assoc. 2016 Dec 20;5(12). pii: e003583. doi: 10.1161/JAHA.116.003583.

Adolescent Diet Quality and Cardiovascular Disease Risk Factors and Incident Cardiovascular Disease in Middle-Aged Women.

Dahm CC, Chomistek AK, Jakobsen MU, Mukamal KJ, Eliassen AH, Sesso HD, Overvad K, Willett WC, Rimm EB, Chiuve SE.

BACKGROUND: Primary prevention of cardiovascular disease (CVD) focuses on treatment of risk factors, including hypercholesterolemia, hypertension, and type 2 diabetes mellitus. We investigated whether a healthy diet in adolescence prevents development of clinical risk factors or incidence of CVD in adulthood.

METHODS AND RESULTS: We examined the time to the first development of ≥1 clinical risk factor (hypercholesterolemia, hypertension, or type 2 diabetes mellitus) or CVD in relation to a high school Alternative Healthy Eating Index (HS-AHEI) within the Nurses' Health Study II. Among those who completed a food frequency questionnaire about their high school diet and adult diet (mean age 42 years), 27 406 women free of clinical risk factors and 42 112 women free of CVD in 1998 were followed to June 2011. Hazard ratios (HRs) and 95% CIs were adjusted for potential confounders in high school and adulthood. We documented 11 542 first diagnoses of clinical risk factors and 423 CVD events. The HS-AHEI was associated with a lower rate of risk factors (HR highest versus lowest quintiles 0.82; 95% CI, 0.77-0.87 [P trend <0.001]), was inversely associated with risk of developing ≥1 clinical risk factor in women with a low, medium, and high AHEI score during adulthood (HR high HS-AHEI/high adult AHEI versus low/low 0.79 [95% CI, 0.74-0.85]), but was not statistically significantly associated with incident CVD.

CONCLUSIONS: A healthy diet during adolescence is associated with lower risk of developing CVD risk factors. As diet tracks throughout life, and adult diet prevents CVD, healthy dietary habits that begin early are important for primordial prevention of CVD.

PMID: 27998915 [PubMed - in process]

Adv Exp Med Biol. 2016 Nov 5. [Epub ahead of print]

Hypertension Is a Risk Factor for Several Types of Heart Disease: Review of Prospective Studies.

Kokubo Y, Matsumoto C.

Many prospective cohort studies have demonstrated that hypertension is a strong risk factor for total mortality and cardiovascular disease (CVD). Heart disease includes coronary heart disease (CHD), heart failure, atrial fibrillation, valvular disease, sudden cardiac death (SCD), sick sinus syndrome (SSS), cardiomyopathy, and aortic aneurysms. Most of the epidemiologic prospective studies of heart disease focused on coronary/ischemic heart disease. Here we comprehensively reviewed the association between hypertension and the above-mentioned heart diseases. We found that CHD, heart failure, atrial fibrillation, aortic valvular disease, SCD, SSS, left ventricular hypertrophy, and abdominal aortic aneurysms were all associated with hypertension. Those relations tended to be stronger in men. The prevention of hypertension and lowering one's blood pressure may help reduce the risk of developing heart disease.

PMID: 27815926 [PubMed - as supplied by publisher]

J Am Geriatr Soc. 2016 Dec 26. doi: 10.1111/jgs.14694. [Epub ahead of print]

Leisure-Time Physical Activity Reduces Total and Cardiovascular Mortality and Cardiovascular Disease Incidence in Older Adults.

Barengo NC, Antikainen R, Borodulin K, Harald K, Jousilahti P.

OBJECTIVES: To determine whether leisure-time physical activity (LTPA) is independently associated with all-cause and cardiovascular mortality and with incidence of cardiovascular disease (CVD) and stroke in older adults.
DESIGN: Population-based cohort study (median follow-up 11.8 years).
SETTING: Community, five Finnish provinces.
PARTICIPANTS: Men and women aged 65 to 74 who participated in a baseline risk factor survey between 1997 and 2007 in Finland (N = 2,456).
MEASUREMENTS: The study protocol included a self-administered questionnaire, health examination at the study site, and blood sample for laboratory analysis. LTPA was classified into three levels: low, moderate, high. Mortality data were obtained from the National Causes of Death Register and data on incident CVD (coronary heart disease, stroke) events from the National Hospital Discharge Register.
RESULTS: Multifactorial-adjusted (age, area, study year, sex, smoking, body mass index, systolic blood pressure, serum cholesterol, education, marital status) risks of total mortality (moderate: hazard ratio (HR) = 0.61, 95% confidence interval (CI) = 0.50-0.74; high: HR = 0.47, 95% CI = 0.34-0.63, P for trend <.001), CVD mortality (moderate: HR = 0.46, 95% CI = 0.33-0.64; high: HR = 0.34, 95% CI = 0.20-0.59, P for trend <.001), and an incident CVD event (moderate HR = 0.69, 95% CI = 0.54-0.88; high: HR = 0.55, 95% CI = 0.38-0.79, P for trend <.001) were lower for those with moderate or high LTPA levels than for those with low LTPA levels. Further adjustment for self-reported inability to perform LTPA did not change the associations remarkably.
CONCLUSIONS: Baseline LTPA reduces the risk of total and CVD mortality and incident CVD events in older adults independently of the major known CVD risk factors. The protective effect of LTPA is dose dependent.

PMID: 28024086 [PubMed - as supplied by publisher]

Prev Med. 2016 Oct;91:158-163.

Changes in cardiovascular disease risk and behavioural risk factors before the introduction of a health check programme in England.

Alageel S, Wright AJ, Gulliford MC.

A population-based programme of health checks was introduced for adults in England in 2011 for the primary prevention of cardiovascular diseases (CVD) and risk factors management. The aim was to evaluate changes in cardiovascular risk and behavioural risk factors in a health check eligible population in England from 1994 to 2013, by using repeated cross-sectional design using seven surveys of the Health Survey for England. Measures included traditional CVD risk factors and behavioural risk factors. Linear trends were estimated allowing for sampling design. The surveys comprised 49,805 adults aged 45 to 74years; 30,639 were free from cardiovascular comorbidity; 16,041 (52%) had complete data for quantitative risk factors. Between 1994 and 2013, systolic blood pressure decreased by 3.1 (95% confidence interval 2.5 to 3.6) mmHg per decade in men and 5.0 (4.5 to 5.5) in women. Total cholesterol decreased by 0.20 (0.16 to 0.24) mmol/l per decade in men; 0.23 (0.19 to 0.26) in women. Smoking declined by 6% (5% to 8%) per decade in men; 7% (6% - 8%) in women. The proportion with CVD-risk ≥20% declined by 6.8% per decade in men; 2.4% in women. Multiple behavioural risk factors were strongly associated with estimated CVD-risk, but improving trends in traditional CVD risk factors were inconsistent with increasing indicators of adiposity. Long-term declines in traditional risk factors contributed to reductions in estimated CVD-risk prior to the introduction of a health check programme. Behaviour change interventions for multiple risk factor exposures remain a key area for future research.

PMID: 27539072 [PubMed - in process]

Int J Cardiol. 2016 Nov 15;223:331-336.

Exploring cardiovascular disease risk evaluation in patients with inflammatory joint diseases.

Semb AG, Ikdahl E, Hisdal J, Olsen IC, Rollefstad S.

OBJECTIVES: Cardiovascular disease (CVD) risk calculators developed for the general population have been shown to inaccurately predict CVD events in patients with inflammatory joint disease (IJD). European guidelines for CVD prevention recognize the presence of carotid plaques (CP) as a very high CVD risk factor, equivalent of coronary artery disease. Patients with IJD have a high prevalence of CP. We evaluated if CP resulted in reclassification of patients with IJD into a more appropriate CVD risk class and recommended lipid lowering treatment. METHODS: CVD risk evaluation was performed in patients with IJD using SCORE and ACC/AHA risk calculators to predict CVD events.

RESULTS: Of the 335 IJD patients evaluated (including rheumatoid arthritis n=201, ankylosing spondylitis n=85 and psoriatic arthritis n=49), 183 and 159 IJD patients had a calculated CVD risk by SCORE and ACC/AHA <5%, indicating no need of lipid lowering treatment (LLT). However, of patients with low to moderate risk calculated by SCORE and ACC/AHA, 67 (36.6%) and 48 (30.2%) had CP and should according to guidelines receive intensive LLT. For patients with high risk, in the LLT considered group, 54.9% and 58.1% were reclassified to correct treatment when adding information on the presence of CP. Our results reveal a considerable reclassification into correct CVD risk category when adding CP in female patients.

CONCLUSION: The high frequency of asymptomatic atherosclerosis in patients with IJD has a notable impact on CVD risk stratification. Identification of CP will reclassify patients into recommended CVD preventive treatment group, which may be clinically important.

PMID: 27543704 [PubMed - in process]

Scand J Prim Health Care. 2016 Dec;34(4):336-342.

Observed changes in cardiovascular risk factors among high-risk middle-aged men who received lifestyle counselling: a 5-year follow-up.

Siren R, Eriksson JG, Vanhanen H.

OBJECTIVE: To examine the long-term impact of health counselling among middle-aged men at high risk of CVD.
DESIGN: An observational study with a 5-year follow-up.
SETTING AND INTERVENTION: All men aged 40 years in Helsinki have been invited to a visit to evaluate CVD risk from 2006 onwards. A modified version of the North Karelia project risk tool (CVD risk score) served to assess the risk. High-risk men received lifestyle counselling based on their individual risk profile in 2006 and were invited to a follow-up visit in 2011.
SUBJECTS: Of the 389 originally high-risk men, 159 participated in the follow-up visits in 2011. Based on their follow-up in relation the further risk communication, we divided the participants into three groups: primary health care, occupational health care and no control visits.
MAIN OUTCOME MEASURES: Lifestyle and CVD risk score change.
RESULTS: All groups showed improvements in lifestyles. The CVD risk score decreased the most in the group that continued the risk communication visits in their primary health care centre (6.1 to 4.8 [95% CI -1.6 to -0.6]) compared to those who continued risk communication visits in their occupational health care (6.0 to 5.4 [95% CI -1.3 to 0.3]), and to those with no risk communication visits (6.0 to 5.9 [95% CI -0.5 to 0.4]).
CONCLUSIONS: These findings indicate that individualized lifestyle counselling improves health behaviour and reduces total CVD risk among middle-aged men at high risk of CVD. Sustained improvement in risk factor status requires ongoing risk communication with health care providers.
KEY POINTS Studies of short duration have shown that lifestyle changes reduce the risk of cardiovascular disease among high-risk individuals. Sustaining these lifestyle changes and maintaining the lower disease risk attained can prove challenging. Cardiovascular disease (CVD) risk assessment and individualized health counselling for high-risk men, when implemented in primary health care, have the potential to initiate lifestyle changes that support risk reduction. Attaining a sustainable reduction in CVD risk requires a willingness to engage in risk-related communication from both health care providers and the individual at high risk.

PMID: 27822969 [PubMed - in process]

Int J Clin Pract. 2016 Oct;70(10):791-805.

Soft drinks and sweetened beverages and the risk of cardiovascular disease and mortality: a systematic review and meta-analysis.

Narain A, Kwok CS, Mamas MA.

BACKGROUND: Soft drink consumption is associated with adverse health behaviours that predispose to adverse cardiovascular risk factor profiles; however, it is unclear whether their intake independently leads to an increased risk of cardiovascular events and mortality. We conducted a systematic review and meta-analysis to evaluate this.
METHODS: Medline and EMBASE were searched in July 2015 for studies that considered soft drink intake and risk of mortality, myocardial infarction (MI) or stroke. Pooled risk ratios (RRs) for adverse outcomes were calculated using inverse variance with a random effects model, and heterogeneity was assessed using the I(2) statistic.
RESULTS: A total of seven prospective cohort studies with 308,420 participants (age range 34-75 years) were included in the review. The pooled results suggest a greater risk of stroke (RR 1.13, 95% CI 1.02-1.24), and MI (RR 1.22, 95% CI 1.14-1.30), but not vascular events with incremental increase in sugar-sweetened beverage (SSB) consumption. With incremental increase in artificially sweetened
beverage (ASB) consumption, there was a greater risk of stroke (RR 1.08, 95% CI 1.03-1.14), but not vascular events or MI. In the evaluation of high vs. low SSB, there was a greater risk of MI (RR 1.19, 95% CI 1.09-1.31) but not stroke, vascular events or mortality. For ASB, there was a significantly greater risk of stroke (RR 1.14, 95% CI 1.04-1.26) and vascular events (RR 1.44, 95% CI 1.02-2.03) but not MI or mortality.
CONCLUSIONS: Our results suggest an association between consumption of sugar-sweetened and ASBs and cardiovascular risk, although consumption may be a surrogate for adverse health behaviours.

PMID: 27456347 [PubMed - in process]

Curr Cardiol Rep. 2016 Dec;18(12):120.

Anxiety and Cardiovascular Disease Risk: a Review.

Tully PJ, Harrison NJ, Cheung P, Cosh S.

Unrecognized anxiety is a difficult clinical presentation in cardiology. Anxiety leads to recurring emergency department visits and the need for numerous diagnostic evaluations to rule out cardiovascular disease (CVD). This review focuses broadly on anxiety and its subtypes in relation to the onset and progression of CVD while describing helpful guidelines to better identify and treat anxiety. Potential mechanisms of cardiopathogenesis are also described. An emerging literature demonstrates that anxiety disorders increase the risk for incident CVD but a causal relationship has not been demonstrated. Anxiety portends adverse prognosis in persons with established CVD that is independent from depression. The level of clinical priority received by depression should be extended to research and clinical intervention efforts in anxiety. Anxiety holds direct relevance for uncovering mechanisms of cardiopathogenesis, developing novel therapeutic strategies, and initiating clinical interventions in the population at risk of developing heart disease, or those already diagnosed with CVD.

PMID: 27796859 [PubMed - in process]

Drugs. 2016 Oct;76(16):1529-1550.

Drug Treatment of Hypertension: Focus on Vascular Health.

Cameron AC, Lang NN, Touyz RM

Hypertension, the most common preventable risk factor for cardiovascular disease and death, is a growing health burden. Serious cardiovascular complications result from target organ damage including cerebrovascular disease, heart failure, ischaemic heart disease and renal failure. While many systems contribute to blood pressure (BP) elevation, the vascular system is particularly important because vascular dysfunction is a cause and consequence of hypertension. Hypertension is
characterised by a vascular phenotype of endothelial dysfunction, arterial remodelling, vascular inflammation and increased stiffness. Antihypertensive drugs that influence vascular changes associated with high BP have greater efficacy for reducing cardiovascular risk than drugs that reduce BP, but have little or no effect on the adverse vascular phenotype. Angiotensin converting enzyme ACE inhibitors (ACEIs) and angiotensin II receptor blockers (ARBs) improve endothelial function and prevent vascular remodelling. Calcium channel blockers also improve endothelial function, although to a lesser extent than ACEIs and ARBs. Mineralocorticoid receptor blockers improve endothelial function and reduce arterial stiffness, and have recently become more established as antihypertensive
drugs. Lifestyle factors are essential in preventing the adverse vascular changes associated with high BP and reducing associated cardiovascular risk. Clinicians and scientists should incorporate these factors into treatment decisions for patients with high BP, as well as in the development of new antihypertensive drugs that promote vascular health.

PMID: 27667708 [PubMed - in process]

Int J Cardiol. 2017 Jan 15;227:751-756.

Cardiovascular outcomes of lifestyle intervention in hypertensive patients with antihypertensive agents.

Hua K, Hao G, Li W.

BACKGROUND AND PURPOSE: This study aims to investigate whether changes in lifestyle, added to the antihypertensive treatment, could translate to changes in cardiovascular (CV) morbidity and mortality in hypertensive patients.
METHODS: Between October 2007 and November 2008, men or women (50-79years) were enrolled randomly in this study when their BP was 140/90-179/109mmHg with a 2-weeks run-in stage firstly. All participants had at least one additional CV risk factor, indicated by a history of stroke, myocardial infarction (MI), etc.
RESULTS: 12,245 (90.4%) patients were eligible for our analysis. We assigned them to the lifestyle intervention group (5225) or to control group (7020). In the end of the study, weight loss at least 1kg of the participants of the intervention group of accounted for 33.2%, control group was 24.9 (P<0.001). Salt intake more than 6g of the participants accounted for 29.4% in the intervention group, 38.4% in the control group (P<0.001). The composite CV events which include non-fatal stroke, MI and CV death, happened in 133 (2.2%) participants of intervention group and 177 (2.4%) in the control group. However, the improvement of composite CV events reduced 55% (adjusted HR=0.45, 95% CI: [0.32,0.63]), and decreased by 55% (HR=0.45, 95% CI: [0.37,0.63]) for all CV events.
CONCLUSIONS: The effect of advised only lifestyle intervention used in our study is minor for CV prevention. However, the effect of improvement of lifestyle on CV prevention is indisputable even in hypertensives who receive a-hypertension drug treatment.

PMID: 27810294 [PubMed - in process]

Am J Cardiol. 2016 Dec 1;118(11):1669-1673.

Gender-Related Cardiovascular Risk in Healthy Middle-Aged Adults.

Perelshtein Brezinov O, Kivity S, Segev S, Sidi Y, Goldenberg I, Maor E, Klempfner R.

Men tend to develop cardiovascular disease (CVD) earlier in life than women. Whether this difference is attributable only to gender is a matter of debate. The purpose of this study was to evaluate gender differences in cardiovascular risk in a large cohort of asymptomatic men and women and explore gender-related risk in prespecified risk factor subgroups. We investigated 14,966 asymptomatic men
and women free of diabetes, hypertension, or ischemic heart disease who were annually screened. The primary end point of the present study was the occurrence of ischemic or cerebrovascular disease as composite end point. Multivariate Cox proportional hazards regression modeling was used to assess the gender difference regarding CVD and to examine the association between CVD risk factors and gender. Mean age of the study population was 47 ± 10 years and 30% were women. Kaplan-Meier survival analysis showed that at 6.2 ± 3.9 years' follow-up, the rate of CVD events was 6.1% among men compared with 1.8% among women (log-rank p <0.001). Consistently, multivariate analysis demonstrated that male gender was independently associated with a significant threefold increased risk for development of CVD events (hazard ratio 3.05, CI 2.25 to 4.14). The CVD risk associated with male gender was consistent in each risk subset analyzed, including older age, low high-density lipoprotein, impaired fasting glucose, and positive family history for ischemic heart disease (all p values for gender-by-risk factor interactions <0.05). Higher performance on treadmill test
had a protective effect regarding CVD development in both men and women. In conclusions, healthy middle-aged men experienced increased risk for the development of CVD events compared with women independently of traditional CVD risk factors. However, better exercise capacity is associated with a protective effect.

PMID: 27737731 [PubMed - in process]

Diabetes Metab Res Rev. 2016 Dec 28. doi: 10.1002/dmrr.2877. [Epub ahead of print]

Cardiovascular risk factors and incident albuminuria in screen-detected type 2 diabetes.

Webb DR, Zaccardi F, Davies MJ, Griffin SJ, Wareham NJ, Simmons RK, Rutten GE, Sandbaek A, Lauritzen T, Borch-Johnsen K, Khunti K.

BACKGROUND: It is unclear whether cardiovascular risk factor modification influences the development of renal disease in people with type 2 diabetes identified through screening. We determined predictors of albuminuria five years after a diagnosis of screen-detected diabetes within the ADDITION-Europe study, a pragmatic cardiovascular outcome trial of multifactorial cardiovascular risk management.

METHODS: In 1,826 participants with newly diagnosed, screen-detected diabetes without albumiuria, we explored associations between risk of new albuminuria (≥2.5 mg mmol(-1) males and ≥3.5 mg mmol(-1) females) and: 1) baseline cardio-metabolic risk factors and 2) changes from baseline to one year in systolic blood pressure (∆SBP) and glycated haemoglobin (∆HbA1c) using logistic regression.

RESULTS: Albuminuria developed in 268 (15%) participants; baseline body mass index and active smoking were independently associated with new onset albuminuria in the five years after detection of diabetes. In a model adjusted for age, gender, and baseline HbA1c and blood pressure, a 1% decrease in HbA1c and 5 mmHg decrease in SBP during the first year were independently associated with lower risks of albuminuria (Odds Ratio (OR), 95% confidence interval: 0.76, 0.62 to 0.91 and 0.94, 0.88 to 1.01, respectively). Further adjustment did not materially change these estimates. There was no interaction between ΔSBP and ΔHBA1c in relation to albuminuria risk, suggesting likely additive effects on renal microvascular disease.

CONCLUSIONS: Baseline measurements and changes in HbA1c and SBP a year after diagnosis of diabetes through screening independently associate with new onset albuminuria four years later. Established multifactorial treatment for diabetes applies to cases identified through screening.

PMID: 28029211 [PubMed - as supplied by publisher]

Cell Mol Life Sci. 2016 Dec;73(24):4675-4684.

Diabetes propels the risk for cardiovascular disease: sweet monocytes becoming aggressive?

van Diepen JA, Thiem K, Stienstra R, Riksen NP, Tack CJ, Netea MG.

Diabetes strongly predisposes to cardiovascular disease (CVD), the leading cause of mortality in these patients, as well as in the entire population. Hyperglycemia is an important cardiovascular risk factor as shown by the observation that even transient periods of hyperglycemia, despite return to normoglycemia during follow-up, increase the risk for CVD, a phenomenon termed 'hyperglycemic memory'. The molecular mechanisms underlying this phenomenon remain largely unknown. As inflammation plays an important role in the pathogenesis of atherosclerosis, we propose that long-term functional reprogramming of monocytes and macrophages, induced by hyperglycemia, plays an important role in the phenomenon of hyperglycemic memory leading to cardiovascular complications in patients with diabetes. In this review, we discuss recent insights showing that innate immune cells possess the capacity to reprogram their function through epigenetically mediated rewiring of gene transcription, a process termed 'trained immunity'. The long-term reprogramming of monocytes can be induced by microbial as well as metabolic products, and involves a shift in cellular metabolism from oxidative phosphorylation to aerobic glycolysis. We hypothesize that hyperglycemia in diabetes patients induces long-term activation of monocytes and macrophages through similar mechanisms, thereby contributing to plaque development and subsequent macrovascular complications.

PMCID: PMC5097107
PMID: 27469259 [PubMed - in process]

Contemp Clin Trials. 2016 Dec 7;53:89-99.

The Lifestyle Intervention for the Treatment of Diabetes study (LIFT Diabetes): Design and baseline characteristics for a randomized translational trial to improve control of cardiovascular disease risk factors.

Katula JA, Kirk JK, Pedley CF, Savoca MR, Effoe VS, Bell RA, Bertoni AG; LIFT Diabetes Team.

The prevalence of type 2 diabetes continues to increase in minority and underserved patients, who are also more likely to have poorer control of diabetes and related risk factors for complications. Although the Look AHEAD trial has demonstrated improved risk factor control among overweight or obese diabetes patients who received an intensive lifestyle intervention, translating such findings into accessible programs is a major public health challenge. The purpose of this paper is to report the design and baseline characteristics of the Lifestyle Interventions for the Treatment of Diabetes study (LIFT Diabetes). The overall goal is to test the impact of a community-based lifestyle weight loss (LWL) intervention adapted from Look AHEAD on cardiovascular disease risk at 12-months and 24-months among minority and lower income diabetes patients. Secondary outcomes include body weight, physical activity, medication use, cost, resource utilization, and safety. The primary hypothesis being tested is that the LWL will result in 10% relative reduction in CVD risk compared to the DSM. We have randomized 260 overweight or obese adults with diabetes one of two 12-month interventions: a LWL condition delivered by community health workers or a diabetes self-management (DSM) education condition. The baseline demographic characteristics indicate that our sample is predominantly female, obese, low income, and ethnic minority. Translating evidence-based, lifestyle strategies, and targeting minority and underserved patients, will yield, if successful, a model for addressing the burden of diabetes and may favorably impact health disparities.

PMID: 27940180 [PubMed - as supplied by publisher]

J Womens Health (Larchmt). 2016 Nov;25(11):1139-1146..

Cardiovascular Disease Risk Among Young Urban Women.

Giardina EV, Paul TK, Hayes D, Sciacca RR.

BACKGROUND: Although young women are presumed to have low cardiovascular disease (CVD) risk and mortality, the mortality benefits secondary to ischemic heart disease have plateaued among young women, <50 years.
MATERIALS AND METHODS: Women, 18-49 years (n=595) among all participants (n=1,045) in the Columbia University Heart Health in Action Study, were assessed for CVD risk burden, that is, presence of hypertension, diabetes mellitus, current tobacco use, hyperlipidemia, physical inactivity, and/or obesity. Anthropometrics (height, weight, waist circumference, and body mass index [BMI]); demographics; socioeconomic status, CVD risk factors, body size perception; knowledge and awareness of CV disease; and attitudes toward lifestyle perception were determined.
RESULTS: Most were Hispanic (64.0%); non-Hispanic white (20.0%); or non-Hispanic black (8.7%), age=35.9±8.0 years. BMI was categorized as obese (≥30kg/m(2), 27.0%; 160/592); overweight (25.0-29.1kg/m(2), 29.1%; 172/592); normal weight (18.5-24.9, 41.7%; 247/592); and underweight (≤18.4; 2.2%; 13/592). More than half (57.9%; 337/582) had CVD risks: 45.9% (267/582) had >1 CVD risk factor exclusive of obesity, including physical inactivity (18.4%), hypertension (17.2%), hyperlipidemia (11.3%), current tobacco use (9.8%), and diabetes (5.6%). Regardless of CVD risk burden, most knew blood pressure, blood sugar, and cholesterol. Women with increased CVD risk burden, however, were less likely to correctly identify body size (53.3% vs. 66.1%, p=0.002). Obese and overweight women with CVD risk factors exclusive of obesity were more likely to cite cost (23.4% vs. 10.7%, p=0.003) and fatigue (32.2% vs. 18.8%, p=0.006) as barriers to weight loss.
CONCLUSION: Among these young women, the majority had CVD risks and the CVD risk burden is high among young women, particularly among the overweight and obese and physically inactive. Strategies to encourage healthy lifestyles and reduce CVD risk factors among this vulnerable at-risk population are vital.

PMCID: PMC5116662 [Available on 2017-11-01]
PMID: 27058670 [PubMed - in process]

J Clin Hypertens (Greenwich). 2016 Dec;18(12):1284-1294.

Improved Blood Pressure Control to Reduce Cardiovascular Disease Morbidity and Mortality: The Standardized Hypertension Treatment and Prevention Project.

Patel P, Ordunez P, DiPette D, Escobar MC, Hassell T, Wyss F, Hennis A, Asma S, Angell S; Standardized Hypertension Treatment and Prevention Network.

Hypertension is the leading remediable risk factor for cardiovascular disease, affecting more than 1 billion people worldwide, and is responsible for more than 10 million preventable deaths globally each year. While hypertension can be successfully diagnosed and treated, only one in seven persons with hypertension have controlled blood pressure. To meet the challenge of improving the control of hypertension, particularly in low- and middle-income countries, the authors developed the Standardized Hypertension Treatment and Prevention Project, which involves a health systems-strengthening approach that advocates for standardized hypertension management using evidence-based interventions. These interventions include the use of standardized treatment protocols, a core set of medications along with improved procurement mechanisms to increase the availability and affordability of these medications, registries for cohort monitoring and evaluation, patient empowerment, team-based care (task shifting), and community engagement. With political will and strong partnerships, this approach provides the groundwork to reduce high blood pressure and cardiovascular disease-related morbidity and mortality.

PMID: 27378199 [PubMed - in process]

J Lipid Res. 2016 Nov;57(11):1953-1975. Epub 2016 Sep 27.

Lipoprotein (a) as a cause of cardiovascular disease: insights from epidemiology, genetics, and biology.

Nordestgaard BG, Langsted A.

Human epidemiologic and genetic evidence using the Mendelian randomization approach in large-scale studies now strongly supports that elevated lipoprotein (a) [Lp(a)] is a causal risk factor for cardiovascular disease, that is, for myocardial infarction, atherosclerotic stenosis, and aortic valve stenosis. The Mendelian randomization approach used to infer causality is generally not affected by confounding and reverse causation, the major problems of observational epidemiology. This approach is particularly valuable to study causality of Lp(a), as single genetic variants exist that explain 27-28% of all variation in plasma Lp(a). The most important genetic variant likely is the kringle IV type 2 (KIV-2) copy number variant, as the apo(a) product of this variant influences fibrinolysis and thereby thrombosis, as opposed to the Lp(a) particle per se. We speculate that the physiological role of KIV-2 in Lp(a) could be through wound healing during childbirth, infections, and injury, a role that, in addition, could lead to more blood clots promoting stenosis of arteries and the aortic valve, and myocardial infarction. Randomized placebo-controlled trials of Lp(a) reduction in individuals with very high concentrations to reduce cardiovascular disease are awaited. Recent genetic evidence documents elevated Lp(a) as a cause of myocardial infarction, atherosclerotic stenosis, and aortic valve stenosis.

PMCID: PMC5087876 [Available on 2017-11-01]
PMID: 27677946 [PubMed - in process]

J Am Heart Assoc. 2016 Dec 20;5(12). pii: e004067.

Lifestyle Cardiovascular Risk Score, Genetic Risk Score, and Myocardial Infarction in Hispanic/Latino Adults Living in Costa Rica.

Sotos-Prieto M, Baylin A, Campos H, Qi L, Mattei J.

BACKGROUND: A lifestyle cardiovascular risk score (LCRS) and a genetic risk score (GRS) have been independently associated with myocardial infarction (MI) in Hispanics/Latinos. Interaction or joint association between these scores has not been examined. Thus, our aim was to assess interactive and joint associations between LCRS and GRS, and each individual lifestyle risk factor, on likelihood of MI.

METHODS AND RESULTS: Data included 1534 Costa Rican adults with nonfatal acute MI and 1534 matched controls. The LCRS used estimated coefficients as weights for each factor: unhealthy diet, physical inactivity, smoking, elevated waist:hip ratio, low/high alcohol intake, low socioeconomic status. The GRS included 14 MI-associated risk alleles. Conditional logistic regressions were used to calculate adjusted odds ratios. The odds ratios for MI were 2.72 (2.33, 3.17) per LCRS unit and 1.13 (95% CI 1.06, 1.21) per GRS unit. A significant joint association for highest GRS tertile and highest LCRS tertile and odds of MI was detected (odds ratio=5.43 [3.71, 7.94]; P<1.00×10(-7)), compared to both lowest tertiles. The odds ratios were 1.74 (1.22, 2.49) under optimal lifestyle and unfavorable genetic profile, and 5.02 (3.46, 7.29) under unhealthy lifestyle but advantageous genetic profile. Significant joint associations were observed for the highest GRS tertile and the highest of each lifestyle component risk category. The interaction term was nonsignificant (P=0.33).

CONCLUSIONS: Lifestyle risk factors and genetics are jointly associated with higher odds of MI among Hispanics/Latinos. Individual and combined lifestyle risk factors showed stronger associations. Efforts to improve lifestyle behaviors could help prevent MI regardless of genetic susceptibility.

PMID: 27998913 [PubMed - in process]

Arthritis Care Res (Hoboken). 2016 Dec 20. doi: 10.1002/acr.23171. [Epub ahead of print]

Incidence and Prevalence of Cardiovascular Risk Factors Among Patients With Rheumatoid Arthritis, Psoriasis, or Psoriatic Arthritis.

Radner H, Lesperance T, Accortt NA, Solomon DH.

OBJECTIVE: To estimate prevalence and incidence of cardiovascular (CV) risk factors of hypertension, diabetes mellitus, hyperlipidemia, and obesity in patients with rheumatoid arthritis (RA), psoriasis (PsO), or psoriatic arthritis (PsA).

METHODS: Patients with RA, PsO, or PsA were identified based on medical and pharmacy claims from the MarketScan claims databases from January 1, 2002 through December 31, 2014. Primary outcomes included age- and sex-standardized prevalence of CV risk factors during the 12 months preceding diagnosis date and incidence rates per 1,000 patient-years with 95% confidence intervals (CI) during follow-up.

RESULTS: Prevalence (95% CI) for RA, PsO, and PsA cohorts for hypertension was 18.6% (18.3%-18.8%), 16.6% (16.3%-17.0%), and 19.9% (19.4%-20.4%), respectively; for diabetes mellitus was 6.2% (6.1%-6.4%), 6.3% (6.0%-6.5%) and 7.8% (7.4%-8.2%); for hyperlipidemia was 9.9% (9.7%-10.1%), 10.4% (10.2%-10.7%), and 11.6% (11.2%-12.0%); and for obesity was 4.4% (4.2%-4.6%), 3.8% (3.5%-4.0%), and 6.0% (5.6%-6.5%). Incidence rates per 1,000 patient-years (95% CI) during

follow-up for RA, PsO, and PsA cohorts for hypertension were 74.0 (72.5-75.5), 68.2 (65.9-70.4), and 79.8 (76.3-83.3), respectively; for diabetes mellitus were 10.6 (10.1-11.1), 13.0 (12.1-13.8), and 14.7 (13.5-16.0); for hyperlipidemia were 40.3 (39.4-41.3), 47.1 (45.4-48.7), and 52.0 (49.6-54.3); and for obesity were 24.4 (23.4-25.4), 26.4 (25.0-27.8), and 32.9 (30.6-35.2).

CONCLUSION: Patients with RA, PsO, and PsA have high prevalence and incidence of CV risk factors, suggesting the need for risk factor monitoring of these patients.

PMID: 27998029 [PubMed - as supplied by publisher]

Am J Clin Nutr. 2016 Nov 23. pii: ajcn142521. [Epub ahead of print]

Total red meat intake of ≥0.5 servings/d does not negatively influence cardiovascular disease risk factors: a systemically searched meta-analysis of randomized controlled trials.

O'Connor LE, Kim JE, Campbell WW.

BACKGROUND: Observational associations between red meat intake and cardiovascular disease (CVD) are inconsistent. There are limited comprehensive analyses of randomized controlled trials (RCTs) that investigate the effects of red meat consumption on CVD risk factors.

OBJECTIVE: The purpose of this systematically searched meta-analysis was to assess the effects of consuming ≥0.5 or <0.5 servings of total red meat/d on CVD risk factors [blood total cholesterol (TC), LDL cholesterol, HDL cholesterol, triglycerides, ratio of TC to HDL cholesterol (TC:HDL), and systolic and diastolic blood pressures (SBP and DBP, respectively)]. We hypothesized that the consumption of ≥0.5 servings of total red meat/d would have a negative effect on these CVD risk factors.

DESIGN: Two researchers independently screened 945 studies from PubMed, Cochrane Library, and Scopus databases and extracted data from 24 qualified RCTs. Inclusion criteria were 1) RCT, 2) subjects aged ≥19 y, 3) consumption of ≥0.5 or <0.5 total red meat servings/d [35 g (1.25 ounces)], and 4) reporting ≥1 CVD risk factor. We performed an adjusted 2-factor nested ANOVA mixed-effects model procedure on the postintervention values of TC, LDL cholesterol, HDL cholesterol, TC:HDL cholesterol, triglycerides, SBP, and DBP; calculated overall effect sizes of change values; and used a repeated-measures ANOVA to assess pre- to postintervention changes.

RESULTS: Red meat intake did not affect lipid-lipoprotein profiles or blood pressure values postintervention (P > 0.05) or changes over time [weighted mean difference (95% CI): -0.01 mmol/L (-0.08, 0.06 mmol/L), 0.02 mmol/L (-0.05, 0.08 mmol/L), 0.03 mmol/L (-0.01, 0.07 mmol/L), and 0.04 mmol/L (-0.02, 0.10 mmol/L) mmol/L; -0.08 mm Hg (-0.26, 0.11 mm Hg); and -1.0 mm Hg (-2.4, 0.78 mm Hg) and 0.1 mm Hg (-1.2, 1.5 mm Hg) for TC, LDL cholesterol, HDL cholesterol, triglycerides, TC:HDL cholesterol, SBP, and DBP, respectively]. Among all subjects, TC, LDL cholesterol, HDL cholesterol, TC:HDL cholesterol, triglycerides, and DBP, but not SBP, decreased over time (P < 0.05).

CONCLUSIONS: The results from this systematically searched meta-analysis of RCTs support the idea that the consumption of ≥0.5 servings of total red meat/d does not influence blood lipids and lipoproteins or blood pressures.

PMID: 27881394 [PubMed - as supplied by publisher]

Medicine (Baltimore). 2016 Nov;95(45):e5361.

Intra-abdominal fat accumulation is a hypertension risk factor in young adulthood: A cross-sectional study.

Takeoka A, Tayama J, Yamasaki H, Kobayashi M, Ogawa S, Saigo T, Kawano H, Abiru N, Hayashida M, Maeda T, Shirabe S.

Accumulation of intra-abdominal fat is related to hypertension. Despite this, a relationship between hypertension and intra-abdominal fat in young adulthood is not clear. In this study, we verify whether intra-abdominal fat accumulation increases a hypertension risk in young adult subjects.In a cross-sectional study, intra-abdominal fat area was measured using a dual bioelectrical impedance analysis instrument in 697 university students (20.3±0.7 years, 425 men). Blood pressure and anthropometric factors were measured. Lifestyle variables including smoking, drinking, physical activity, and eating behavior were assessed with questionnaire. High blood pressure risk (systolic blood pressure ≥130mm Hg and/or diastolic blood pressure ≥85mm Hg) with increasing intra-abdominal fat area was evaluated.Participants were divided into 5 groups according to their intra-abdominal fat area (≤24.9, 25-49.9, 50-74.9, 75-99.9, and ≥100cm). As compared with the values of the smallest intra-abdominal fat area group, the crude and lifestyle-adjusted odds ratios (ORs) were elevated in larger intra-abdominal fat area groups [OR 1.31, 95% confidence interval (CI) 0.66-2.80; OR 3.38, 95% CI 1.60-7.57; OR 7.71, 95% CI 2.75-22.22; OR 18.74, 95% CI 3.93-105.64, respectively). The risk increase was observed only in men.Intra-abdominal fat accumulation is related to high blood pressure in men around 20 years of age. These results indicate the importance of evaluation and reduction of intra-abdominal fat to prevent hypertension.

PMCID: PMC5106067
PMID: 27828861 [PubMed - in process]

Br J Nutr. 2016 Oct;116(7):1246-1255. Epub 2016 Sep 13.

Dietary patterns and the risk of CVD and all-cause mortality in older British men.

Atkins JL, Whincup PH, Morris RW, Lennon LT, Papacosta O, Wannamethee SG.

Dietary patterns are a major risk factor for cardiovascular morbidity and mortality; however, few studies have examined this relationship in older adults. We examined prospective associations between dietary patterns and the risk of CVD and all-cause mortality in 3226 older British men, aged 60-79 years and free from CVD at baseline, from the British Regional Heart Study. Baseline FFQ data were used to generate thirty-four food groups. Principal component analysis identified dietary patterns that were categorised into quartiles, with higher quartiles representing higher adherence to the dietary pattern. Cox proportional hazards examined associations between dietary patterns and risk of all-cause mortality and cardiovascular outcomes. We identified three interpretable dietary patterns: 'high fat/low fibre' (high in red meat, meat products, white bread, fried potato, eggs), 'prudent' (high in poultry, fish, fruits, vegetables, legumes, pasta, rice, wholemeal bread, eggs, olive oil) and 'high sugar' (high in biscuits, puddings, chocolates, sweets, sweet spreads, breakfast cereals). During 11 years of follow-up, 899 deaths, 316 CVD-related deaths, 569 CVD events and 301 CHD events occurred. The 'high-fat/low-fibre' dietary pattern was associated with an increased risk of all-cause mortality only, after adjustment for confounders (highest v. lowest quartile; hazard ratio 1·44; 95 % CI 1·13, 1·84). Adherence to a 'high-sugar' diet was associated with a borderline significant trend for an increased risk of CVD and CHD events. The 'prudent' diet did not show a significant trend with cardiovascular outcomes or mortality. Avoiding 'high-fat/low-fibre' and 'high-sugar' dietary components may reduce the risk of cardiovascular events and all-cause mortality in older adults.

PMCID: PMC5053073
PMID: 27620002 [PubMed - in process]

Rev Esp Salud Publica. 2016 Nov 25;90:e1-e12.

[Awareness, Treatment and Control of Hypertension in Population Aged 16 to 90 Years Old in the Valencia Region, Spain, 2010].

[Article in Spanish]

Zubeldia Lauzurica L, Quiles Izquierdo J, Mañes Vinuesa J, Redón Más J.

OBJECTIVE: Hypertension is an important risk factor in terms of mortality attributable and the main modifiable cardiovascular risk factor. The aim of the study is to estimate the degree of awareness, treatment and control of hypertension in population of Valencia Region and identify predictors that explain the lack of proper control.
METHODS: Cross-sectional population-based study in 413 men and 415 women between 16 and 90 years participants in Nutrition Survey of Valencia held in 2010. Automatic sphygmomanometer was used for taking blood pressure. Hypertension was defined according to the criteria of 2007 European Society of Hypertension and the European Society of Cardiology. Data on knowledge and treatment were obtained by survey. Predictors for awareness, treatment and control of hypertension were estimated by logistic regression models.
RESULTS: The prevalence of hypertension estimated for the study population was 38.2% (95% CI: 34.9%-41.5%). 51.4% (95% CI: 45.9%-57.0%) of the hypertensive population, knew his condition. 88.8% of them (95% CI: 83.9%-93.6%) were receiving drug therapy and of these, 45.1% (95% CI: 36.9%-53.3%) maintained blood pressure controlled.
CONCLUSIONS: Since the last survey in Valencia Region, the degree of awareness of hypertension has not improved although an increase in those treated with antihypertensive drugs is observed.

PMID: 27885253 [PubMed - in process]

Clin Chem. 2016 Nov 4. pii: clinchem.2016.255190. [Epub ahead of print]

State of the Art: Blood Biomarkers for Risk Stratification in Patients with Stable Ischemic Heart Disease.

Omland T, White HD.

BACKGROUND: Multiple circulating biomarkers have been associated with the incidence of cardiovascular events and proposed as potential tools for risk stratification in stable ischemic heart disease (IHD), yet current guidelines do not make any firm recommendations concerning the use of biomarkers for risk stratification in this setting. This state-of-the-art review provides an overview of biomarkers for risk stratification in stable IHD.
CONTENT: Circulating biomarkers associated with the risk of cardiovascular events in patients with stable IHD reflect different pathophysiological processes, including myocardial injury, myocardial stress and remodeling, metabolic status, vascular inflammation, and oxidative stress. Compared to the primary prevention setting, biomarkers reflecting end-organ damage and future risk of heart failure
development and cardiovascular death may play more important roles in the stable IHD setting. Accordingly, biomarkers that reflect chronic, low-grade myocardial injury, and stress, i.e., high-sensitivity cardiac troponins and natriuretic peptides, provide graded and incremental prognostic information to conventional risk markers. In contrast, in stable IHD patients the prognostic value of traditional metabolic biomarkers, including serum lipids, is limited. Among several novel biomarkers, growth-differentiation factor-15 may provide the most robust prognostic information, whereas most inflammatory markers provide limited incremental prognostic information to risk factor models that include conventional risk factors, natriuretic peptides, and high-sensitivity troponins.
SUMMARY: Circulating biomarkers hold promise as useful tools for risk stratification in stable IHD, but their future incorporation into clinically useful risk scores will depend on prospective, rigorously performed clinical trials that document enhanced risk prediction.

PMID: 27815307 [PubMed - as supplied by publisher]

Eur J Heart Fail. 2016 Nov;18(11):1342-1350.

Biomarker-based risk prediction in the community.

AbouEzzeddine OF, McKie PM, Scott CG, Rodeheffer RJ, Chen HH, Michael Felker G, Jaffe AS, Burnett JC, Redfield MM.

AIMS: Guided by predictive characteristics of cardiovascular biomarkers, we explored the clinical implications of a simulated biomarker-guided heart failure (HF) and major adverse cardiovascular events (MACE) prevention strategy in the community.
METHODS AND RESULTS: In a community cohort (n = 1824), the predictive characteristics for HF and MACE of galectin-3 (Gal-3), ST2, high-sensitivity cardiac troponin I (hscTnI), high-sensitivity C-reactive protein (hsCRP), N-terminal pro-brain natriuretic peptide (NT-proBNP) and B-type natriuretic peptide (BNP) were established. We performed number needed to screen (NNS) and treat (NNT) with the intervention analyses according to biomarker screening strategy and intervention efficacy in persons with at least one cardiovascular risk factor. In the entire cohort, for both HF and MACE, the predictive characteristics of NT-proBNP and hscTnI were superior to other biomarkers; alone, in a multimarker model, and adjusting for clinical risk factors. An NT-proBNP-guided preventative intervention with an intervention effect size (4-year hazard ratio for intervention in biomarker positive cohort) of ≤0.7 would reduce the global burden of HF by ≥20% and MACE by ≥15%. From this simulation, the NNS to prevent one HF event or MACE in 4 years would be ≤100 with a NNT to prevent one HF event of ≤20 and one MACE of ≤10.
CONCLUSIONS: The predictive characteristics of NT-proBNP and hscTnI for HF or MACE in the community are superior to other biomarkers. Biomarker-guided preventative interventions with reasonable efficacy would compare favourably to established preventative interventions. This data provides a framework for biomarker selection which may inform design of biomarker-guided preventative intervention trials.

PMID: 27813304 [PubMed - in process]

Rev Clin Esp. 2016 Oct;216(7):345-351.

Stroke in young adults: Incidence rate, risk factors, treatment and prognosis.

[Article in English, Spanish]

González-Gómez FJ, Pérez-Torre P, DeFelipe A, Vera R, Matute C, Cruz-Culebras A, Álvarez-Velasco R, Masjuan J.

OBJECTIVES: To analyse the incidence, risk factors, aetiology, treatment and clinical evolution of young patients with stroke.
PATIENTS AND METHODS: Retrospective registry of patients aged 55 years or younger hospitalised in a stroke unit during 2014. We recorded the incidence rate for all strokes and analysed demographic data, risk factors, degree of stress, stroke type and aetiology, reperfusion treatments and clinical evolution.
RESULTS: The study included 110 patients, the majority of whom were men (60.9%, 1.6:1 ratio). The incidence rate was 13.3% (110 of 830 strokes). Most of the patients had cardiovascular risk factors. Smoking was the most common risk factor (56.4%), followed by arterial hypertension (50%), dyslipidaemia (42.7%), obesity (33%), diabetes (18.2%) and emboligenic heart disease (12.7%). Some 64.3% of the heart disease cases and 51.1% of the dyslipidaemia cases were discovered during
hospitalisation. Some 57.2% of the patients experienced psychosocial stress in the stage prior to the stroke. Some 83.6% of the stroke cases were ischaemic, 12.7% were haemorrhagic and 3.6% were venous sinus thrombosis. Of the ischaemic stroke cases, 30.4% were cryptogenic, 23.9% were lacunar, 16.3% were from uncommon causes, 15.2% were atherothrombotic and 14.1% were cardioembolic. Some 78.6% of the cerebral haemorrhage cases were hypertensive. Some 23.3% of the ischaemic stroke cases underwent reperfusion treatments in the acute phase, achieving levels of functional independence at 3 months of 62.5%.
CONCLUSIONS: The majority of stroke events in patients 55 years of age or younger appear to be related to a high prevalence of classical cardiovascular risk factors and possibly to psychosocial stress.

PMID: 27297118 [PubMed - in process]

Am J Clin Nutr. 2016 Dec 21. pii: ajcn139253. doi: 10.3945/ajcn.116.139253. [Epub ahead of print]

Effects of free sugars on blood pressure and lipids: a systematic review and meta-analysis of nutritional isoenergetic intervention trials.

Fattore E, Botta F, Agostoni C, Bosetti C.

BACKGROUND: Sugar has been suggested as a central risk factor in the development of noncommunicable diseases. OBJECTIVE: We assessed the evidence of the effects of free sugars compared with complex carbohydrates on selected cardiovascular disease risk factors. DESIGN: We conducted a systematic review and meta-analysis of intervention trials to compare diets that provide a given amount of energy from free sugars with a control diet that provides the same amount of energy from complex carbohydrates. The primary outcomes were: blood pressure, total cholesterol, low-density lipoprotein (LDL) cholesterol, high-density lipoprotein (HDL) cholesterol, triacylglycerols, apolipoproteins A-I and B, or very low-density lipoprotein cholesterol. Body weight was also recorded but was not a primary outcome of the studies. RESULTS: In all, 28 studies involving 510 volunteers were included. When free sugars were substituted for complex carbohydrates, no significant increases were detected in systolic or diastolic blood pressure, and no heterogeneity was observed. There were significant increases in HDL cholesterol, LDL cholesterol, and triacylglycerols, although for LDL cholesterol and triacylglycerols there was significant heterogeneity between studies and evidence of publication bias. After adjustment for missing studies, these increases lost significance. Subgroup analyses showed that diets providing the largest total energy intake and energy exchange enhanced the effect of free sugars on total and LDL cholesterol and triacylglycerols. The increase of triacylglycerols was no longer significant when studies with the highest risk of bias were excluded or when only randomized trials were considered. Free sugars had no effect on body weight. CONCLUSIONS: In short- or moderate-term isoenergetic intervention trials, the substitution of free sugars for complex carbohydrates had no effect on blood pressure or body weight and an unclear effect on blood lipid profile. Further independent trials are required to assess whether the reduction of free sugars improves cardiovascular disease risk factors. This review was registered at http://www.crd.york.ac.uk/prospero as CRD42016042930.

PMID: 28003201 [PubMed - as supplied by publisher]

Int J Artif Organs. 2016 Dec 19:0. doi: 10.5301/ijao.5000536. [Epub ahead of print]

Sleep quality and risk factors of atherosclerosis in predialysis chronic kidney disease.

Guney I, Akgul YS, Gencer V, Aydemir H, Aslan U, Ecirli S.

INTRODUCTION: Chronic kidney disease (CKD) patients have more frequent sleep disorders and cardiovascular disease than normals. Since arterial stiffness as a risk factor of atherosclerosis can be evaluated with pulse wave velocity (PWV), we aimed to investigate the prevalance of sleep quality (SQ) and the relationship between SQ and risk factors of atherosclerosis and whether there is a relationship between SQ and PWV (the indicator of arterial stiffness) in predialysis CKD patients.

METHODS: This cross-sectional study was carried out in CKD patients followed at the Nephrology Department in Konya, Turkey, between November 2014 and March 2015. A total of 484 CKD patients were screened. Of the 484 patients, 285 patients were excluded. The remaining 199 CKD patients without cardiovascular disease at stage 3, 4, and 5 (predialysis) were included in the final study. The SQ of the patients was evaluated by the Pittsburgh Sleep Quality Index (PSQI). PWV was measured by using a single-cuff arteriography device (Mobil-O-Graph PWA, a model pulse wave analysis device; IEM).

RESULTS: A total of 199 predialysis CKD patients were included in the study, 73 of whom (36.7 %) were 'poor sleepers' (global PSQI >5). Patients with poor SQ were older than those with good SQ (p = 0.077). SQ was worse in female patients compered to male patients (p = 0.001). SQ was worse in obese patients. As laboratory parameters, serum phosphorus, LDL cholesterol, and triglycerides levels correlated positively with SQ (respectively; r = 0.245, p&0.001; r = 0.142, p = 0.049; r = 0.142, p = 0.048). The indicator of arterial stiffness, PWV, was higher in patients with poor SQ (p = 0.033). Hyperphosphatemia and female gender are determined as risk factors for poor SQ in multivariate analysis (p = 0.049, ExpB = 1.477; p = 0.009, ExpB = 0,429, respectively).

CONCLUSIONS: Our study showed for the first time that there is a relationship between SQ and risk factors of atherosclerosis in predialysis CKD patients.

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DASH (Dietary Approaches to Stop Hypertension) Diet and Risk of Subsequent Kidney Disease.

Rebholz CM, Crews DC, Grams ME, Steffen LM, Levey AS, Miller ER 3rd, Appel LJ, Coresh J.

BACKGROUND: There are established guidelines for recommended dietary intake for hypertension treatment and cardiovascular disease prevention. Evidence is lacking for effective dietary patterns for kidney disease prevention. STUDY DESIGN: Prospective cohort study. SETTING & PARTICIPANTS: Atherosclerosis Risk in Communities (ARIC) Study participants with baseline estimated glomerular filtration rate (eGFR) ≥ 60mL/min/1.73m(2) (N=14,882). PREDICTOR: The Dietary Approaches to Stop Hypertension (DASH) diet score was calculated based on self-reported dietary intake of red and processed meat, sweetened beverages, sodium, fruits, vegetables, whole grains, nuts and legumes, and low-fat dairy products, averaged over 2 visits. OUTCOMES: Cases were ascertained based on the development of eGFRs<60mL/min/1.73m(2) accompanied by ≥25% eGFR decline from baseline, an International Classification of Diseases, Ninth/Tenth Revision code for a kidney disease-related hospitalization or death, or end-stage renal disease from baseline through 2012. RESULTS: 3,720 participants developed kidney disease during a median follow-up of 23 years. Participants with a DASH diet score in the lowest tertile were 16% more likely to develop kidney disease than those with the highest score tertile (HR, 1.16; 95% CI, 1.07-1.26; P for trend < 0.001), after adjusting for sociodemographics, smoking status, physical activity, total caloric intake, baseline eGFR, overweight/obese status, diabetes status, hypertension status, systolic blood pressure, and antihypertensive medication use. Of the individual components of the DASH diet score, high red and processed meat intake was adversely associated with kidney disease and high nuts, legumes, and low-fat dairy products intake was associated with reduced risk for kidney disease. LIMITATIONS: Potential measurement error due to self-reported dietary intake and lack of data for albuminuria. CONCLUSIONS: Consuming a DASH-style diet was associated with lower risk for kidney disease independent of demographic characteristics, established kidney risk factors, and baseline kidney function. Healthful dietary patterns such as the DASH diet may be beneficial for kidney disease prevention.

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Adherence to a Mediterranean-Style Diet and Appendicular Lean Mass in Community-Dwelling Older People: Results From the Berlin Aging Study II.

Nikolov J, Spira D, Aleksandrova K, Otten L, Meyer A, Demuth I, Steinhagen-Thiessen E, Eckardt R, Norman K.

BACKGROUND: Selected nutrients or food groups have often been studied with regard to long-term mortality and cardiovascular disease, whereas the relation between diet quality and appendicular lean mass (ALM) has rarely been researched.
OBJECTIVE: The aim of this study was to explore the association between a Mediterranean-style diet and ALM in community-dwelling older people.
METHODS: Cross-sectional data from the Berlin Aging Study II were available for 1,509 participants (51% women, 68.2±3.7 years). Nutrient intake was assessed using the European Prospective Investigation into Cancer and Nutrition Food Frequency Questionnaire. Adherence to a Mediterranean-style diet was evaluated with the modified Mediterranean-type diet score (mMedTypeDiet). ALM was determined by dual-energy X-ray absorptiometry and related to body mass index (ALM/BMI). A general linear regression model was carried out to assess the association between mMedTypeDiet score groups and ALM/BMI.
RESULTS: ALM/BMI was higher in women with a higher adherence to the mMedTypeDiet (0.64±0.1 vs 0.62±0.1 and 0.61±0.1 in low and medium adherence, retrospectively, $p = .004$). In the risk factor-adjusted general linear regression analysis, a higher adherence to the mMedTypeDiet was associated with higher ALM/BMI in women and better ALM/fat mass ratio when compared to a medium and a low diet quality. No significant associations were seen in men.
CONCLUSIONS: Higher adherence to a Mediterranean-style diet was associated with a positive effect on ALM/BMI in women.

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Risk factors measured in middle-aged men predicting coronary events in geriatric age.

Menotti A, Puddu PE.

OBJECTIVES: To explore the duration of the predictive power of major coronary risk factors measured on a single occasion in middle aged men for the occurrence of coronary heart disease (CHD) incidence and mortality during 50years of follow-up.
MATERIAL AND METHODS: In the Italian Rural Areas of the Seven Countries Study 1677 CHD-free men aged 40-59 were enrolled in 1960 and age, cigarette smoking, systolic blood pressure and serum cholesterol were measured. During 50years of follow-up 1641 men died, 451 had a major fatal or non-fatal CHD event (incidence) and 263 died from CHD. Five partitioned Cox proportional hazards models were computed, one for each independent and subsequent 10-year period. Five 10-year partitioned hazard scores, derived from multivariable coefficients, were cumulated for each risk factor and plotted against time.
RESULTS: The resulting curves showed increasing time trends for CHD incidence and mortality as a function of cigarette smoking, systolic blood pressure and serum cholesterol for the first 30-40years followed by a decline in the association that was more evident for serum cholesterol. The curves fit straight lines with large correlation coefficient ranging 0.82 to 0.99. The loss of predictive power after 30-40years was confirmed in a model covering 50years of follow-up and including the interaction term of risk factors/time.
CONCLUSION: A single measurement of major coronary risk factors is associated with CHD incidence and mortality for at least 30-40years of follow-up, entering the gerontologic age.

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