Ce bulletin de veille mensuel signale les articles récents, parus dans des revues scientifiques de renommée internationale, autour des pathologies graves qui devraient représenter les principales causes de mortalité et de handicap en 2030 pour les pays riches et les pays en voie de développement.

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**Pathologies suivies**

- Bronchite chronique obstructive
- Cancer du poumon
- Dengue
- Dépression
- Diabète
- Grippe A
- Maladie d'Alzheimer
- Maladies cardio-vasculaires
- Maladies liées à l'alcool
- Paludisme
- Pathologies liées à l'obésité
- Pathologies liées au tabagisme
- SIDA
- Tuberculose

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**Revue surveillées**

- American journal of epidemiology
- American journal of public health
- BMC public health
- BMJ (Clinical research ed.) - British medical journal
- International journal of epidemiology
- JAMA : the journal of the American Medical Association
- Lancet
- Nature
- Risk analysis : an official publication of the Society for Risk Analysis
- Science
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- The New England journal of medicine
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### Cancer du poumon

   

   

   

**BACKGROUND:** Chemotherapy for metastatic lung or colorectal cancer can prolong life by weeks or months and may provide palliation, but it is not curative. METHODS: We studied 1193 patients participating in the Cancer Care Outcomes Research and Surveillance (CanCORS) study (a national, prospective, observational cohort study) who were alive 4 months after diagnosis and received chemotherapy for newly diagnosed metastatic (stage IV) lung or colorectal cancer. We sought to characterize the prevalence of the expectation that chemotherapy might be curative and to identify the clinical, sociodemographic, and health-system factors associated with this expectation. Data were obtained from a patient survey by professional interviewers in addition to a comprehensive review of medical records. RESULTS: Overall, 69% of patients with lung cancer and 81% of those with colorectal cancer did not report understanding that chemotherapy was not at all likely to cure their cancer. In multivariable logistic regression, the risk of reporting inaccurate beliefs about chemotherapy was higher among patients with colorectal cancer, as compared with those with lung cancer (odds ratio, 1.75; 95% confidence interval [CI], 1.29 to 2.37); among nonwhite and Hispanic patients, as compared with non-Hispanic white patients (odds ratio for
Hispanic patients, 2.82; 95% CI, 1.51 to 5.27; odds ratio for black patients, 2.93; 95% CI, 1.80 to 4.78); and among patients who rated their communication with their physician very favorably, as compared with less favorably (odds ratio for highest third vs. lowest third, 1.90; 95% CI, 1.33 to 2.72). Educational level, functional status, and the patient's role in decision making were not associated with such inaccurate beliefs about chemotherapy. CONCLUSIONS: Many patients receiving chemotherapy for incurable cancers may not understand that chemotherapy is unlikely to be curative, which could compromise their ability to make informed treatment decisions that are consonant with their preferences. Physicians may be able to improve patients' understanding, but this may come at the cost of patients' satisfaction with them. (Funded by the National Cancer Institute and others.)


Lung squamous cell carcinoma is a common type of lung cancer, causing approximately 400,000 deaths per year worldwide. Genomic alterations in squamous cell lung cancers have not been comprehensively characterized, and no molecularly targeted agents have been specifically developed for its treatment. As part of The Cancer Genome Atlas, here we profile 178 lung squamous cell carcinomas to provide a comprehensive landscape of genomic and epigenomic alterations. We show that the tumour type is characterized by complex genomic alterations, with a mean of 360 exonic mutations, 165 genomic rearrangements, and 323 segments of copy number alteration per tumour. We find statistically recurrent mutations in 11 genes, including mutation of TP53 in nearly all specimens. Previously unreported loss-of-function mutations are seen in the HLA-A class I major histocompatibility gene. Significantly altered pathways included NFE2L2 and KEAP1 in 34%, squamous differentiation genes in 44%, phosphatidylinositol-3-OH kinase pathway genes in 47%, and CDKN2A and RB1 in 72% of tumours. We identified a potential therapeutic target in most tumours, offering new avenues of investigation for the treatment of squamous cell lung cancers.


OBJECTIVE: To estimate the risk of lung cancer associated with the use of different types of coal for household cooking and heating. SETTING: Xuanwei County, Yunnan Province, China. DESIGN: Retrospective cohort study (follow-up 1976-96) comparing mortality from lung cancer between lifelong users of "smoky coal" (bituminous) and "smokeless coal" (anthracite). PARTICIPANTS: 27,310 individuals using smoky coal and 9962 individuals using smokeless coal during their entire life. MAIN OUTCOME MEASURES: Primary outcomes were absolute and relative risk of death from lung cancer among users of different types of coal. Unadjusted survival analysis was used to estimate the absolute risk of lung cancer, while Cox regression models compared mortality hazards for lung cancer between smoky and smokeless coal users. RESULTS: Lung cancer mortality was substantially higher among users of smoky coal than users of smokeless coal. The absolute risks of lung cancer death before 70 years of age for men and women using smoky coal were 18% and 20%, respectively, compared with less than 0.5% among smokeless coal users of both sexes. Lung cancer alone accounted for about 40% of all deaths.
before age 60 among individuals using smoky coal. Compared with smokeless coal, use of smoky coal was associated with an increased risk of lung cancer death (for men, hazard ratio 36 (95% confidence interval 20 to 65); for women, 99 (37 to 266)). CONCLUSIONS: In Xuanwei, the domestic use of smoky coal is associated with a substantial increase in the absolute lifetime risk of developing lung cancer and is likely to represent one of the strongest effects of environmental pollution reported for cancer risk. Use of less carcinogenic types of coal could translate to a substantial reduction of lung cancer risk.

**Dengue**


This is the first sustained transmission of dengue in the European Union since the 1920s. Autochthonous transmission is likely to continue until the end of the year when mosquito density will probably decrease. The epidemiological situation does not imply any trade or travel restriction beyond the disinfections currently being implemented. As the influenza transmission season will commence around the end of the year, concomitant actions for monitoring dengue and influenza are being launched in Madeira.

**Diabète**


CONTEXT: Estimates of lifetime risk for total cardiovascular disease (CVD) may provide projections of the future population burden of CVD and may assist in clinician-patient risk communication. To date, no lifetime risk estimates of total CVD have been reported.

OBJECTIVES: To calculate lifetime risk estimates of total CVD by index age (45, 55, 65, 75 years) and risk factor strata and to estimate years lived free of CVD across risk factor strata.

DESIGN, SETTING, AND PARTICIPANTS: Pooled survival analysis of as many as 905,115 person-years of data from 1964 through 2008 from 5 National Heart, Lung, and Blood Institute-funded community-based cohorts: Framingham Heart Study, Framingham Offspring Study, Atherosclerosis Risk in Communities Study, Chicago Heart Association Detection Project in Industry Study, and Cardiovascular Health Study. All participants were free of CVD at baseline with risk factor data (blood pressure [BP], total cholesterol [TC], diabetes, and smoking status) and total CVD outcome data. MAIN OUTCOME MEASURES: Any total CVD event (including fatal and nonfatal coronary heart disease, all forms of stroke, congestive heart failure, and other CVD deaths). RESULTS: At an index age of 45 years, overall lifetime risk for total CVD was 60.3% (95% CI, 59.3%-61.2%) for men and 55.6% (95% CI, 54.5%-56.7%) for women. Men had higher lifetime risk estimates than women across all index ages. At index ages 55 and 65 years, men and women with at least 1 elevated risk factor (BP, 140-149/90-99 mm Hg; or TC, 200-239 mg/dL; but no diabetes or smoking), 1 major risk factor, or at least 2 major risk factors (BP, >/=160/100 mm Hg or receiving treatment; TC, >/=240 mg/dL or receiving treatment; diabetes mellitus; or current smoking) had
lifetime risk estimates to age 95 years that exceeded 50%. Despite an optimal risk factor profile (BP, <120/80 mm Hg; TC, <180 mg/dL; and no smoking or diabetes), men and women at the index age of 55 years had lifetime risks (through 85 years of age) for total CVD of greater than 40% and 30%, respectively. Compared with participants with at least 2 major risk factors, those with an optimal risk factor profile lived up to 14 years longer free of total CVD. CONCLUSIONS: Lifetime risk estimates for total CVD were high (>30%) for all individuals, even those with optimal risk factors in middle age. However, maintenance of optimal risk factor levels in middle age was associated with substantially longer morbidity-free survival

http://www.ncbi.nlm.nih.gov/pubmed/23117778

CONTEXT: Major cardiovascular diseases (CVDs) are leading causes of mortality among US Hispanic and Latino individuals. Comprehensive data are limited regarding the prevalence of CVD risk factors in this population and relations of these traits to socioeconomic status (SES) and acculturation. OBJECTIVES: To describe prevalence of major CVD risk factors and CVD (coronary heart disease [CHD] and stroke) among US Hispanic/Latino individuals of different backgrounds, examine relationships of SES and acculturation with CVD risk profiles and CVD, and assess cross-sectional associations of CVD risk factors with CVD. DESIGN, SETTING, AND PARTICIPANTS: Multicenter, prospective, population-based Hispanic Community Health Study/Study of Latinos including individuals of Cuban (n = 2201), Dominican (n = 1400), Mexican (n = 6232), Puerto Rican (n = 2590), Central American (n = 1634), and South American backgrounds (n = 1022) aged 18 to 74 years. Analyses involved 15,079 participants with complete data enrolled between March 2008 and June 2011. MAIN OUTCOME MEASURES: Adverse CVD risk factors defined using national guidelines for hypercholesterolemia, hypertension, obesity, diabetes, and smoking. Prevalence of CHD and stroke were ascertained from self-reported data. RESULTS: Age-standardized prevalence of CVD risk factors varied by Hispanic/Latino background; obesity and current smoking rates were highest among Puerto Rican participants (for men, 40.9% and 34.7%; for women, 51.4% and 31.7%, respectively); hypercholesterolemia prevalence was highest among Central American men (54.9%) and Puerto Rican women (41.0%). Large proportions of participants (80% of men, 71% of women) had at least 1 risk factor. Age- and sex-adjusted prevalence of 3 or more risk factors was highest in Puerto Rican participants (25.0%) and significantly higher (P < .001) among participants with less education (16.1%), those who were US-born (18.5%), those who had lived in the United States 10 years or longer (15.7%), and those who preferred English (17.9%). Overall, self-reported CHD and stroke prevalence were low (4.2% and 2.0% in men; 2.4% and 1.2% in women, respectively). In multivariate-adjusted models, hypertension and smoking were directly associated with CHD in both sexes as were hypercholesterolemia and obesity in women and diabetes in men (odds ratios [ORs], 1.5-2.2). For stroke, associations were positive with hypertension in both sexes, diabetes in men, and smoking in women (ORs, 1.7-2.6). CONCLUSION: Among US Hispanic/Latino adults of diverse backgrounds, a sizeable proportion of men and women had adverse major risk factors; prevalence of adverse CVD risk profiles was higher among participants with Puerto Rican background, lower SES, and higher levels of acculturation


CONTEXT: Previous studies have examined the associations of individual clinical risk factors with risk of peripheral artery disease (PAD), but the combined effects of these risk factors are largely unknown. OBJECTIVE: To estimate the degree to which the 4 conventional cardiovascular risk factors of smoking, hypertension, hypercholesterolemia, and type 2 diabetes are associated with the risk of PAD among men. DESIGN, SETTING, AND PARTICIPANTS: Prospective study of 44,985 men in the United States without a history of cardiovascular disease at baseline in 1986; participants in the Health Professionals Follow-up Study were followed up for 25 years until January 2011. The presence of risk factors was updated biennially during follow-up. MAIN OUTCOME MEASURE: Clinically significant PAD defined as limb amputation or revascularization, angiogram reporting vascular obstruction of 50% or greater, ankle-brachial index of less than 0.90, or physician-diagnosed PAD. RESULTS: During a median follow-up of 24.2 years (interquartile range, 20.8-24.7 years), there were 537 cases of incident PAD. Each risk factor was significantly and independently associated with a higher risk of PAD after adjustment for the other 3 risk factors and confounders. The age-adjusted incidence rates were 9 (95% CI, 6-14) cases/100,000 person-years (n = 19 incident cases) for 0 risk factors, 23 (95% CI, 18-28) cases/100,000 person-years (n = 99 incident cases) for 1 risk factor, 47 (95% CI, 39-56) cases/100,000 person-years (n = 176 incident cases) for 2 risk factors, 92 (95% CI, 76-111) cases/100,000 person-years (n = 180 incident cases) for 3 risk factors, and 186 (95% CI, 141-246) cases/100,000 person-years (n = 63 incident cases) for 4 risk factors. The multivariable-adjusted hazard ratio for each additional risk factor was 2.06 (95% CI, 1.88-2.26). Men without any of the 4 risk factors had a hazard ratio of PAD of 0.23 (95% CI, 0.14-0.36) compared with all other men in the cohort. In 96% of PAD cases (95% CI, 94%-98%), at least 1 of the 4 risk factors was present at the time of PAD diagnosis. The population-attributable risk associated with these 4 risk factors was 75% (95% CI, 64%-87%). The absolute incidence of PAD among men with all 4 risk factors was 3.5/1000 person-years. CONCLUSION: Among men in this cohort, smoking, hypertension, hypercholesterolemia, and type 2 diabetes account for the majority of risk associated with development of clinically significant PAD


OBJECTIVE: To determine if a low glycaemic index diet in pregnancy could reduce the incidence of macrosomia in an at risk group. DESIGN: Randomised controlled trial. SETTING: Maternity hospital in Dublin, Ireland. PARTICIPANTS: 800 women without diabetes, all in their second pregnancy between January 2007 to January 2011, having previously delivered an infant weighing greater than 4 kg. INTERVENTION: Women were randomised to receive no dietary intervention or start on a low glycaemic index diet from early pregnancy. MAIN OUTCOMES: The primary outcome measure was difference in birth weight. The secondary outcome measure was difference in gestational weight gain. RESULTS: No significant difference was seen between the two groups in absolute birth weight, birthweight centile, or ponderal index. Significantly less gestational weight gain occurred in women in the intervention arm (12.2 v 13.7 kg; mean difference -1.3, 95% confidence interval -2.4 to -0.2; P=0.01). The rate of glucose intolerance was also lower in the intervention arm: 21% (67/320) compared with 28% (100/352) of controls had a fasting glucose of 5.1 mmol/L or greater or a 1 hour glucose challenge test result of greater than 7.8 mmol/L (P=0.02). CONCLUSION: A low glycaemic index diet in pregnancy did not reduce the incidence of large for gestational age infants in a group at risk of fetal macrosomia. It did, however, have a significant positive effect on gestational weight gain and maternal glucose intolerance. TRIAL REGISTRATION: Current Controlled Trials ISRCTN54392969


OBJECTIVE: To examine the effect of systolic and diastolic blood pressure achieved in the first year of treatment on all cause mortality in patients newly diagnosed with type 2 diabetes, with and without established cardiovascular disease. DESIGN: Retrospective cohort study. SETTING: United Kingdom General Practice Research Database, between 1990 and 2005. PARTICIPANTS: 126,092 adult patients (age >/= 18 years) with a new diagnosis of type 2 diabetes who had been registered with participating practices for at least 12 months. MAIN OUTCOME MEASURE: All cause mortality. RESULTS: Before diagnosis, 12,379 (9.8%) patients had established cardiovascular disease (myocardial infarction or stroke). During a median follow-up of 3.5 years, we recorded 25,495 (20.2%) deaths. In people with cardiovascular disease, tight control of systolic (<130 mm Hg) and diastolic (<80 mm Hg) blood pressure was not associated with improved survival, after adjustment for baseline characteristics (age at diagnosis, sex, practice level clustering, deprivation score, body mass index, smoking, HbA(1c) and cholesterol levels, and blood pressure). Low blood pressure was also associated with an increased risk of all cause
mortality. Compared with patients who received usual control of systolic blood pressure (130-139 mm Hg), the hazard ratio of all cause mortality was 2.79 (95% confidence interval 1.74 to 4.48, P<0.001) for systolic blood pressure at 110 mm Hg. Compared with patients who received usual control of diastolic blood pressure (80-84 mm Hg), the hazard ratios were 1.32 (1.02 to 1.78, P=0.04) and 1.89 (1.40 to 2.56, P<0.001) for diastolic blood pressures at 70-74 mm Hg and lower than 70 mm Hg, respectively. Similar associations were found in people without cardiovascular disease. Subgroup analyses of people diagnosed with hypertension and who received treatment for hypertension confirmed initial findings. CONCLUSION: Blood pressure below 130/80 mm Hg was not associated with reduced risk of all cause mortality in patients with newly diagnosed diabetes, with or without known cardiovascular disease. Low blood pressure, particularly below 110/75 mm Hg, was associated with an increased risk for poor outcomes


OBJECTIVE: To assess the contribution of modifiable risk factors to social inequalities in the incidence of type 2 diabetes when these factors are measured at study baseline or repeatedly over follow-up and when long term exposure is accounted for. DESIGN: Prospective cohort study with risk factors (health behaviours (smoking, alcohol consumption, diet, and physical activity), body mass index, and biological risk markers (systolic blood pressure, triglycerides and high density lipoprotein cholesterol)) measured four times and diabetes status assessed seven times between 1991-93 and 2007-09. SETTING: Civil service departments in London (Whitehall II study). PARTICIPANTS: 7237 adults without diabetes (mean age 49.4 years; 2196 women). MAIN OUTCOME MEASURES: Incidence of type 2 diabetes and contribution of risk factors to its association with socioeconomic status. RESULTS: Over a mean follow-up of 14.2 years, 818 incident cases of diabetes were identified. Participants in the lowest occupational category had a 1.86-fold (hazard ratio 1.86, 95% confidence interval 1.48 to 2.32) greater risk of developing diabetes relative to those in the highest occupational category. Health behaviours and body mass index explained 33% (-1% to 78%) of this socioeconomic differential when risk factors were assessed at study baseline (attenuation of hazard ratio from 1.86 to 1.51), 36% (22% to 66%) when they were assessed repeatedly over the follow-up (attenuated hazard ratio 1.48), and 45% (28% to 75%) when long term exposure over the follow-up was accounted for (attenuated hazard ratio 1.41). With additional adjustment for biological risk markers, a total of 53% (29% to 88%) of the socioeconomic differential was explained (attenuated hazard ratio 1.35, 1.05 to 1.72). CONCLUSIONS: Modifiable risk factors such as health behaviours and obesity, when measured repeatedly over time, explain almost half of the social inequalities in incidence of type 2 diabetes. This is more than was seen in previous studies based on single measurement of risk factors


OBJECTIVES: To evaluate the efficacy and safety of currently used drug eluting stents compared with each other and compared with bare metal stents in patients with diabetes. DESIGN: Mixed treatment comparison meta-analysis. DATA SOURCES AND STUDY SELECTION: PubMed, Embase, and CENTRAL were searched for randomised clinical trials, until April 2012, of four
durable polymer drug eluting stents (sirolimus eluting stents, paclitaxel eluting stents, everolimus eluting stents, and zotarolimus eluting stents) compared with each other or with bare metal stents for the treatment of de novo coronary lesions and enrolling at least 50 patients with diabetes.

PRIMARY OUTCOMES: Efficacy (target vessel revascularisation) and safety (death, myocardial infarction, stent thrombosis).

RESULTS: From 42 trials with 22,844 patient years of follow-up, when compared with bare metal stents (reference rate ratio 1) all of the currently used drug eluting stents were associated with a significant reduction in target vessel revascularisation (37% to 69%), though the efficacy varied with the type of stent (everolimus eluting stents~sirolimus eluting stents>paclitaxel eluting stents~zotarolimus eluting stent>bare metal stents). There was about an 87% probability that everolimus eluting stents were the most efficacious compared with all others, though there were limited usable data for the zotarolimus eluting Resolute stent in patients with diabetes. Moreover, there was no increased risk of any safety outcome (including very late stent thrombosis) with any drug eluting stents compared with bare metal stents. There was about a 62% probability that the everolimus eluting stent was the safest stent for the outcome of “any” stent thrombosis.

CONCLUSIONS: Among patients with diabetes treated with coronary stents all currently available drug eluting stents were efficacious without compromising safety compared with bare metal stents. There were relative differences among the drug eluting stents, such that the everolimus eluting stent was the most efficacious and safe.


Large-scale genome-wide association studies (GWAS) have identified over 40 genomic regions significantly associated with type 2 diabetes mellitus. However, GWAS results are not always straightforward to interpret, and linking these loci to meaningful disease etiology is often difficult without extensive follow-up studies. The authors expanded on previously reported type 2 diabetes mellitus GWAS from the nested case-control studies of 2 prospective US cohorts by incorporating expression single nucleotide polymorphism (SNP) information and applying SNP set enrichment analysis to identify sets of SNPs associated with genes that could provide further biologic insight to traditional genome-wide analysis. Using data collected between 1989 and 1994 in these previous studies to form a nested case-control study, the authors found that 3 of the most significantly associated SNPs to type 2 diabetes mellitus in their study are expression SNPs to the lymphocyte antigen 75 gene (LY75), the ubiquitin-specific peptidase 36 gene (USP36), and the phosphatidylinositol transfer protein, cytoplasmic 1 gene (PITPNC1). SNP set enrichment analysis of the GWAS results identified enrichment for expression SNPs to the macrophage-enriched module and the Gene Ontology (GO) biologic process fat cell differentiation human, which includes the transcription factor 7-like 2 gene (TCF7L2), as well as other type 2 diabetes mellitus-associated genes. Integrating genome-wide association, gene expression, and gene set analysis may provide valuable biologic support for potential type 2 diabetes mellitus susceptibility loci and may be useful in identifying new targets or pathways of interest for the treatment and prevention of type 2 diabetes mellitus.


Successful management of type 2 diabetes requires support and collaboration between diabetic patients, their health care providers, family and community. Using data collected in 1994-2001, we describe illness beliefs of physicians, patients, and representative samples of community members in the US and Mexico. We test whether differences in conceptualizations of diabetes are greater across national and linguistic boundaries or between physicians and lay groups.
Interviews were conducted in southern Texas on the Mexican border and in Guadalajara, Mexico. Culturally appropriate interview materials were developed with a mixed-methods approach. Qualitative interviews elicited beliefs about causes, risks, symptoms, and treatments for diabetes and salient themes were incorporated into structured interviews. A cultural consensus analysis was used to verify salient themes within each of the six samples. The consistency in responses in each of the six samples indicated a shared core of beliefs that transcended individual variations. The greatest differences occurred between physician and lay samples; patient and community models were more similar to one another than to the physician models. Differences between physicians and patients may affect optimal management of diabetes, but these differences do not appear to be simply a function of differences in national culture and language, as the largest differences occurred in Mexico. This suggests that rather than cultural competence per se, formal educational levels and class differences may also play an important role in patient understanding and the gap in patient-provider understanding.


BACKGROUND: Persistent organic pollutants (POPs) are hazardous chemicals omnipresent in our food chain, which have been internationally regulated to ensure public health. Initially described for their potency to affect reproduction and promote cancer, recent studies have highlighted an unexpected implication of POPs in the development of metabolic diseases like type 2 diabetes and obesity. Based on this novel knowledge, this article aims at stimulating discussion and evaluating the effectiveness of current POP legislation to protect humans against the risk of metabolic diseases. Furthermore, the regulation of POPs in animal food products in the European Union (EU) is addressed, with a special focus on marine food since it may represent a major source of POP exposure to humans. DISCUSSION: There is mounting scientific evidence showing that current POP risk assessment and regulation cannot effectively protect humans against metabolic disorders. Better regulatory control of POPs in dietary products should be of high public health priority. SUMMARY: The general population is exposed to sufficient POPs, both in term of concentration and diversity, to induce metabolic disorders. This situation should attract the greatest attention from the public health and governmental authorities.

Dépression


The aim of the study was to examine the social networks of sexual minority youths and to determine the associations between social networks and depressive symptoms. Data were obtained from the National Longitudinal Study of Adolescent Health (Add Health), a nationally representative cohort study of American adolescents (N = 14,212). Wave 1 (1994-1995) collected extensive information about the social networks of participants through peer nomination inventories, as well as measures of sexual minority status and depressive symptoms. Using social network data, we examined three characteristics of adolescents' social relationships: (1) social isolation; (2) degree of connectedness; and (3) social status. Sexual minority youths, particularly females, were more isolated, less connected, and had lower social status in peer networks than opposite-sex attracted youths. Among sexual minority male (but not female) youths, greater isolation as well as lower connectedness and status within a network were associated with greater depressive symptoms. Moreover, greater isolation in social networks partially explained the association between sexual minority status and depressive symptoms among males. Finally, a significant 3-way interaction indicated that the association between social isolation and depression was stronger for sexual minority male youths than non-minority youths and sexual minority females. These results suggest that the social networks in which sexual minority male youths are embedded may confer risk for depressive symptoms, underscoring the importance of considering peer networks in both research and interventions targeting sexual minority male adolescents


To date, few systematic reviews of observational studies have been conducted to comprehensively evaluate the co-morbidity of intimate partner violence (IPV) and specific depression outcomes in women. In this systematic review and meta-analysis, we summarize the extant literature and estimate the magnitude of the association between IPV and key depressive outcomes (elevated depressive symptoms, diagnosed major depressive disorder and postpartum depression). PubMed (January 1, 1980-December 31, 2010) searches of English-language observational studies were conducted. Most of the selected 37 studies had cross-sectional population-based designs, focused on elevated depressive symptoms and were conducted in the United States. Most studies suggested moderate or strong positive associations between IPV and depression. Our meta-analysis suggested two to three-fold increased risk of major depressive disorder and 1.5-2-fold increased risk of elevated depressive symptoms and postpartum depression among women exposed to intimate partner violence relative to non-exposed women. A sizable proportion (9%-28%) of major depressive disorder, elevated depressive symptoms, and postpartum depression can be attributed to lifetime exposure to IPV. In an effort to reduce the burden of depression, continued research is recommended for evaluating IPV preventive strategies

Perceived discrimination has been shown to be associated with health. However, it is uncertain whether discrimination based on geographical place of residence (geographically-based discrimination), such as Buraku or Nishinari discrimination in Japan, is associated with health. We conducted a cross-sectional study (response rate = 52.3%) from February to March 2009 in a Buraku district of Nishinari ward in Osaka city, one of the most deprived areas in Japan. We implemented sex-stratified and education-stratified multivariate regression models to examine the association between geographically-based discrimination and two mental health outcomes (depressive symptoms and diagnosis of mental illness) with adjustment for age, socioeconomic status, social relationships and lifestyle factors. A total of 1994 persons aged 25-79 years (928 men and 1066 women) living in the district were analyzed. In the fully-adjusted model, perceived geographically-based discrimination was significantly associated with depressive symptoms and diagnosis of mental illness. It was more strongly associated among men or highly educated people than among women or among less educated people. The effect of geographically-based discrimination on mental health is independent of socioeconomic status, social relationship and lifestyle factors. Geographically-based discrimination may be one of the social determinants of mental health.

Etudes sur le tabagisme


CONTEXT: Estimates of lifetime risk for total cardiovascular disease (CVD) may provide projections of the future population burden of CVD and may assist in clinician-patient risk communication. To date, no lifetime risk estimates of total CVD have been reported.

OBJECTIVES: To calculate lifetime risk estimates of total CVD by index age (45, 55, 65, 75 years) and risk factor strata and to estimate years lived free of CVD across risk factor strata. DESIGN, SETTING, AND PARTICIPANTS: Pooled survival analysis of as many as 905,115 person-years of data from 1964 through 2008 from 5 National Heart, Lung, and Blood Institute-funded community-based cohorts: Framingham Heart Study, Framingham Offspring Study, Atherosclerosis Risk in Communities Study, Chicago Heart Association Detection Project in Industry Study, and Cardiovascular Health Study. All participants were free of CVD at baseline with risk factor data (blood pressure [BP], total cholesterol [TC], diabetes, and smoking status) and total CVD outcome data. MAIN OUTCOME MEASURES: Any total CVD event (including fatal and nonfatal coronary heart disease, all forms of stroke, congestive heart failure, and other CVD deaths). RESULTS: At an index age of 45 years, overall lifetime risk for total CVD was 60.3% (95% CI, 59.3%-61.2%) for men and 55.6% (95% CI, 54.5%-56.7%) for women. Men had higher lifetime risk estimates than women across all index ages. At index ages 55 and 65 years, men and women with at least 1 elevated risk factor (BP, 140-149/90-99 mm Hg; or TC, 200-239 mg/dL; but no diabetes or smoking), 1 major risk factor, or at least 2 major risk factors (BP, >/=160/100 mm Hg or receiving treatment; TC, >/=240 mg/dL or receiving treatment; diabetes mellitus; or current smoking) had lifetime risk estimates to age 95 years that exceeded 50%. Despite an optimal risk factor profile (BP, <120/80 mm Hg; TC, <180 mg/dL; and no smoking or diabetes), men and women at the index age of 55 years had lifetime risks (through 85 years of age) for total CVD of greater than 40% and 30%, respectively. Compared with participants with at least 2 major risk factors, those with an optimal risk factor profile lived up to 14 years longer free of total CVD. CONCLUSIONS: Lifetime risk estimates for total CVD were high (>30%) for all individuals, even those with optimal...
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http://www.ncbi.nlm.nih.gov/pubmed/23117778

CONTEXT: Major cardiovascular diseases (CVDs) are leading causes of mortality among US Hispanic and Latino individuals. Comprehensive data are limited regarding the prevalence of CVD risk factors in this population, and the relationships of these traits to socioeconomic status (SES) and acculturation. OBJECTIVES: To describe prevalence of major CVD risk factors and CVD (coronary heart disease [CHD] and stroke) among US Hispanic/Latino individuals of different backgrounds, examine relationships of SES and acculturation with CVD risk profiles and CVD, and assess cross-sectional associations of CVD risk factors with CVD. DESIGN, SETTING, AND PARTICIPANTS: Multicenter, prospective, population-based Hispanic Community Health Study/Study of Latinos including individuals of Cuban (n = 2201), Dominican (n = 1400), Mexican (n = 6232), Puerto Rican (n = 2590), Central American (n = 1634), and South American backgrounds (n = 1022) aged 18 to 74 years. Analyses involved 15,079 participants with complete data enrolled between March 2008 and June 2011. MAIN OUTCOME MEASURES: Adverse CVD risk factors defined using national guidelines for hypercholesterolemia, hypertension, obesity, diabetes, and smoking. Prevalence of CHD and stroke were ascertained from self-reported data.
RESULTS: Age-standardized prevalence of CVD risk factors varied by Hispanic/Latino background; obesity and current smoking rates were highest among Puerto Rican participants (for men, 40.9% and 34.7%; for women, 51.4% and 31.7%, respectively); hypercholesterolemia prevalence was highest among Central American men (54.9%) and Puerto Rican women (41.0%). Large proportions of participants (80% of men, 71% of women) had at least 1 risk factor. Age- and sex-adjusted prevalence of 3 or more risk factors was highest in Puerto Rican participants (25.0%) and significantly higher (P < .001) among participants with less education (16.1%), those who were US-born (18.5%), those who had lived in the United States 10 years or longer (15.7%), and those who preferred English (17.9%). Overall, self-reported CHD and stroke prevalence were low (4.2% and 2.0% in men; 2.4% and 1.2% in women, respectively). In multivariate-adjusted models, hypertension and smoking were directly associated with CHD in both sexes as were hypercholesterolemia and obesity in women and diabetes in men (odds ratios [ORs], 1.5-2.2). For stroke, associations were positive with hypertension in both sexes, diabetes in men, and smoking in women (ORs, 1.7-2.6). CONCLUSION: Among US Hispanic/Latino adults of diverse backgrounds, a sizeable proportion of men and women had adverse major risk factors; prevalence of adverse CVD risk profiles was higher among participants with Puerto Rican background, lower SES, and higher levels of acculturation


CONTEXT: Previous studies have examined the associations of individual clinical risk factors with risk of peripheral artery disease (PAD), but the combined effects of these risk factors are largely unknown. OBJECTIVE: To estimate the degree to which the 4 conventional cardiovascular risk factors of smoking, hypertension, hypercholesterolemia, and type 2 diabetes are associated with the risk of PAD among men. DESIGN, SETTING, AND PARTICIPANTS: Prospective study of 44,985 men in the United States without a history of cardiovascular disease at baseline in 1986; participants in the Health Professionals Follow-up Study were followed up for 25 years until January 2011. The presence of risk factors was updated biennially during follow-up. MAIN OUTCOME MEASURE: Clinically significant PAD defined as limb amputation or revascularization, angiogram reporting vascular obstruction of 50% or greater, ankle-brachial index of less than 0.90, or physician-diagnosed PAD. RESULTS: During a median follow-up of 24.2 years (interquartile range, 20.8-24.7 years), there were 537 cases of incident PAD. Each risk factor was significantly and independently associated with a higher risk of PAD after adjustment for the other 3 risk factors and confounders. The age-adjusted incidence rates were 9 (95% CI, 6-14) cases/100,000 person-years (n = 19 incident cases) for 0 risk factors, 23 (95% CI, 18-28) cases/100,000 person-years (n = 99 incident cases) for 1 risk factor, 47 (95% CI, 39-56) cases/100,000 person-years (n = 176 incident cases) for 2 risk factors, 92 (95% CI, 76-111) cases/100,000 person-years (n = 180 incident cases) for 3 risk factors, and 186 (95% CI, 141-246) cases/100,000 person-years (n = 63 incident cases) for 4 risk factors. The multivariable-adjusted hazard ratio for each additional risk factor was 2.06 (95% CI, 1.88-2.26). Men without any of the 4 risk factors had a hazard ratio of PAD of 0.23 (95% CI, 0.14-0.36) compared with all other men in the cohort. In 96% of PAD cases (95% CI, 94%-98%), at least 1 of the 4 risk factors was present at the time of PAD diagnosis. The population-attributable risk associated with these 4 risk factors was 75% (95% CI, 64%-87%). The absolute incidence of PAD among men with all 4 risk factors was 3.5/1000 person-years. CONCLUSION: Among men in this cohort, smoking, hypertension, hypercholesterolemia, and type 2 diabetes account for the majority of risk associated with development of clinically significant PAD.


(12) BRODY H. **Chronic obstructive pulmonary disease.** Nature. 2012 Sept. 27, vol. 489, n° 7417, p.S1


OBJECTIVE: To test whether elevated concentration of rheumatoid factor is associated with long term development of rheumatoid arthritis. DESIGN: A prospective cohort study, the Copenhagen City Heart Study. Blood was drawn in 1981-83, and participants were followed until 10 August 2010. SETTING: Copenhagen general population. PARTICIPANTS: 9712 white Danish individuals from the general population aged 20-100 years without rheumatoid arthritis at study entry. MAIN OUTCOME MEASURES: Rheumatoid arthritis according to baseline plasma IgM rheumatoid factor level categories of 25-50, 50.1-100, and >100, versus <25 IU/mL. RESULTS: Rheumatoid factor levels were similar from age 20 to 100 years. During 187,659 person years, 183 individuals developed rheumatoid arthritis. In healthy individuals, a doubling in levels of rheumatoid factor was associated with a 3.3-fold (95% confidence interval 2.7 to 4.0) increased risk of developing rheumatoid arthritis, with a similar trend for most other autoimmune rheumatic diseases. The cumulative incidence of rheumatoid arthritis increased with increasing rheumatoid factor category (P(trend)<0.0001). Multivariable adjusted hazard ratios for rheumatoid arthritis were 3.6 (95% confidence interval 1.7 to 7.3) for rheumatoid factor levels of 25-50 IU/mL, 6.0 (3.4 to 10) for 50.1-100 IU/mL, and 26 (15 to 46) for >100 IU/mL, compared with <25 IU/mL (P(trend)<0.0001). The highest absolute 10 year risk of rheumatoid arthritis of 32% was observed in 50-69 years old women who smoked with rheumatoid factor levels >100 IU/mL. CONCLUSION: Individuals in the general population with elevated rheumatoid factor have up to 26-fold greater long term risk of rheumatoid arthritis, and up to 32% 10 year absolute risk of rheumatoid arthritis. These novel findings may lead to revision of guidelines for early referral to a rheumatologist and early arthritis clinics based on rheumatoid factor testing


OBJECTIVE: To identify modifiable factors associated with longevity among adults aged 75 and older. DESIGN: Population based cohort study. SETTING: Kungsholmen, Stockholm, Sweden. PARTICIPANTS: 1810 adults aged 75 or more participating in the Kungsholmen Project, with follow-up for 18 years. MAIN OUTCOME MEASUREMENT: Median age at death. Vital status from 1987 to 2005. RESULTS: During follow-up 1661 (91.8%) participants died. Half of the participants lived longer than 90 years. Half of the current smokers died 1.0 year (95% confidence interval 0.0 to 1.9 years) earlier than non-smokers. Of the leisure activities, physical activity was most strongly associated with survival; the median age at death of participants who regularly swim, walked, or did gymnastics was 2.0 years (0.7 to 3.3 years) greater than those who did not. The median survival of people with a low risk profile (healthy lifestyle behaviours, participation in at least one leisure activity, and a rich or moderate social network) was 5.4 years longer than those with a high risk profile (unhealthy lifestyle behaviours, no participation in leisure activities, and a limited or
Even among the oldest old (85 years or older) and people with chronic conditions, the median age at death was four years higher for those with a low risk profile compared with those with a high risk profile. CONCLUSION: Even after age 75 lifestyle behaviours such as not smoking and physical activity are associated with longer survival. A low risk profile can add five years to women's lives and six years to men's. These associations, although attenuated, were also present among the oldest old (>= 85 years) and in people with chronic conditions.


OBJECTIVE: To estimate the risk of lung cancer associated with the use of different types of coal for household cooking and heating. SETTING: Xuanwei County, Yunnan Province, China. DESIGN: Retrospective cohort study (follow-up 1976-96) comparing mortality from lung cancer between lifelong users of "smoky coal" (bituminous) and "smokeless coal" (anthracite). PARTICIPANTS: 27,310 individuals using smoky coal and 9962 individuals using smokeless coal during their entire life. MAIN OUTCOME MEASURES: Primary outcomes were absolute and relative risk of death from lung cancer among users of different types of coal. Unadjusted survival analysis was used to estimate the absolute risk of lung cancer, while Cox regression models compared mortality hazards for lung cancer between smoky and smokeless coal users. RESULTS: Lung cancer mortality was substantially higher among users of smoky coal than users of smokeless coal. The absolute risks of lung cancer death before 70 years of age for men and women using smoky coal were 18% and 20%, respectively, compared with less than 0.5% among smokeless coal users of both sexes. Lung cancer alone accounted for about 40% of all deaths before age 60 among individuals using smoky coal. Compared with smokeless coal, use of smoky coal was associated with an increased risk of lung cancer death (for men, hazard ratio 36 (95% confidence interval 20 to 65); for women, 99 (37 to 266)). CONCLUSIONS: In Xuanwei, the domestic use of smoky coal is associated with a substantial increase in the absolute lifetime risk of developing lung cancer and is likely to represent one of the strongest effects of environmental pollution reported for cancer risk. Use of less carcinogenic types of coal could translate to a substantial reduction of lung cancer risk.

SWEET M. "Big tobacco can be taken on and beaten," say Australian officials. BMJ. 2012, vol. 345, p.e5579


OBJECTIVES: Although US cigarette smoking is decreasing, hookah tobacco smoking (HTS) is an emerging trend associated with substantial toxicant exposure. We assessed how a representative sample of US tobacco control policies may apply to HTS. METHODS: We examined municipal, county, and state legal texts applying to the 100 largest US cities. We developed a summary policy variable that distinguished among cities on the basis of how current tobacco control policies may apply to HTS and used multinomial logistic regression to determine associations between community-level sociodemographic variables and the policy outcome variable. RESULTS: Although 73 of the 100 largest US cities have laws that disallow cigarette smoking in bars, 69 of these cities have exemptions that allow HTS; 4 of the 69 have passed legislation specifically exempting HTS, and 65 may permit HTS via generic tobacco retail establishment exemptions. Cities in which HTS may be exempted had denser populations than cities without clean air legislation. CONCLUSIONS: Although three fourths of the largest US cities
disallow cigarette smoking in bars, nearly 90% of these cities may permit HTS via exemptions. Closing this gap in clean air regulation may significantly reduce exposure to HTS.


OBJECTIVES: We estimated e-cigarette (electronic nicotine delivery system) awareness, use, and harm perceptions among US adults. METHODS: We drew data from 2 surveys conducted in 2010: a national online study (n = 2649) and the Legacy Longitudinal Smoker Cohort (n = 3658). We used multivariable models to examine e-cigarette awareness, use, and harm perceptions.

RESULTS: In the online survey, 40.2% (95% confidence interval [CI] = 37.3, 43.1) had heard of e-cigarettes, with awareness highest among current smokers. Utilization was higher among current smokers (11.4%; 95% CI = 9.3, 14.0) than in the total population (3.4%; 95% CI = 2.6, 4.2), with 2.0% (95% CI = 1.0, 3.8) of former smokers and 0.8% (95% CI = 0.35, 1.7) of never-smokers ever using e-cigarettes. In both surveys, non-Hispanic Whites, current smokers, young adults, and those with at least a high-school diploma were most likely to perceive e-cigarettes as less harmful than regular cigarettes. CONCLUSIONS: Awareness of e-cigarettes is high, and use among current and former smokers is evident. We recommend product regulation and careful surveillance to monitor public health impact and emerging utilization patterns, and to ascertain why, how, and under what conditions e-cigarettes are being used.


We used multivariate logistic regressions to analyze data from the 2006 to 2007 Tobacco Use Supplement of the Current Population Survey, a nationally representative sample of adults. We explored use of cigarette price minimization strategies, such as purchasing cartons of cigarettes, purchasing in states with lower after-tax cigarette prices, and purchasing on the Internet. Racial/ethnic minorities and persons with low socioeconomic status used these strategies less frequently at last purchase than did White and high-socioeconomic-status respondents.


OBJECTIVES: We examined the relationship between smoking and work-family conflict among a sample of New England long-term care facility workers. METHODS: To collect data, we conducted in-person, structured interviews with workers in 4 extended-care facilities. RESULTS: There was a strong association between smoking likelihood and work-family conflict. Workers who experienced both stress at home from work issues (i.e., work-to-home conflict) and stress at work from personal issues (i.e., home-to-work conflict) had 3.1 times higher odds of smoking than those who did not experience these types of conflict. Workers who experienced home-to-work conflict had an odds of 2.3 compared with those who did not experience this type of conflict, and workers who experienced work-to-home conflict had an odds of 1.6 compared with workers who did not experience this type of conflict. CONCLUSIONS: The results of this study indicate that there is a robust relationship between work-family conflict and smoking, but that this relationship is dependent upon the total amount of conflict experienced and the direction of the conflict.

BACKGROUND: It is widely acknowledged that adverse lifestyle behaviours in the population now will place an unsustainable burden on health service resources in the future. It has been estimated that the combined cost to the NHS in Wales of overweight and obesity, alcohol and tobacco is in excess of pound540 million. In the current climate of financial austerity, there can be a tendency for the case for prevention efforts to be judged on the basis of their scope for cost savings. This paper was prompted by discussion in Wales about the evidence for the cost savings from prevention and early intervention and a resulting concern that these programmes were thus being evaluated in policy terms using an incorrect metric. Following a review of the literature, this paper contributes to the discussion of the potential role that economics can play in informing decisions in this area. DISCUSSION: This paper argues that whilst studies of the economic burden of diseases provide information about the magnitude of the problem faced, they should not be used as a means of priority setting. Similarly, studies discussing the likelihood of savings as a result of prevention programmes may be distorting the arguments for public health. Prevention spend needs to be considered purposefully, resulting in a strategic commitment to spending. The role of economics in this process is to provide evidence demonstrating that information and support can be provided cost effectively to individuals to change their lifestyles thus avoiding lifestyle related morbidity and mortality. There is growing evidence that prevention programmes represent value for money using the currently accepted techniques and decision making metrics such as those advocated by NICE. SUMMARY: The issue here is not one of arguing that the economic evaluation of prevention and early intervention should be treated differently, although in some instances that may be appropriate, rather it is about making the case for these interventions to be treated and evaluated to the same standard. The difficulty arises when a higher standard of cost saving may be expected from prevention and public health programmes. The paper concludes that it is of vital importance that during times of budget constraints, as currently faced, the public health budgets are not eroded to fund secondary care budget shortfalls, which are more easily identifiable. To do so would diminish any possibility of reducing the future burden faced by the NHS of lifestyle-related illnesses


As of the 2006 census, nearly one fifth of Canada's population was foreign-born. With such a sizeable and fast-growing immigrant population, research in immigrant health in Canada is increasingly important, including research on the smoking behaviours of Canada's immigrants. Research has shown that immigrants are significantly less likely to smoke than non-immigrants, yet differences by immigrant origins have yet to be fully explored. This paper explores smoking prevalence and cessation amongst immigrants in Canada disaggregated by country of birth. Additionally, it examines the impact of neighbourhood level effects on smoking cessation to determine if residential location has an impact on the likelihood of quitting. Results reveal important heterogeneities previously unseen in studies employing aggregate data. While immigrants in general were less likely to smoke than non-immigrants, and are also more likely to quit than non-immigrants, considerable variation exists between immigrant groups defined by origin region or country. Asian immigrants were the least likely to smoke but exhibited the greatest variation between countries of origin. Vietnamese men were found to be the most likely immigrant group to smoke and among the least likely to quit. While neighbourhood disadvantage was negatively associated with quitting smoking, it is not as important as individual socioeconomic characteristics in explaining variations in smoking cessation. The research illustrates the need for disaggregated data to account for the diversity of Canada's immigrant population.
Grippe A


ABSTRACT: BACKGROUND: States’ pandemic influenza plans and school closure statutes are intended to guide state and local officials, but most faced a great deal of uncertainty during the 2009 influenza H1N1 epidemic. Questions remained about whether, when, and for how long to close schools and about which agencies and officials had legal authority over school closures. METHODS: This study began with analysis of states’ school-closure statutes and pandemic influenza plans to identify the variations among them. An agent-based model of one state was used to represent as constants a population's demographics, commuting patterns, work and school attendance, and community mixing patterns while repeated simulations explored the effects of variations in school closure authority, duration, closure thresholds, and reopening criteria. RESULTS: The results show no basis on which to justify statewide rather than school-specific or community-specific authority for school closures. Nor do these simulations offer evidence to require school closures promptly at the earliest stage of an epidemic. More important are criteria based on monitoring of local case incidence and on authority to sustain closure periods sufficiently to achieve epidemic mitigation. CONCLUSIONS: This agent-based simulation suggests several ways to improve statutes and influenza plans. First, school closure should remain available to state and local authorities as an influenza mitigation strategy. Second, influenza plans need not necessarily specify the threshold for school closures but should clearly define provisions for early and ongoing local monitoring. Finally, school closure authority may be exercised at the statewide or local level, so long as decisions are informed by monitoring incidence in local communities and schools.

(2) XUE Y, KRISTIANSEN IS, DE BLASIO BF. Dynamic modelling of costs and health consequences of school closure during an influenza pandemic. BMC Public Health. 2012 Nov. 9, vol. 12, n° 1, p.962

ABSTRACT: BACKGROUND: The purpose of this article is to evaluate the cost-effectiveness of school closure during a potential influenza pandemic and to examine the trade-off between costs and health benefits for school closure involving different target groups and different closure durations. METHODS: We developed two models: a dynamic disease model capturing the spread of influenza and an economic model capturing the costs and benefits of school closure. Decisions were based on quality-adjusted life years gained using incremental cost-effectiveness ratios. The disease model is an age-structured SEIR compartmental model based on the population of Oslo. We studied the costs and benefits of school closure by varying the age targets (kindergarten, primary school, secondary school) and closure durations (1–10 weeks), given pandemics with basic reproductive number of 1.5, 2.0 or 2.5. RESULTS: The cost-effectiveness of school closure varies depending on the target group, duration and whether indirect costs are considered. Using a case fatality rate (CFR) of 0.1-0.2% and with current cost-effectiveness threshold for Norway, closing secondary school is the only cost-effective strategy, when indirect costs are included. The most cost-effective strategies would be closing secondary schools for 8 weeks if R0=1.5, 6 weeks if R0=2.0, and 4 weeks if R0= 2.5. For severe pandemics with case fatality rates of 1-2%, similar to the Spanish flu, or when indirect costs are disregarded, the optimal strategy is closing kindergarten, primary and secondary school for extended periods of time. For a pandemic with 2009 H1N1 characteristics (mild severity and low transmissibility), closing schools would not be cost-effective, regardless of the age target of school children. CONCLUSIONS: School closure...
has moderate impact on the epidemic's scope, but the resulting disruption to society imposes a potentially great cost in terms of lost productivity from parents' work absenteeism.


ABSTRACT: BACKGROUND: Influenza surveillance systems do not allow the identification of the true burden of illness caused by influenza in the community because they are restricted to consulting cases. A study was conducted to estimate the incidence and the burden of self-defined influenza, and to describe healthcare seeking behavior for self-defined influenza during the A(H1N1)2009 pandemic in the French population. METHODS: We conducted a random-based retrospective cross-sectional telephone survey between May 2009 and April 2010 among a random sample of the French population. RESULTS: For the 10 076 people included, 107 episodes of self-defined influenza were reported. The annual incidence of self-defined influenza was estimated at 13 942 cases per 100 000 inhabitants (CI95% 10 947 -- 16 961), 62.1% (CI95% 50.5 -- 72.5) of cases consulted a physician and 11.3% (CI95% 5.5 - 21.7) used a face mask. Following recommendations, 37.5% (CI95% 35.5 -- 39.5) of people in the survey reported washing their hands more often during the pandemic season, and there was a positive association with being vaccinated against A(H1N1)2009 influenza, being a women, being a child (< 15 years) or living in a big city (>= 100 000 inhabitants). CONCLUSIONS: Self-defined influenza causes a significant burden of illness in the French population and is a frequent cause for consultation. These results allow a more accurate interpretation of influenza surveillance data and an opportunity to adapt future health education messages.


ABSTRACT: BACKGROUND: In Germany, annual vaccination against seasonal influenza is recommended for certain target groups (e.g. persons aged [greater than or equal to]60 years, chronically ill persons, healthcare workers (HCW)). In season 2009/10, vaccination against pandemic influenza A(H1N1)pdm09, which was controversially discussed in the public, was recommended for the whole population. The objectives of this study were to assess vaccination coverage for seasonal (seasons 2008/09-2010/11) and pandemic influenza (season 2009/10), to identify predictors of and barriers to pandemic vaccine uptake and whether the controversial discussions on pandemic vaccination has had a negative impact on seasonal influenza vaccine uptake in Germany. METHODS: We analysed data from the 'German Health Update' (GEDA10) telephone survey (n=22,050) and a smaller GEDA10-follow-up survey (n=2,493), which were both representative of the general population aged [greater than or equal to]18 years living in Germany. RESULTS: Overall only 8.8% of the adult population in Germany received a vaccination against pandemic influenza. High socioeconomic status, having received a seasonal influenza shot in the previous season, and belonging to a target group for seasonal influenza vaccination were independently associated with the uptake of pandemic vaccines. The main reasons for not receiving a pandemic vaccination were 'fear of side effects' and the opinion that 'vaccination was not necessary'. Seasonal influenza vaccine uptake in the pre-pandemic season 2008/09 was 52.8% among persons aged [greater than or equal to]60 years; 30.5% among HCW, and 43.3% among chronically ill persons. A decrease in vaccination coverage was observed across all target groups in the first post-pandemic season 2010/11 (50.6%, 25.8%, and 41.0% vaccination coverage, respectively). CONCLUSIONS: Seasonal influenza vaccination coverage in Germany remains in all target groups below 75%, which is a declared goal of the European Union. Our results suggest that controversial public discussions about safety and the benefits of pandemic influenza vaccination may have contributed to both a very low uptake of pandemic vaccines and a
decreased uptake of seasonal influenza vaccines in the first post-pandemic season. In the upcoming years, the uptake of seasonal influenza vaccines should be carefully monitored in all target groups to identify if this trend continues and to guide public health authorities in developing more effective vaccination and communication strategies for seasonal influenza vaccination.


ABSTRACT: BACKGROUND: Although an increasing number of studies are documenting uses of syndromic surveillance by front line public health, few detail the value added from linking syndromic data to public health decision-making. This study seeks to understand how syndromic data informed specific public health actions during the 2009 H1N1 pandemic. METHODS: Semi-structured telephone interviews were conducted with participants from Ontario’s public health departments, the provincial ministry of health and federal public health agency to gather information about syndromic surveillance systems used and the role of syndromic data in informing specific public health actions taken during the pandemic. Responses were compared with how the same decisions were made by non-syndromic surveillance users. RESULTS: Findings from 56 interviews (82% response) show that syndromic data was most used for monitoring virus activity, measuring impact on the health care system and informing the opening of influenza assessment centres in several jurisdictions, and supporting communications and messaging, rather than its intended purpose of early outbreak detection. Syndromic data had limited impact on decisions that involved the operation of immunization clinics, school closures, sending information letters home with school children or providing recommendations to health care providers. Both syndromic surveillance users and non-users reported that guidance from the provincial ministry of health, communications with stakeholders and vaccine availability were driving factors in these public health decisions. CONCLUSIONS: Syndromic surveillance had limited use in decision-making during the 2009 H1N1 pandemic in Ontario. This study provides insights into the reasons why this occurred. Despite this, syndromic data were valued for providing situational awareness and confidence to support public communications and recommendations. Developing an understanding of how syndromic data is utilized during public health events provides valuable evidence to support future investments in public health surveillance.


Immune recognition of protein antigens relies on the combined interaction of multiple antibody loops, which provide a fairly large footprint and constrain the size and shape of protein surfaces that can be targeted. Single protein loops can mediate extremely high-affinity binding, but it is unclear whether such a mechanism is available to antibodies. Here we report the isolation and characterization of an antibody called C05, which neutralizes strains from multiple subtypes of influenza A virus, including H1, H2 and H3. X-ray and electron microscopy structures show that C05 recognizes conserved elements of the receptor-binding site on the haemagglutinin surface glycoprotein. Recognition of the haemagglutinin receptor-binding site is dominated by a single heavy-chain complementarity-determining region 3 loop, with minor contacts from heavy-chain complementarity-determining region 1, and is sufficient to achieve nanomolar binding with a minimal footprint. Thus, binding predominantly with a single loop can allow antibodies to target small, conserved functional sites on otherwise hypervariable antigens.

(7) SAVOIA E, TESTA MA, VISWANATH K. Predictors of knowledge of H1N1 infection and transmission in the U.S. population. BMC Public Health. 2012, vol. 12, p.328
BACKGROUND: The strength of a society’s response to a public health emergency depends partly on meeting the needs of all segments of the population, especially those who are most vulnerable and subject to greatest adversity. Since the early stages of the H1N1 pandemic, public communication of H1N1 information has been recognized as a challenging issue. Public communication is considered a critical public health task to mitigating adverse population health outcomes before, during, and after public health emergencies. To investigate knowledge and knowledge gaps in the general population regarding the H1N1 pandemic, and to identify the social determinants associated with those gaps, we conducted a survey in March 2010 using a representative random sample of U.S. households. METHODS: Data were gathered from 1,569 respondents (66.3% response rate) and analyzed using ordered logistic regression to study the impact of socioeconomic factors and demographic characteristics on the individual’s knowledge concerning H1N1 infection and transmission. RESULTS: Results suggest that level of education and home ownership, reliable indicators of socioeconomic position (SEP), were associated with knowledge of H1N1. Level of education was found to be directly associated with level of knowledge about virus transmission [OR = 1.35, 95% C.I. 1.12-1.63]. Home ownership versus renting was also positively associated with knowledge on the signs and symptoms of H1N1 infection in particular [OR = 2.89, 95% C.I. 1.26-6.66]. CONCLUSIONS: Policymakers and public health practitioners should take specific SEP factors into consideration when implementing educational and preventive interventions promoting the health and preparedness of the population, and when designing communication campaigns during a public health emergency.


Maladie d’Alzheimer


rate of relapse was higher in the group that received placebo than in the groups that received risperidone (60% [24 of 40 patients in group 3] vs. 33% [23 of 70 in groups 1 and 2]; P=0.004; hazard ratio with placebo, 1.94; 95% confidence interval [CI], 1.09 to 3.45; P=0.02). During the next 16 weeks, the rate of relapse was higher in the group that was switched from risperidone to placebo than in the group that continued to receive risperidone (48% [13 of 27 patients in group 2] vs. 15% [2 of 13 in group 1]; P=0.02; hazard ratio, 4.88; 95% CI, 1.08 to 21.98; P=0.02). The rates of adverse events and death after randomization did not differ significantly among the groups, although comparisons were based on small numbers of patients, especially during the final 16 weeks. CONCLUSIONS: In patients with Alzheimer's disease who had psychosis or agitation that had responded to risperidone therapy for 4 to 8 months, discontinuation of risperidone was associated with an increased risk of relapse. (Funded by the National Institutes of Health and others; ClinicalTrials.gov number, NCT00417482.)

Maladies cardio-vasculaires


(2) LAUER MS. Time for a creative transformation of epidemiology in the United States. JAMA. 2012 Nov. 7, vol. 308, n° 17, pp.1804-1805


CONTEXT: The relationship of platelet function testing measurements with outcomes in patients with acute coronary syndromes (ACS) initially managed medically without revascularization is unknown. OBJECTIVE: To characterize the differences and evaluate clinical outcomes associated with platelet reactivity among patients with ACS treated with clopidogrel or prasugrel. DESIGN, SETTING, AND PATIENTS: Patients with medically managed unstable angina or non-ST-segment elevation myocardial infarction were enrolled in the TRILOGY ACS trial (2008 to 2011) comparing clopidogrel vs prasugrel. Of 9326 participants, 27.5% were included in a platelet function substudy: 1286 treated with prasugrel and 1278 treated with clopidogrel. INTERVENTIONS: Aspirin with either prasugrel (10 or 5 mg/d) or clopidogrel (75 mg/d); those 75 years or older and younger than 75 years but who weighed less than 60 kg received a 5-mg prasugrel maintenance dose. MAIN OUTCOME MEASURES: Platelet reactivity, measured in P2Y12 reaction units (PRUs), was performed at baseline, at 2 hours, and at 1, 3, 6, 12, 18, 24, and 30 months after randomization. The primary efficacy end point was a composite of
cardiovascular death, myocardial infarction, or stroke through 30 months. RESULTS: Among participants younger than 75 years and weighing 60 kg or more, the median PRU values at 30 days were 64 (interquartile range [IQR], 33-128) in the prasugrel group vs 200 (IQR, 141-260) in the clopidogrel group (P < .001), a difference that persisted through all subsequent time points. For participants younger than 75 years and weighing less than 60 kg, the median 30-day PRU values were 139 (IQR, 86-203) for the prasugrel group vs 209 (IQR, 148-283) for the clopidogrel group (P < .001), and for participants 75 years or older, the median PRU values were 164 (IQR, 105-216) for the prasugrel group vs 222 (IQR, 148-268) for the clopidogrel group (P < .001). At 30 months the rate of the primary efficacy end point was 17.2% (160 events) in the prasugrel group vs 18.9% (180 events) in the clopidogrel group (P = .29). There were no significant differences in the continuous distributions of 30-day PRU values for participants with a primary efficacy end point event after 30 days (n = 214) compared with participants without an event (n = 1794; P = .07) and no significant relationship between the occurrence of the primary efficacy end point and continuous PRU values (adjusted hazard ratio [HR] for increase of 60 PRUs, 1.03; 95% CI, 0.96-1.11; P = .44). Similar findings were observed with 30-day PRU cut points used to define high on-treatment platelet reactivity-PRU more than 208 (adjusted HR, 1.16; 95% CI, 0.89-1.52, P = .28) and PRU more than 230 (adjusted HR, 1.20; 95% CI, 0.90-1.61; P = .21). CONCLUSIONS: Among patients with ACS without ST-segment elevation and initially managed without revascularization, prasugrel was associated with lower platelet reactivity than clopidogrel, irrespective of age, weight, and dose. Among those in the platelet substudy, no significant differences existed between prasugrel vs clopidogrel in the occurrence of the primary efficacy end point through 30 months and no significant association existed between platelet reactivity and occurrence of ischemic outcomes. TRIAL REGISTRATION: clinicaltrials.gov Identifier: NCT00699998

http://www.ncbi.nlm.nih.gov/pubmed/23117778

CONTEXT: Major cardiovascular diseases (CVDs) are leading causes of mortality among US Hispanic and Latino individuals. Comprehensive data are limited regarding the prevalence of CVD risk factors in this population and relations of these traits to socioeconomic status (SES) and acculturation. OBJECTIVES: To describe prevalence of major CVD risk factors and CVD (coronary heart disease [CHD] and stroke) among US Hispanic/Latino individuals of different backgrounds, examine relationships of SES and acculturation with CVD risk profiles and CVD, and assess cross-sectional associations of CVD risk factors with CVD. DESIGN, SETTING, AND PARTICIPANTS: Multicenter, prospective, population-based Hispanic Community Health Study/Study of Latinos including individuals of Cuban (n = 2201), Dominican (n = 1400), Mexican (n = 6232), Puerto Rican (n = 2590), Central American (n = 1634), and South American backgrounds (n = 1022) aged 18 to 74 years. Analyses involved 15,079 participants with complete data enrolled between March 2008 and June 2011. MAIN OUTCOME MEASURES: Adverse CVD risk factors defined using national guidelines for hypercholesterolemia, hypertension, obesity, diabetes, and smoking. Prevalence of CHD and stroke were ascertained from self-reported data. RESULTS: Age-standardized prevalence of CVD risk factors varied by Hispanic/Latino background; obesity and current smoking rates were highest among Puerto Rican participants (for men, 40.9% and 34.7%; for women, 51.4% and 31.7%, respectively); hypercholesterolemia prevalence was highest among Central American men (54.9%) and Puerto Rican women (41.0%). Large proportions of participants (80% of men, 71% of women) had at least 1 risk factor. Age- and sex-adjusted prevalence of 3 or more risk factors was highest in Puerto Rican participants (25.0%) and significantly higher (P < .001) among participants with less education (16.1%), those who were US-born (18.5%), those who had lived in the United States 10 years or longer (15.7%), and those who preferred English (17.9%). Overall, self-reported CHD and stroke prevalence were low (4.2% and 2.0% in men; 2.4% and 1.2% in women, respectively). In multivariate-adjusted
models, hypertension and smoking were directly associated with CHD in both sexes as were hypercholesterolemia and obesity in women and diabetes in men (odds ratios [ORs], 1.5-2.2). For stroke, associations were positive with hypertension in both sexes, diabetes in men, and smoking in women (ORs, 1.7-2.6). CONCLUSION: Among US Hispanic/Latino adults of diverse backgrounds, a sizeable proportion of men and women had adverse major risk factors; prevalence of adverse CVD risk profiles was higher among participants with Puerto Rican background, lower SES, and higher levels of acculturation.


CONTEXT: It is unknown whether long-standing disparities in incidence of coronary heart disease (CHD) among US blacks and whites persist. OBJECTIVE: To examine incident CHD by black and white race and by sex. DESIGN, SETTING, AND PARTICIPANTS: Prospective cohort study of 24,443 participants without CHD at baseline from the Reasons for Geographic and Racial Differences in Stroke (REGARDS) cohort, who resided in the continental United States and were enrolled between 2003 and 2007 with follow-up through December 31, 2009. MAIN OUTCOME MEASURE: Expert-adjudicated total (fatal and nonfatal) CHD, fatal CHD, and nonfatal CHD (definite or probable myocardial infarction [MI]; very small non-ST-elevation MI [NSTEMI] had peak troponin level <0.5 mug/L). RESULTS: Over a mean (SD) of 4.2 (1.5) years of follow-up, 659 incident CHD events occurred (153 in black men, 138 in black women, 254 in white men, and 114 in white women). Among men, the age-standardized incidence rate per 1000 person-years for total CHD was 9.0 (95% CI, 7.5-10.8) for blacks vs 8.1 (95% CI, 6.9-9.4) for whites; fatal CHD: 4.0 (95% CI, 2.9-5.3) vs 1.9 (95% CI, 1.4-2.6), respectively; and nonfatal CHD: 4.9 (95% CI, 3.8-6.2) vs 6.2 (95% CI, 5.2-7.4). Among women, the age-standardized incidence rate per 1000 person-years for total CHD was 5.0 (95% CI, 4.2-6.1) for blacks vs 3.4 (95% CI, 2.8-4.2) for whites; fatal CHD: 2.0 (95% CI, 1.5-2.7) vs 1.0 (95% CI, 0.7-1.5), respectively; and nonfatal CHD: 2.8 (95% CI, 2.2-3.7) vs 2.2 (95% CI, 1.7-2.9). Age- and region-adjusted hazard ratios for fatal CHD among blacks vs whites was near 2.0 for both men and women and became statistically nonsignificant after multivariable adjustment. The multivariable-adjusted hazard ratio for incident nonfatal CHD for blacks vs whites was 0.68 (95% CI, 0.51-0.91) for men and 0.81 (95% CI, 0.58-1.15) for women. Of the 444 nonfatal CHD events, 139 participants (31.3%) had very small NSTEMIs. CONCLUSIONS: The higher risk of fatal CHD among blacks compared with whites was associated with cardiovascular disease risk factor burden. These relationships may differ by sex.


CONTEXT: Prophylactic corticosteroids are often administered during cardiac surgery to attenuate the inflammatory response to cardiopulmonary bypass and surgical trauma; however, evidence that routine corticosteroid use can prevent major adverse events is lacking. OBJECTIVE: To quantify the effect of intraoperative high-dose dexamethasone on the incidence of major adverse events in patients undergoing cardiac surgery. DESIGN, SETTING, AND PARTICIPANTS: A multicenter, randomized, double-blind, placebo-controlled trial of 4494 patients aged 18 years or older undergoing cardiac surgery with cardiopulmonary bypass at 8 cardiac surgical centers in The Netherlands enrolled between April 13, 2006, and November 23, 2011. INTERVENTION: Patients were randomly assigned to receive a single intraoperative dose of 1 mg/kg dexamethasone (n = 2239) or placebo (n = 2255). MAIN OUTCOME MEASURES: A composite of death, myocardial infarction, stroke, renal failure, or respiratory failure, within 30 days of randomization. RESULTS: Of the 4494 patients who underwent randomization, 4482 (99.7%) could be evaluated for the primary outcome. A total of 157 patients (7.0%) in the
dexamethasone group and 191 patients (8.5%) in the placebo group reached the primary study end point (relative risk, 0.83; 95% CI, 0.67-1.01; absolute risk reduction, -1.5%; 95% CI, -3.0% to 0.1%; P = .07). Dexamethasone was associated with reductions in postoperative infection, duration of postoperative mechanical ventilation, and lengths of intensive care unit and hospital stays. In contrast, dexamethasone was associated with higher postoperative glucose levels.

CONCLUSION: In our trial of adults undergoing cardiac surgery, the use of intraoperative dexamethasone did not reduce the 30-day incidence of major adverse events compared with placebo.

TRIAL REGISTRATION: clinicaltrials.gov Identifier: NCT00293592

JAMA. 2012 Nov. 7, vol. 308, n° 17, pp.1751-1760

CONTEXT: Although multivitamins are used to prevent vitamin and mineral deficiency, there is a perception that multivitamins may prevent cardiovascular disease (CVD). Observational studies have shown inconsistent associations between regular multivitamin use and CVD, with no long-term clinical trials of multivitamin use. OBJECTIVE: To determine whether long-term multivitamin supplementation decreases the risk of major cardiovascular events among men. DESIGN, SETTING, AND PARTICIPANTS: The Physicians' Health Study II, a randomized, double-blind, placebo-controlled trial of a common daily multivitamin, began in 1997 with continued treatment and follow-up through June 1, 2011. A total of 14,641 male US physicians initially aged 50 years or older (mean, 64.3 [SD, 9.2] years), including 754 men with a history of CVD at randomization, were enrolled. INTERVENTION: Daily multivitamin or placebo. MAIN OUTCOME MEASURES: Composite end point of major cardiovascular events, including nonfatal myocardial infarction (MI), nonfatal stroke, and CVD mortality. Secondary outcomes included MI and stroke individually.

RESULTS: During a median follow-up of 11.2 (interquartile range, 10.7-13.3) years, there were 1732 confirmed major cardiovascular events. Compared with placebo, there was no significant effect of a daily multivitamin on major cardiovascular events (11.0 and 10.8 events per 1000 person-years for multivitamin vs placebo, respectively; hazard ratio [HR], 1.01; 95% CI, 0.91-1.10; P = .91). Further, a daily multivitamin had no effect on total MI (3.9 and 4.2 events per 1000 person-years; HR, 0.93; 95% CI, 0.80-1.09; P = .39), total stroke (4.1 and 3.9 events per 1000 person-years; HR, 1.06; 95% CI, 0.91-1.23; P = .48), or CVD mortality (5.0 and 5.1 events per 1000 person-years; HR, 0.95; 95% CI, 0.83-1.09; P = .47). A daily multivitamin was also not significantly associated with total mortality (HR, 0.94; 95% CI, 0.88-1.02; P = .13). The effect of a daily multivitamin on major cardiovascular events did not differ between men with or without a baseline history of CVD (P = .62 for interaction). CONCLUSION: Among this population of US male physicians, taking a daily multivitamin did not reduce major cardiovascular events, MI, stroke, and CVD mortality after more than a decade of treatment and follow-up. TRIAL REGISTRATION: clinicaltrials.gov Identifier: NCT00270647

(9) LINEAWEAVER W. Vein-graft harvesting technique in coronary artery bypass graft surgery.
JAMA. 2012 Nov. 7, vol. 308, n° 17, pp.1739-1740

(10) MITKA M. New anticoagulants offer options beyond warfarin to reduce stroke risk.
JAMA. 2012 Nov. 7, vol. 308, n° 17, pp.1727-1728

(11) DURAES AR, BRITO JC. Images in clinical medicine. Selective intraarterial thrombolysis for cardioembolic stroke.


BACKGROUND: Published work assessing psychosocial stress (job strain) as a risk factor for coronary heart disease is inconsistent and subject to publication bias and reverse causation bias. We analysed the relation between job strain and coronary heart disease with a meta-analysis of published and unpublished studies. METHODS: We used individual records from 13 European
cohort studies (1985-2006) of men and women without coronary heart disease who were employed at time of baseline assessment. We measured job strain with questions from validated job-content and demand-control questionnaires. We extracted data in two stages such that acquisition and harmonisation of job strain measure and covariables occurred before linkage to records for coronary heart disease. We defined incident coronary heart disease as the first non-fatal myocardial infarction or coronary death. FINDINGS: 30,214 (15%) of 197,473 participants reported job strain. In 1.49 million person-years at risk (mean follow-up 7.5 years [SD 1.7]), we recorded 2358 events of incident coronary heart disease. After adjustment for sex and age, the hazard ratio for job strain versus no job strain was 1.23 (95% CI 1.10-1.37). This effect estimate was higher in published (1.43, 1.15-1.77) than unpublished (1.16, 1.02-1.32) studies. Hazard ratios were likewise raised in analyses addressing reverse causality by exclusion of events of coronary heart disease that occurred in the first 3 years (1.31, 1.15-1.48) and 5 years (1.30, 1.13-1.50) of follow-up. We noted an association between job strain and coronary heart disease for sex, age groups, socioeconomic strata, and region, and after adjustments for socioeconomic status, and lifestyle and conventional risk factors. The population attributable risk for job strain was 3.4%. INTERPRETATION: Our findings suggest that prevention of workplace stress might decrease disease incidence; however, this strategy would have a much smaller effect than would tackling of standard risk factors, such as smoking. FUNDING: Finnish Work Environment Fund, the Academy of Finland, the Swedish Research Council for Working Life and Social Research, the German Social Accident Insurance, the Danish National Research Centre for the Working Environment, the BUPA Foundation, the Ministry of Social Affairs and Employment, the Medical Research Council, the Wellcome Trust, and the US National Institutes of Health


OBJECTIVE: To estimate the relative risks of death, myocardial infarction, stroke, and renal failure or dysfunction between antifibrinolytics and no treatment following the suspension of aprotinin from the market in 2008 for safety reasons and its recent reintroduction in Europe and Canada. DESIGN: Systematic review and network meta-analysis. DATA SOURCES: A Cochrane review of antifibrinolytic treatments was chosen as the starting point for this systematic review. Medline, Embase, and the Cochrane register of trials were searched with no date restrictions for observational evidence. STUDY SELECTION: Propensity matched or adjusted observational studies with two or more of the interventions of interest (aprotinin, tranexamic acid, epsilon-aminocaproic acid, and no treatment) that were carried out in patients undergoing cardiac surgery. DATA ANALYSIS: Network meta-analysis was used to compare treatments, and odds ratios with 95% credible intervals were estimated. Meta-analyses were carried out for randomised controlled trials alone and for randomised controlled trials with observational studies. RESULTS: 106 randomised controlled trials and 11 observational studies (43,270 patients) were included. Based on the results from analysis of randomised controlled trials, tranexamic acid was associated on average with a reduced risk of death compared with aprotinin (odds ratio 0.64, 95% credible interval 0.41 to 0.99). When observational data were incorporated, comparisons showed an increased risk of mortality with aprotinin on average relative to tranexamic acid (odds ratio 0.71, 95% credible interval 0.50 to 0.98) and epsilon-aminocaproic acid (0.60, 0.43 to 0.87), and an increased risk of renal failure or dysfunction on average relative to all comparators: odds ratio 0.66 (95% credible interval 0.45 to 0.88) compared with no treatment, 0.66 (0.48 to 0.91) versus tranexamic acid, and 0.65 (0.45 to 0.88) versus epsilon-aminocaproic acid. CONCLUSION: Although meta-analyses of randomised controlled trials were largely inconclusive, inclusion of
observational data suggest concerns remain about the safety of aprotinin. Tranexamic and epsilon-aminocaproic acid are effective alternatives that may be safer for patients

(24) METEYARD L. Trial shows only that practice varies. BMJ. 2012, vol. 345, p.e6022


(26) ENDERBY P. Caution is needed in extrapolating results of randomised controlled trial. BMJ. 2012, vol. 345, p.e6014


BACKGROUND: We sought to compare the long-term safety of two devices with different antiproliferative properties: the Endeavor zotarolimus-eluting stent (E-ZES; Medtronic, Inc) and the Cypher sirolimus-eluting stent (C-SES; Cordis, Johnson & Johnson) in a broad group of patients and lesions. METHODS: Between May 21, 2007 and Dec 22, 2008, we recruited 8791 patients from 36 recruiting countries to participate in this open-label, multicentre, randomised, superiority trial. Eligible patients were those aged 18 years or older undergoing elective, unplanned, or emergency procedures in native coronary arteries. Patients were randomly assigned to either receive E-ZES and C-SES (ratio 1:1). Randomisation was stratified per centre with varying block sizes of four, six, or eight patients, and concealed with a central telephone-based or web-based allocation service. The primary outcome was definite or probable stent thrombosis at 3 years and was analysed by intention to treat. Patients and investigators were aware of treatment assignment. This trial is registered with ClinicalTrials.gov, number NCT00476957. FINDINGS: PROTECT randomised 8791 patients, of whom 8709 provided consent to participate and were eligible: 4357 were allocated to the E-ZES group and 4352 patients to the C-SES group. At 3 years, rates of definite or probable stent thrombosis did not differ between groups (1.4% for E-ZES [predicted: 1.5%] vs 1.8% [predicted: 2.5%] for C-SES; hazard ratio [HR] 0.81, 95% CI 0.58-1.14, p=0.22). Dual antiplatelet therapy was used in 8402 (96%) patients at discharge, 7456 (88%) at 1 year, 3041 (37%) at 2 years, and 2364 (30%) at 3 years. INTERPRETATION: No evidence of superiority of E-ZES compared with C-SES in definite or probable stent thrombosis rates was noted at 3 years. Time analysis suggests a difference in definite or probable stent thrombosis between groups is emerging over time, and a longer follow-up is therefore needed given the clinical relevance of stent thrombosis. FUNDING: Medtronic, Inc

BACKGROUND: Vorapaxar inhibits platelet activation by antagonising thrombin-mediated activation of the protease-activated receptor 1 on human platelets. The effect of adding other antiplatelet drugs to aspirin for long-term secondary prevention of thrombotic events in stable patients with previous myocardial infarction is uncertain. We tested this effect in a subgroup of patients from the Thrombin Receptor Antagonist in Secondary Prevention of Atherothrombotic Ischemic Events (TRA 2 degrees P)-TIMI 50 trial. METHODS: In TRA 2 degrees P-TIMI 50--a randomised, placebo-controlled, parallel trial--we randomly assigned patients with a history of atherothrombosis to receive vorapaxar (2.5 mg daily) or matching placebo in a 1:1 ratio. Patients, and those giving treatment, assessing outcomes, and analysing results were masked to treatment allocation. Patients with a qualifying myocardial infarction within the previous 2 weeks to 12 months were analysed as a pre-defined subgroup. The primary efficacy endpoint was cardiovascular death, myocardial infarction, or stroke, analysed by intention to treat. We analysed events by Kaplan-Meier analysis and compared groups with a Cox proportional hazard model. TRA 2 degrees P-TIMI 50 is registered at ClinicalTrials.gov (NCT00526474). FINDINGS: 17,779 of 26,449 patients had a qualifying myocardial infarction and were assigned treatment (8898 to vorapaxar and 8881 to placebo). Median follow-up was 2.5 years (IQR 2.0-2.9). Cardiovascular death, myocardial infarction, or stroke occurred in 610 of 8898 patients in the vorapaxar group and 750 of 8881 in the placebo group (3-year Kaplan-Meier estimates 8.1% vs 9.7%, HR 0.80, 95% CI 0.72-0.89; p<0.0001). Moderate or severe bleeding was more common in the vorapaxar group versus the placebo group (241/8880 [3.4%, 3-year Kaplan-Meier estimate] vs 151/8849 [1.7%, 3-year Kaplan-Meier estimate], HR 1.61, 95% CI 1.31-1.97; p<0.0001). Intracranial haemorrhage occurred in 43 of 8880 patients (0.6%, 3-year Kaplan-Meier estimate) with vorapaxar versus 28 of 8849 (0.4%, 3-year Kaplan-Meier estimate) with placebo (p=0.076). Other serious adverse events were equally distributed between groups. INTERPRETATION: For patients with a history of myocardial infarction, inhibition of protease-activated receptor 1 with vorapaxar reduces the risk of cardiovascular death or ischaemic events when added to standard antiplatelet treatment, including aspirin, and increases the risk of moderate or severe bleeding. FUNDING: Merck

(30) MAYOR S. Services with excessive delays in delivering carotid endarterectomy should close, recommends audit. BMJ. 2012, vol. 345, p.e5641

all others, though there were limited usable data for the zotarolimus eluting Resolute stent in patients with diabetes. Moreover, there was no increased risk of any safety outcome (including very late stent thrombosis) with any drug eluting stents compared with bare metal stents. There was about a 62% probability that the everolimus eluting stent was the safest stent for the outcome of "any" stent thrombosis. CONCLUSIONS: Among patients with diabetes treated with coronary stents all currently available drug eluting stents were efficacious without compromising safety compared with bare metal stents. There were relative differences among the drug eluting stents, such that the everolimus eluting stent was the most efficacious and safe.


BACKGROUND: Socioeconomic status (SES) is an important determinant of population health. Explanatory approaches on how SES determines health have so far included numerous factors, amongst them psychosocial factors such as social relationships. However, it is unclear whether social relationships can help explain socioeconomic differences in general subjective health. Do different aspects of social relationships contribute differently to the explanation? Based on a cohort study of middle and older aged residents (45 to 75 years) from the Ruhr Area in Germany our study tries to clarify the matter. METHODS: For the analyses data from the population-based prospective Heinz Nixdorf Recall (HNR) Study is used. As indicators of SES education, equivalent household income and occupational status were employed. Social relations were assessed by including structural as well as functional aspects. Structural aspects were estimated by the Social Integration Index (SII) and functional aspects were measured by availability of emotional and instrumental support. Data on general subjective health status was available for both baseline examination (2000-2003) and a 5-year follow-up (2006-2008). The sample consists of 4,146 men and women. Four logistic regression models were calculated: in the first model we controlled for age and subjective health at baseline, while in models 2 and 3, either functional or structural aspects of social relationships were introduced separately. Model 4 then included all variables. As former studies indicated different health effects of SES and social relations in men and women, analyses were conducted with the overall sample as well as for each gender alone. RESULTS: Prospective associations of SES and subjective health were reduced after introducing social relationships into the regression models. Percentage reductions between 2% and 30% were observed in the overall sample when all aspects of social relations were included. The percentage reductions were strongest in the lowest SES group. Gender specific analyses revealed mediating effects of social relationships in women and men. The magnitude of mediating effects varied depending on the indicators of SES and social relations. CONCLUSIONS: Social relationships substantially contribute to the explanation of SES differences in subjective health. Interventions for improving social relations which especially focus on socially deprived groups are likely to help reducing socioeconomic disparities in health.


This study examined the association between social network type and engagement in physical activity, alcohol abuse and use of complementary and alternative medicine by older Americans. Data from the National Social Life, Health & Aging Project were employed. Multivariate logistic regressions conducted separately for each health behavior showed that older people embedded in less resourceful network types were at greater risk for alcohol abuse, physical inactivity and less use of complementary and alternative medicine, net of the effects of sociodemographic characteristics, health, and the quality of the social relationships. The study underscores the importance of the construct of social network type for understanding healthy lifestyle in late life.


Malaria causes approximately one million fatalities per year, mostly among African children. Although highlighted by the strong protective effect of the sickle-cell trait, the full impact of human genetics on resistance to the disease remains largely unexplored. Genome-wide association (GWA) studies are designed to unravel relevant genetic variants comprehensively; however, in malaria, as in other infectious diseases, these studies have been only partly successful. Here we identify two previously unknown loci associated with severe falciparum malaria in patients and controls from Ghana, West Africa. We applied the GWA approach to the diverse clinical syndromes of severe falciparum malaria, thereby targeting human genetic variants influencing any
step in the complex pathogenesis of the disease. One of the loci was identified on chromosome 1q32 within the ATP2B4 gene, which encodes the main calcium pump of erythrocytes, the host cells of the pathogenic stage of malaria parasites. The second was indicated by an intergenic single nucleotide polymorphism on chromosome 16q22.2, possibly linked to a neighbouring gene encoding the tight-junction protein MARVELD3. The protein is expressed on endothelial cells and might therefore have a role in microvascular damage caused by endothelial adherence of parasitized erythrocytes. We also confirmed previous reports on protective effects of the sickle-cell trait and blood group O. Our findings underline the potential of the GWA approach to provide candidates for the development of control measures against infectious diseases in humans


We present what we believe is the first empirical research that accounts for subnational government capacity in estimating malaria incidence. After controlling for relevant extrinsic factors, we find evidence of a negative effect of state government capacity on reported malaria cases in Indian states over the period 1993-2002. Government capacity is more successful in predicting malaria incidence than potentially more direct indicators such as state public health expenditures and economic development levels. We find that high government capacity can moderate the deleterious health effects of malaria in rice producing regions. Our research also suggests that government capacity may have exacerbated the effectiveness of the World Bank Malaria Control Project in India over the period studied. We conclude by proposing the integration of government capacity measures into existing planning efforts, including vulnerability mapping tools and disease surveillance efforts


BACKGROUND: Both treatment and prevention strategies are recommended by the World Health Organization for the control of malaria during pregnancy in tropical areas. The aim of this study was to assess use of a rapid diagnostic test for prompt management of malaria in pregnancy in Bangui, Central African Republic. METHODS: A cohort of 76 pregnant women was screened systematically for malaria with ParacheckPf(R) at each antenatal visit. The usefulness of the method was analysed by comparing the number of malaria episodes requiring treatment in the cohort with the number of prescriptions received by another group of pregnant women followed-up in routine antenatal care. RESULTS: In the cohort group, the proportion of positive ParacheckPf(R) episodes during antenatal clinics visits was 13.8%, while episodes of antimalarial prescriptions in the group which was followed-up routinely by antenatal personnel was estimated at 26.3%. Hence, the relative risk of the cohort for being prescribed an antimalarial drug was 0.53. Therefore, the attributable fraction of presumptive treatment avoided by systematic screening with ParacheckPf(R) was 47%. CONCLUSIONS: Use of a rapid diagnostic test is useful, affordable and easy for adequate treatment of malaria in pregnant women. More powerful studies of the usefulness of introducing the test into antenatal care are needed in all health centres in the country and in other tropical areas
Pathologies liées à l’obésité

http://www.ncbi.nlm.nih.gov/pubmed/23117778

CONTEXT: Major cardiovascular diseases (CVDs) are leading causes of mortality among US Hispanic and Latino individuals. Comprehensive data are limited regarding the prevalence of CVD risk factors in this population and relations of these traits to socioeconomic status (SES) and acculturation. OBJECTIVES: To describe prevalence of major CVD risk factors and CVD (coronary heart disease [CHD] and stroke) among US Hispanic/Latino individuals of different backgrounds, examine relationships of SES and acculturation with CVD risk profiles and CVD, and assess cross-sectional associations of CVD risk factors with CVD. DESIGN, SETTING, AND PARTICIPANTS: Multicenter, prospective, population-based Hispanic Community Health Study/Study of Latinos including individuals of Cuban (n = 2201), Dominican (n = 1400), Mexican (n = 823), Puerto Rican (n = 2590), Central American (n = 1634), and South American backgrounds (n = 1022) aged 18 to 74 years. Analyses involved 15,079 participants with complete data enrolled between March 2008 and June 2011. MAIN OUTCOME MEASURES: Adverse CVD risk factors defined using national guidelines for hypercholesterolemia, hypertension, obesity, diabetes, and smoking. Prevalence of CHD and stroke were ascertained from self-reported data. RESULTS: Age-standardized prevalence of CVD risk factors varied by Hispanic/Latino background; obesity and current smoking rates were highest among Puerto Rican participants (for men, 40.9% and 34.7%; for women, 51.4% and 31.7%, respectively); hypercholesterolemia prevalence was highest among Central American men (54.9%) and Puerto Rican women (41.0%). Large proportions of participants (80% of men, 71% of women) had at least 1 risk factor. Age- and sex-adjusted prevalence of 3 or more risk factors was highest in Puerto Rican participants (25.0%) and significantly higher (P < .001) among participants with less education (16.1%), those who were US-born (18.5%), those who had lived in the United States 10 years or longer (15.7%), and those who preferred English (17.9%). Overall, self-reported CHD and stroke prevalence were low (4.2% and 2.0% in men; 2.4% and 1.2% in women, respectively). In multivariate-adjusted models, hypertension and smoking were directly associated with CHD in both sexes as were hypercholesterolemia and obesity in women and diabetes in men (odds ratios [ORs], 1.5-2.2). For stroke, associations were positive with hypertension in both sexes, diabetes in men, and smoking in women (ORs, 1.7-2.6). CONCLUSION: Among US Hispanic/Latino adults of diverse backgrounds, a sizeable proportion of men and women had adverse major risk factors; prevalence of adverse CVD risk profiles was higher among participants with Puerto Rican background, lower SES, and higher levels of acculturation.


BACKGROUND: The consumption of beverages that contain sugar is associated with overweight, possibly because liquid sugars do not lead to a sense of satiety, so the consumption of other foods is not reduced. However, data are lacking to show that the replacement of sugar-containing beverages with noncaloric beverages diminishes weight gain. METHODS: We conducted an 18-month trial involving 641 primarily normal-weight children from 4 years 10 months to 11 years 11 months of age. Participants were randomly assigned to receive 250 ml (8 oz) per day of a sugar-free, artificially sweetened beverage (sugar-free group) or a similar sugar-containing beverage that provided 104 kcal (sugar group). Beverages were distributed through schools. At 18 months, 26% of the children had stopped consuming the beverages; the data from children who did not complete the study were imputed. RESULTS: The z score for the body-mass index (BMI, the weight in kilograms divided by the square of the height in meters) increased on average by 0.02 SD units in the sugar-free group and by 0.15 SD units in the sugar group; the 95% confidence interval (CI) of the difference was -0.21 to 0.05. Weight increased by 6.35 kg in the sugar-free group as compared with 7.37 kg in the sugar group (95% CI for the difference, -1.54 to 0.48). The skinfold-thickness measurements, waist-to-height ratio, and fat mass also increased significantly less in the sugar-free group. Adverse events were minor. When we combined measurements at 18 months in 136 children who had discontinued the study with those in 477 children who completed the study, the BMI z score increased by 0.06 SD units in the sugar-free group and by 0.12 SD units in the sugar group (P=0.06). CONCLUSIONS: Masked replacement of sugar-containing beverages with noncaloric beverages reduced weight gain and fat accumulation in normal-weight children. (Funded by the Netherlands Organization for Health Research and Development and others; DRINK ClinicalTrials.gov number, NCT00893529.)

BACKGROUND: Consumption of sugar-sweetened beverages may cause excessive weight gain. We aimed to assess the effect on weight gain of an intervention that included the provision of noncaloric beverages at home for overweight and obese adolescents. METHODS: We randomly
assigned 224 overweight and obese adolescents who regularly consumed sugar-sweetened beverages to experimental and control groups. The experimental group received a 1-year intervention designed to decrease consumption of sugar-sweetened beverages, with follow-up for an additional year without intervention. We hypothesized that the experimental group would gain weight at a slower rate than the control group. RESULTS: Retention rates were 97% at 1 year and 93% at 2 years. Reported consumption of sugar-sweetened beverages was similar at baseline in the experimental and control groups (1.7 servings per day), declined to nearly 0 in the experimental group at 1 year, and remained lower in the experimental group than in the control group at 2 years. The primary outcome, the change in mean body-mass index (BMI, the weight in kilograms divided by the square of the height in meters) at 2 years, did not differ significantly between the two groups (change in experimental group minus change in control group, -0.3; P=0.46). At 1 year, however, there were significant between-group differences for changes in BMI (-0.57, P=0.045) and weight (-1.9 kg, P=0.04). We found evidence of effect modification according to ethnic group at 1 year (P=0.04) and 2 years (P=0.01). In a prespecified analysis according to ethnic group, among Hispanic participants (27 in the experimental group and 19 in the control group), there was a significant between-group difference in the change in BMI at 1 year (-1.79, P=0.007) and 2 years (-2.35, P=0.01), but not among non-Hispanic participants (P>0.35 at years 1 and 2). The change in body fat as a percentage of total weight did not differ significantly between groups at 2 years (-0.5%, P=0.40). There were no adverse events related to study participation. CONCLUSIONS: Among overweight and obese adolescents, the increase in BMI was smaller in the experimental group than in the control group after a 1-year intervention designed to reduce consumption of sugar-sweetened beverages, but not at the 2-year follow-up (the prespecified primary outcome). (Funded by the National Institute of Diabetes and Digestive and Kidney Diseases and others; ClinicalTrials.gov number, NCT00381160.)


BACKGROUND: Temporal increases in the consumption of sugar-sweetened beverages have paralleled the rise in obesity prevalence, but whether the intake of such beverages interacts with the genetic predisposition to adiposity is unknown. METHODS: We analyzed the interaction between genetic predisposition and the intake of sugar-sweetened beverages in relation to body-mass index (BMI; the weight in kilograms divided by the square of the height in meters) and obesity risk in 6934 women from the Nurses' Health Study (NHS) and in 4423 men from the Health Professionals Follow-up Study (HPFS) and also in a replication cohort of 21,740 women from the Women's Genome Health Study (WGHS). The genetic-predisposition score was calculated on the basis of 32 BMI-associated loci. The intake of sugar-sweetened beverages was examined prospectively in relation to BMI. RESULTS: In the NHS and HPFS cohorts, the genetic association with BMI was stronger among participants with higher intake of sugar-sweetened beverages than among those with lower intake. In the combined cohorts, the increases in BMI per increment of 10 risk alleles were 1.00 for an intake of less than one serving per month, 1.12 for one to four servings per month, 1.38 for two to six servings per week, and 1.78 for one or more servings per day (P<0.001 for interaction). For the same categories of intake, the relative risks of incident obesity per increment of 10 risk alleles were 1.19 (95% confidence interval [CI], 0.90 to 1.59), 1.67 (95% CI, 1.28 to 2.16), 1.58 (95% CI, 1.01 to 2.47), and 5.06 (95% CI, 1.66 to 15.5) (P=0.02 for interaction). In the WGHS cohort, the increases in BMI per increment of 10 risk alleles were 1.39, 1.64, 1.90, and 2.53 across the four categories of intake (P=0.001 for interaction); the relative risks for incident obesity were 1.40 (95% CI, 1.19 to 1.64), 1.50 (95% CI, 1.16 to 1.93), 1.54 (95% CI, 1.21 to 1.94), and 3.16 (95% CI, 2.03 to 4.92), respectively (P=0.007 for interaction). CONCLUSIONS: The genetic association with adiposity appeared to be more pronounced with greater intake of sugar-sweetened beverages. (Funded by the National Institutes of Health and others.)

The link between the microbes in the human gut and the development of obesity, cardiovascular disease and metabolic syndromes, such as type 2 diabetes, is becoming clearer. However, because of the complexity of the microbial community, the functional connections are less well understood. Studies in both mice and humans are helping to show what effect the gut microbiota has on host metabolism by improving energy yield from food and modulating dietary or the host-derived compounds that alter host metabolic pathways. Through increased knowledge of the mechanisms involved in the interactions between the microbiota and its host, we will be in a better position to develop treatments for metabolic disease.


OBJECTIVE: To examine use of magnetic resonance imaging (MRI) of knees with no radiographic evidence of osteoarthritis to determine the prevalence of structural lesions associated with osteoarthritis and their relation to age, sex, and obesity. DESIGN: Population based observational study. SETTING: Community cohort in Framingham, MA, United States (Framingham osteoarthritis study). PARTICIPANTS: 710 people aged >50 who had no radiographic evidence of knee osteoarthritis (Kellgren-Lawrence grade 0) and who underwent MRI of the knee. MAIN OUTCOME MEASURES: Prevalence of MRI findings that are suggestive of knee osteoarthritis (osteoophytes, cartilage damage, bone marrow lesions, subchondral cysts, meniscal lesions, synovitis, attrition, and ligamentous lesions) in all participants and after stratification by age, sex, body mass index (BMI), and the presence or absence of knee pain. Pain was assessed by three different questions and also by WOMAC questionnaire. RESULTS: Of the 710 participants, 393 (55%) were women, 660 (93%) were white, and 206 (29%) had knee pain in the past month. The mean age was 62.3 years and mean BMI was 27.9. Prevalence of “any abnormality” was 89% (631/710) overall. Osteophytes were the most common abnormality among all participants (74%, 524/710), followed by cartilage damage (69%, 492/710) and bone marrow lesions (52%, 371/710). The higher the age, the higher the prevalence of all types of abnormalities detectable by MRI. There were no significant differences in the prevalence of any of the features between BMI groups. The prevalence of at least one type of pathology (“any abnormality”) was
high in both painful (90-97%, depending on pain definition) and painless (86-88%) knees.

CONCLUSIONS: MRI shows lesions in the tibiofemoral joint in most middle aged and elderly people in whom knee radiographs do not show any features of osteoarthritis, regardless of pain


OBJECTIVE: To assess the contribution of modifiable risk factors to social inequalities in the incidence of type 2 diabetes when these factors are measured at study baseline or repeatedly over follow-up and when long term exposure is accounted for. DESIGN: Prospective cohort study with risk factors (health behaviours (smoking, alcohol consumption, diet, and physical activity), body mass index, and biological risk markers (systolic blood pressure, triglycerides and high density lipoprotein cholesterol)) measured four times and diabetes status assessed seven times between 1991-93 and 2007-09. SETTING: Civil service departments in London (Whitehall II study). PARTICIPANTS: 7237 adults without diabetes (mean age 49.4 years; 2196 women). MAIN OUTCOME MEASURES: Incidence of type 2 diabetes and contribution of risk factors to its association with socioeconomic status. RESULTS: Over a mean follow-up of 14.2 years, 818 incident cases of diabetes were identified. Participants in the lowest occupational category had a 1.86-fold (hazard ratio 1.86, 95% confidence interval 1.48 to 2.32) greater risk of developing diabetes relative to those in the highest occupational category. Health behaviours and body mass index explained 33% (-1% to 78%) of this socioeconomic differential when risk factors were assessed at study baseline (attenuation of hazard ratio from 1.86 to 1.51), 36% (22% to 66%) when they were assessed repeatedly over the follow-up (attenuated hazard ratio 1.48), and 45% (28% to 75%) when long term exposure over the follow-up was accounted for (attenuated hazard ratio 1.41). With additional adjustment for biological risk markers, a total of 53% (29% to 88%) of the socioeconomic differential was explained (attenuated hazard ratio 1.35, 1.05 to 1.72).

CONCLUSIONS: Modifiable risk factors such as health behaviours and obesity, when measured repeatedly over time, explain almost half of the social inequalities in incidence of type 2 diabetes. This is more than was seen in previous studies based on single measurement of risk factors


BACKGROUND: Rates of obesity are increasing worldwide, including in sub-Saharan Africa. Neonates born to obese mothers in low-income settings are at increased risk of complications including admission to neonatal intensive care, macrosomia, low Apgar scores, and perinatal death. We investigated whether maternal obesity is a risk factor for neonatal death in sub-Saharan Africa and the effect on the detailed timing of death within the neonatal period.

METHODS: Cross-sectional Demographic and Health Surveys from 27 sub-Saharan countries (2003-09) were pooled. We used multivariable logistic regression to assess the risk of neonatal death (in women’s most recent singleton livebirth in the 5 years preceding the survey) by maternal body-mass index (BMI) category (measured during the survey). Timing of death was investigated with a discrete-time survival model. FINDINGS: 15,518 of 81,126 eligible women were overweight (4266 were obese), 52,006 had an optimum BMI, and 13,602 were underweight. Maternal obesity was associated with an increased odds of neonatal death after adjustment for confounding factors (adjusted odds ratio 1.46, 95% CI 1.11-1.91). Maternal obesity was a significant risk factor for neonatal deaths occurring during the first 2 days of life (1.62, 1.11-2.37). We noted no statistically significant relation later in the neonatal period (days 2-6 1.36, 0.84-2.21; days 7-27 1.19, 0.65-2.18), possibly because of low statistical power.

INTERPRETATION: Maternal obesity in sub-Saharan Africa is associated with increased risk of early neonatal death. Potential mechanisms include prematurity, intrapartum events, or infections. Strategies to prevent and reduce obesity
need to be considered; obese women should be advised to deliver in a health-care facility that can provide emergency obstetric and neonatal care. FUNDING: Economic and Social Research Council


In recent pooled analyses among whites and Asians, mortality was shown to rise markedly with increasing body mass index (BMI; weight (kg)/height (m)(2)), but much less is known about this association among blacks. This study prospectively examined all-cause mortality in relation to BMI among 22,014 black males, 9,343 white males, 30,810 black females, and 14,447 white females, aged 40-79 years, from the Southern Community Cohort Study, an epidemiologic cohort of largely low-income participants in 12 southeastern US states. Participants enrolled in the cohort from 2002 to 2009 and were followed up to 8.9 years. Hazard ratios and 95% confidence intervals for mortality were obtained from sex- and race-stratified Cox proportional hazards models in association with BMI at cohort entry, adjusting for age, education, income, cigarette smoking, and alcohol consumption. Elevated BMI was associated with increased mortality among whites (hazard ratios for BMI >40 vs. 20-24.9 = 1.37 (95% confidence interval (CI): 1.02, 1.84) and 1.47 (95% CI: 1.15, 1.89) for white males and white females, respectively) but not significantly among blacks (hazard ratios = 1.13 (95% CI: 0.89, 1.43) and 0.87 (95% CI: 0.72, 1.04) for black males and black females, respectively). In this large cohort, obesity in mid-to-late adulthood among blacks was not associated with the same excess mortality risk seen among whites


The Healthy Hunger-Free Kids Act of 2010 presents an opportunity to change the nutritional quality of foods served in low-income childcare centers, including Head Start centers. Excessive fruit juice consumption is associated with increased risk for obesity. Moreover, there is recent scientific evidence that sucrose consumption without the corresponding fiber, as is commonly present in fruit juice, is associated with the metabolic syndrome, liver injury, and obesity. Given the increasing risk of obesity among preschool children, we recommend that the US Department of Agriculture's Child and Adult Food Care Program, which manages the meal patterns in childcare centers such as Head Start, promote the elimination of fruit juice in favor of whole fruit for children


The risk of developing tuberculosis (TB) may be related to nutritional status. To determine the impact of nutritional status on TB incidence, the authors analyzed data from the First National Health and Nutrition Examination Survey (NHANES I) Epidemiologic Follow-up Study (NHEFS). NHANES I collected information on a probability sample of the US population in 1971-1975. Adults were followed up in 1982-1992. Incident TB cases were ascertained through interviews, medical records, and death certificates. TB incidences were compared across different levels of
nutritional status after controlling for potential confounding using proportional hazards regression appropriate to the complex sample design. TB incidence among adults with normal body mass index was 24.7 per 100,000 person-years (95% confidence interval (CI): 13.0, 36.3). In contrast, among persons who were underweight, overweight, and obese, estimated TB incidence rates were 260.2 (95% CI: 98.6, 421.8), 8.9 (95% CI: 2.2, 15.6), and 5.1 (95% CI: 0.0, 10.5) per 100,000 person-years, respectively. Adjusted hazard ratios were 12.43 (95% CI: 5.75, 26.95), 0.28 (95% CI: 0.13, 0.63), and 0.20 (95% CI: 0.07, 0.62), respectively, after controlling for demographic, socioeconomic, and medical characteristics. A low serum albumin level also increased the risk of TB, but low vitamin A, thiamine, riboflavin, and iron status did not. A population's nutritional profile is an important determinant of its TB incidence.


The obesogenic environment model would suggest that increased availability or access to energy dense foods which are high in saturated fat may be related to obesity. The association between food outlet location, deprivation, weight status and ethnicity was analysed using individual level data on a sample of 1198 pregnant women in the UK Born in Bradford cohort using geographic information systems (GIS) methodology. In the non South Asian group 24% were obese as were 17% of the South Asian group (BMI > 30). Food outlet identification methods revealed 886 outlets that were allocated into 5 categories of food shops. More than 95% of all participants lived within 500 m of a fast food outlet. Women in higher areas of deprivation had greater access to fast food outlets and to other forms of food shops. Contrary to hypotheses, there was a negative association between BMI and fast food outlet density in close (250 m) proximity in the South Asian group. Overall, these women had greater access to all food stores including fast food outlets compared to the non South Asian group. The stronger association between area level deprivation and fast food density than with area level deprivation and obesity argues for more detailed accounts of the obesogenic environment that include measures of individual behaviour.


BACKGROUND: It is widely acknowledged that adverse lifestyle behaviours in the population now will place an unsustainable burden on health service resources in the future. It has been estimated that the combined cost to the NHS in Wales of overweight and obesity, alcohol and tobacco is in excess of pound540 million. In the current climate of financial austerity, there can be a tendency for the case for prevention efforts to be judged on the basis of their scope for cost savings. This paper was prompted by discussion in Wales about the evidence for the cost savings from prevention and early intervention and a resulting concern that these programmes were thus being evaluated in policy terms using an incorrect metric. Following a review of the literature, this paper contributes to the discussion of the potential role that economics can play in informing decisions in this area. DISCUSSION: This paper argues that whilst studies of the economic burden of diseases provide information about the magnitude of the problem faced, they should not be used as a means of priority setting. Similarly, studies discussing the likelihood of savings as a result of prevention programmes may be distorting the arguments for public health. Prevention spend needs to be considered purposefully, resulting in a strategic commitment to spending. The role of economics in this process is to provide evidence demonstrating that information and support can be provided cost effectively to individuals to change their lifestyles thus avoiding lifestyle related morbidity and mortality. There is growing evidence that prevention programmes represent value for money using the currently accepted techniques and decision making metrics such as those advocated by NICE. SUMMARY: The issue here is not one of arguing that the economic evaluation of prevention and early intervention should be treated differently, although in
some instances that may be appropriate, rather it is about making the case for these interventions to be treated and evaluated to the same standard. The difficulty arises when a higher standard of cost saving may be expected from prevention and public health programmes. The paper concludes that it is of vital importance that during times of budget constraints, as currently faced, the public health budgets are not eroded to fund secondary care budget shortfalls, which are more easily identifiable. To do so would diminish any possibility of reducing the future burden faced by the NHS of lifestyle-related illnesses.


Existing research provides inconsistent evidence for a relationship between overweight and/or obesity and mortality, and poorly studies the population heterogeneity with respect to the mortality consequence of overweight/obesity. This study investigates how overweight and/or obesity affect mortality and how these effects may vary across sociodemographic groups defined by race, sex, age, education and income by using the U.S. Third National Health and Nutrition Examination Survey (NHANES III) with linked mortality data from 1988 to 2006 (6915 respondents with 2694 deaths). Analysis from Cox proportional hazard model suggests overweight people are at lower risk of death compared to normal weight people, but this protection effect is concentrated in black men, older adults, and people in the lowest income stratum. Class I obesity does not increase mortality risk, but Class II/III obesity does and the harmful effect is concentrated in whites, young and middle adults, and people with higher education and income levels. We discuss these findings in the context of the extant literature and the long-term prospect of life expectancy in the U.S.


BACKGROUND: The energy requirement of species at each trophic level in an ecological pyramid is a function of the number of organisms and their average mass. Regarding human populations, although considerable attention is given to estimating the number of people, much less is given to estimating average mass, despite evidence that average body mass is increasing. We estimate global human biomass, its distribution by region and the proportion of biomass due to overweight and obesity. METHODS: For each country we used data on body mass index (BMI) and height distribution to estimate average adult body mass. We calculated total biomass as the product of population size and average body mass. We estimated the percentage of the population that is overweight (BMI > 25) and obese (BMI > 30) and the biomass due to overweight and obesity. RESULTS: In 2005, global adult human biomass was approximately 287 million tonnes, of which 15 million tonnes were due to overweight (BMI > 25), a mass equivalent to that of 242 million people of average body mass (5% of global human biomass). Biomass due to obesity was 3.5 million tonnes, the mass equivalent of 56 million people of average body mass (1.2% of human biomass). North America has 6% of the world population but 34% of biomass due to obesity. Asia has 61% of the world population but 13% of biomass due to obesity. One tonne of human biomass corresponds to approximately 12 adults in North America and 17 adults in Asia. If all countries had the BMI distribution of the USA, the increase in human biomass of 58 million tonnes would be equivalent in mass to an extra 935 million people of average body mass, and have energy requirements equivalent to that of 473 million adults. CONCLUSIONS: Increasing population fatness could have the same implications for world food energy demands as an extra half a billion people living on the earth.

BACKGROUND: Growing attention is given to the effects of health promotion programs targeting physical activity and healthy eating in individuals with mental disorders. The design of evaluation studies of public health interventions poses several problems and the current literature appears to provide only limited evidence on the effectiveness of such programs. The aim of the study is to examine the effectiveness and cost-effectiveness of a health promotion intervention targeting physical activity and healthy eating in individuals with mental disorders living in sheltered housing. In this paper, the design of the study and baseline findings are described. METHODS/DESIGN: The design consists of a cluster preference randomized controlled trial. All sheltered housing organisations in the Flanders region (Belgium) were asked if they were interested to participate in the study and if they were having a preference to serve as intervention or control group. Those without a preference were randomly assigned to the intervention or control group. Individuals in the intervention group receive a 10-week health promotion intervention above their treatment as usual. Outcome assessments occur at baseline, at 10 and at 36 weeks. The primary outcomes include body weight, Body Mass Index, waist circumference, and fat mass. Secondary outcomes consist of physical activity levels, eating habits, health-related quality of life and psychiatric symptom severity. Cost-effectiveness of the intervention will be examined by calculating the Cost-Effectiveness ratio and through economic modeling. Twenty-five sheltered housing organisations agreed to participate. On the individual level 324 patients were willing to participate, including 225 individuals in the intervention group and 99 individuals in the control group. At baseline, no statistical significant differences between the two groups were found for the primary outcome variables. DISCUSSION: This is the first trial evaluating both the effectiveness and cost-effectiveness of a health promotion intervention targeting physical activity and healthy eating in mental health care using a cluster preference randomized controlled design. The baseline characteristics already demonstrate the unhealthy condition of the study population. TRIAL REGISTRATION: This study is registered at clinicaltrials.gov - NCT 01336946


BACKGROUND: It is important to understand the psycho-social context of obesity to inform prevention and treatment of obesity at both the individual and public health level. METHODS: Representative samples of middle-aged adults aged >/=43 years were recruited in Great Britain (GB) (n = 1182) and Portugal (n = 540) and interviewed to explore associations between body mass index (BMI), waist circumference (WC), demographic factors, physical activity, dietary habits (FFQ), life events (LES), Resilience (RS11), Mood (MS), Hopelessness (BDI) and Perceived Stress (PSS4). BMI (kg/m2) and WC (cm) were dependent variables in separate multiple linear regression models for which predictors were entered in 4 blocks: 1. demographic factors; 2. stressful life events; 3. diet/activity; and, 4. psychological measures. RESULTS: In the GB sample, BMI (kg/m2) was predicted by less education, illness in a close friend or relative, frequent alcohol consumption and sedentary behaviour. Among the Portuguese, higher BMI (kg/m2) was predicted by lower resilience. Being male and less education were independent predictors of having a larger WC (cm) in both countries. Within GB, not working, illness in a close friend or relative, sedentary lifestyle and lower resilience were also independent predictors of a larger WC (cm). CONCLUSIONS: These data suggest that intervention to treat and/or prevent obesity should target males, particularly those who have left education early and seek to promote resilience. In GB, targeting those with high alcohol consumption and encouraging physical activity, particularly
among those who have experienced illness in a close friend or relative may also be effective in reducing obesity


BACKGROUND: Persistent organic pollutants (POPs) are hazardous chemicals omnipresent in our food chain, which have been internationally regulated to ensure public health. Initially described for their potency to affect reproduction and promote cancer, recent studies have highlighted an unexpected implication of POPs in the development of metabolic diseases like type 2 diabetes and obesity. Based on this novel knowledge, this article aims at stimulating discussion and evaluating the effectiveness of current POP legislation to protect humans against the risk of metabolic diseases. Furthermore, the regulation of POPs in animal food products in the European Union (EU) is addressed, with a special focus on marine food since it may represent a major source of POP exposure to humans. DISCUSSION: There is mounting scientific evidence showing that current POP risk assessment and regulation cannot effectively protect humans against metabolic disorders. Better regulatory control of POPs in dietary products should be of high public health priority. SUMMARY: The general population is exposed to sufficient POPs, both in terms of concentration and diversity, to induce metabolic disorders. This situation should attract the greatest attention from the public health and governmental authorities


BACKGROUND: Reversing the obesity epidemic requires the development and evaluation of childhood obesity intervention programs. Lifestyle Triple P is a parent-focused group program that addresses three topics: nutrition, physical activity, and positive parenting. Australian research has established the efficacy of Lifestyle Triple P, which aims to prevent excessive weight gain in overweight and obese children. The aim of the current randomized controlled trial is to assess the effectiveness of the Lifestyle Triple P intervention when applied to Dutch parents of overweight and obese children aged 4-8 years. This effectiveness study is called GO4fit.

METHODS/DESIGN: Parents of overweight and obese children are being randomized to either the intervention or the control group. Those assigned to the intervention condition receive the 14-week Lifestyle Triple P intervention, in which they learn a range of nutritional, physical activity and positive parenting strategies. Parents in the control group receive two brochures, web-based tailored advice, and suggestions for exercises to increase active playing at home. Measurements are taken at baseline, directly after the intervention, and at one year follow-up. Primary outcome measure is the children's body composition, operationalized as BMI z-score, waist circumference, and fat mass (biceps and triceps skinfolds). Secondary outcome measures are children's dietary behavior and physical activity level, parenting practices, parental feeding style, parenting style, parental self-efficacy, and body composition of family members (parents and siblings).

DISCUSSION: Our intervention is characterized by a focus on changing general parenting styles, in addition to focusing on changing specific parenting practices, as obesity interventions typically do. Strengths of the current study are the randomized design, the long-term follow-up, and the broad range of both self-reported and objectively measured outcomes. TRIAL REGISTRATION: Current Controlled Trials NTR 2555 MEC AZM/UM: NL 31988.068.10 / MEC 10-3-052


Evolutionarily old and conserved homeostatic systems in the brain, including the hypothalamus,
are organized into nuclear structures of heterogeneous and diverse neuron populations. To investigate whether such circuits can be functionally reconstituted by synaptic integration of similarly diverse populations of neurons, we generated physically chimeric hypothalami by microtransplanting small numbers of embryonic enhanced green fluorescent protein-expressing, leptin-responsive hypothalamic cells into hypothalami of postnatal leptin receptor-deficient (db/db) mice that develop morbid obesity. Donor neurons differentiated and integrated as four distinct hypothalamic neuron subtypes, formed functional excitatory and inhibitory synapses, partially restored leptin responsiveness, and ameliorated hyperglycemia and obesity in db/db mice. These experiments serve as a proof of concept that transplanted neurons can functionally reconstitute complex neuronal circuitry in the mammalian brain.

SIDA


OBJECTIVE: To evaluate whether the prevalence of HIV-1 transmitted drug resistance has continued to decline in infections probably acquired within the United Kingdom. DESIGN: Multicentre observational study. SETTING: All UK public laboratories conducting tests for genotypic HIV resistance as a part of routine care. PARTICIPANTS: 14,584 patients infected with HIV-1 subtype B virus, who were first tested for resistance before receiving antiretroviral therapy between January 2002 and December 2009. MAIN OUTCOME MEASURE: Prevalence of transmitted drug resistance, defined as one or more resistance mutations from the surveillance list recommended by the World Health Organization. RESULTS: 1654 (11.3%, 95% confidence interval 10.8% to 11.9%) patients had one or more mutations associated with transmitted HIV-1 drug resistance; prevalence was found to decline from 15.5% in 2002 to 9.6% in 2007, followed by a slight increase to 10.9% in 2009 (P=0.21). This later rise was mainly a result of increases in resistance to nucleos(t)ide reverse transcriptase inhibitors (from 5.4% in 2007 to 6.6% in 2009, P=0.24) and protease inhibitors (1.5% to 2.1%, P=0.12). Thymidine analogue mutations, including T215 revertants, remained the most frequent mutations associated with nucleos(t)ide reverse transcriptase inhibitors, despite a considerable fall in stavudine and zidovudine use between 2002 and 2009 (from 29.4% of drug regimens in 2002 to 0.8% in 2009, from 47.9% to 8.8%, respectively). CONCLUSIONS: The previously observed decline in the prevalence of transmitted drug resistance in HIV-1 infections probably acquired in the UK seems to have stabilised. The continued high prevalence of thymidine analogue mutations suggests that the source of this resistance may be increasingly from patients who have not undergone antiretroviral therapy and who harbour resistant viruses. Testing of all newly diagnosed HIV-1 positive people should be continued.

(3) ROEHR B. The slow and unknown route to a cure for AIDS. BMJ. 2012, vol. 345, p.e5265

OBJECTIVES: We assessed whether multiple psychosocial factors are additive in their relationship to sexual risk behavior and self-reported HIV status (i.e., can be characterized as a syndemic) among young transgender women and the relationship of indicators of social marginalization to psychosocial factors. METHODS: Participants (n = 151) were aged 15 to 24 years and lived in Chicago or Los Angeles. We collected data on psychosocial factors (low self-esteem, polysubstance use, victimization related to transgender identity, and intimate partner violence) and social marginalization indicators (history of commercial sex work, homelessness, and incarceration) through an interviewer-administered survey. RESULTS: Syndemic factors were positively and additively related to sexual risk behavior and self-reported HIV infection. In addition, our syndemic index was significantly related to 2 indicators of social marginalization: a history of sex work and previous incarceration. CONCLUSIONS: These findings provide evidence for a syndemic of co-occurring psychosocial and health problems in young transgender women, taking place in a context of social marginalization


After host entry through mucosal surfaces, human immunodeficiency virus-1 (HIV-1) disseminates to lymphoid tissues to establish a generalized infection of the immune system. The mechanisms by which this virus spreads among permissive target cells locally during the early stages of transmission and systemically during subsequent dissemination are not known. In vitro studies suggest that the formation of virological synapses during stable contacts between infected and uninfected T cells greatly increases the efficiency of viral transfer. It is unclear, however, whether T-cell contacts are sufficiently stable in vivo to allow for functional synapse formation under the conditions of perpetual cell motility in epithelial and lymphoid tissues. Here, using multiphoton intravital microscopy, we examine the dynamic behaviour of HIV-infected T cells in the lymph nodes of humanized mice. We find that most productively infected T cells migrate robustly, resulting in their even distribution throughout the lymph node cortex. A subset of infected cells formed multinucleated syncytia through HIV envelope-dependent cell fusion. Both uncoordinated motility of syncytia and adhesion to CD4(+) lymph node cells led to the formation of long membrane tethers, increasing cell lengths to up to ten times that of migrating uninfected T cells. Blocking the egress of migratory T cells from the lymph nodes into efferent lymph vessels, and thus interrupting T-cell recirculation, limited HIV dissemination and strongly reduced plasma viraemia. Thus, we have found that HIV-infected T cells are motile, form syncytia and establish tethering interactions that may facilitate cell-to-cell transmission through virological synapses. Migration of T cells in lymph nodes therefore spreads infection locally, whereas their recirculation through tissues is important for efficient systemic viral spread, suggesting new molecular targets to antagonize HIV infection


BACKGROUND: Using data from two rounds of a cross-sectional, national-level survey of long-distance truck drivers, this paper examines the extent and trend of sexual risk behavior, prevalence of STI/HIV, and the linkage between exposure to HIV prevention programs and safe sex behavior. METHODS: Following the time location cluster sampling approach, major transshipment locations covering the bulk of India’s transport volume along four routes, North-East (NE), North-South (NS), North-West (NW) and South-East (SE) were surveyed. First round of the survey was conducted in 2007 (sample size 2066) whereas the second round was undertaken in 2009-2010 (sample size 2085). Long distance truck drivers were interviewed about their sexual behaviors, condom use practices, exposure to different HIV prevention interventions, and tested for HIV, reactive syphilis serology, Neiserria gonorrhoeae and Chlamydia trachomatis. The key variable of this evaluation study - exposure to HIV prevention interventions was divided into three categories - no exposure, less intensive exposure and intensive exposure. Data were analyzed using multiple logistic regression methods to understand the relationship between risk behavior and exposure to intervention and between program exposure and condom use.

RESULTS: The proportion of truckers exposed to HIV prevention interventions has increased over time with much significant increase in the intensive exposure across all the four routes (NE: from 14.9% to 28%, P < 0.01; NS: from 20.9% to 38.1%; NW: 11.5% to 39.5%, P < 0.01; SE: 4.7% to 9.7%, P <0.05). Overall, the consistent condom use in sex with non-regular female partners too has increased over the time (paid female partners: from 67.1% to 73.2%, P <0.05; non-paid female partners: from 17.9% to 37.1%, P <0.05). At the aggregate level, the proportion tested HIV positive has declined from 3.2% to 2.5% in (p<0.10) and proportion tested positive for Syphilis too has reduced from 3.2% to 1.7% (p<0.05). Truckers who had sex with paid female partners (men at risk) were significantly more likely to get exposed to intensive program (aOR: 2.6, 95%CI 1.9-3.4) as compared to those who did not have sex with paid partners. Truckers who had sex with paid partners and exposed to intervention program were more likely to use condoms consistently (aOR: 2.1, 95% CI 1.2-3.7). The consistent condom use among respondents who travel through states with targeted interventions towards female sex workers was higher than those who travel through states with less intensive program among FSWs. CONCLUSIONS: These evaluation study results highlight the ability of intensive program to reach truckers who have sex outside marriage with HIV prevention interventions and promote safe sex behaviors among them. Truckers who practice safe sex behaviors with an exposure to intensive program are less likely to suffer from STIs and HIV, which has implications for HIV prevention program with truckers' population in India and elsewhere. The simultaneous targeted interventions among female sex workers appeared to have contributed to safe sexual practices among truckers.


BACKGROUND: Condoms are effective in preventing the transmission of HIV and other sexually transmitted infections, when properly used. However, recent data from surveys of female sex workers (FSWs) in Karnataka in south India, suggest that condom breakage rates may be quite high. It is important therefore to quantify condom breakage rates, and examine what factors might precipitate condom breakage, so that programmers can identify those at risk, and develop appropriate interventions. METHODS: We explored determinants of reported condom breakage in the previous month among 1,928 female sex workers in four districts of Karnataka using data from cross-sectional surveys undertaken from July 2008 to February 2009. Using stepwise multivariate logistic regression, we examined the possible determinants of condom breakage, controlling for several independent variables including the district and client load. RESULTS: Overall, 11.4% of FSWs reported at least one condom break in the previous month. FSWs were much more likely to report breakage if under 20 years of age (AOR 3.43, p = 0.005); if divorced/ separated/widowed (AOR 1.52, p = 0.012); if they were regular alcohol users (AOR 1.63, p = 0.005); if they mostly entertained clients in lodges/rented rooms (AOR 2.99, p = 0.029) or brothels (AOR 4.77, p =
0.003), compared to street based sex workers; if they had ever had anal sex (AOR 2.03, p = 0.006); if the sex worker herself (as opposed to the client) applied the condom at last use (AOR 1.90, p < 0.001); if they were inconsistent condom users (AOR 2.77, p < 0.001); and if they had never seen a condom demonstration (AOR 2.37, p < 0.001). CONCLUSIONS: The reported incidence of condom breakage was high in this study, and this is a major concern for HIV/STI prevention programs, for which condom use is a key prevention tool. Younger and more marginalized female sex workers were most vulnerable to condom breakage. Special effort is therefore required to seek out such women and to provide information and skills on correct condom use. More research is also needed on what specific situational parameters might be important in predisposing women to condom breakage.


BACKGROUND: In the context of AVAHAN, the India AIDS Initiative of the Bill & Melinda Gates Foundation, general population surveys (GPS) were carried out between 2006 and 2008 in Belgaum (northern), Bellary (mid-state) and Mysore (southern) districts of Karnataka state, south India. Data from these three surveys were analysed to understand heterogeneity in HIV risk.

METHODS: Outcome variables were the prevalence of HIV and sexually transmitted infections (STIs). Independent variables included age, district, place of residence, along with socio-demographic, medical and behavioural characteristics. Multivariate logistic regression was undertaken to identify characteristics associated with HIV and differences between districts, incorporating survey statistics to consider weights and cluster effects.

RESULTS: The participation rate was 79.0% for the interview and 72.5% for providing a blood or urine sample that was tested for HIV. Belgaum had the highest overall HIV (1.43%) and Herpes simplex type-2 (HSV-2) (16.93%) prevalence, and the lowest prevalence of curable STIs. In Belgaum, the HIV epidemic is predominantly rural, and among women. In Bellary, the epidemic is predominantly in urban areas and among men, and HIV prevalence was 1.18%. Mysore had the lowest prevalence of HIV (0.80%) and HSV-2 (10.89%) and the highest prevalence of curable STIs. Higher HIV prevalence among men was associated with increasing age (p<0.001), and with history of STIs (AOR=2.44,95%CI:1.15-5.17). Male circumcision was associated with lower HIV prevalence (AOR=0.33,95%CI:0.13-0.81). Higher HIV prevalence among women was associated with age (AOR25-29 years=11.22,95%CI:1.42-88.74, AOR30-34 years=13.13,95%CI:1.67-103.19 and AOR35-39 years=11.33,95%CI:1.32-96.83), having more than one lifetime sexual partner (AOR=4.61,95%CI:1.26-16.91) and having ever used a condom (AOR=3.32,95%CI:1.38-7.99). Having a dissolved marriage (being widowed/divorced/separated) was the strongest predictor (AOR=10.98,95%CI:5.35-22.57) of HIV among women. Being a muslim woman was associated with lower HIV prevalence (AOR=0.27,95%CI:0.08-0.87). CONCLUSION: The HIV epidemic in Karnataka shows considerable heterogeneity, and there appears to be an increasing gradient in HIV prevalence from south to north. The sex work structure in the northern districts may explain the higher prevalence of HIV in northern Karnataka. The higher prevalence of HIV and HSV-2 and lower prevalence of curable STIs in Belgaum suggests a later epidemic phase. Similarly, higher prevalence of curable STIs and lower HIV and HSV-2 prevalence in Mysore suggests an early phase epidemic.


BACKGROUND: As communities face serious pressures on traditional values, such as those posed by HIV infection, cultural inertia may result, whereby existing trends towards more liberalized views of sexuality are stalled. We examined changes in attitudes around HIV in
Bagalkot district, south India, between 2003 and 2009. METHODS: General population surveys were conducted in 2003 and 2009, among approximately 6,600 randomly sampled men and women in 10 villages and 20 urban blocks of Bagalkot. Questions about HIV knowledge, sexuality, gender and condoms were included. We compared responses in the two surveys using a multivariate logistic regression model. RESULTS: Awareness of HIV increased significantly from 76.9% in 2003 to 87.8% in 2009, and condom awareness increased significantly (37.4% to 65.4%) in all groups studied. However, in 2009, only 23% of people mentioned condoms as a means of prevention, an improvement from 8% in 2003 (adjusted odds ratio (AOR) 3.3; 95%CI 2.6-4.1, p<0.001). There was a significant increase in the number of women believing sex workers should be compulsorily tested for HIV (76.3%-86.4%, AOR 1.8; 95%CI 1.4-2.4, p<0.001). An increasing number agreed that "it is wrong to talk about sex" (p=0.05), especially women (21.9% vs. 32.4%, p<0.01). There was an increase in women who thought it "wrong to talk about AIDS in a respectable family", and more respondents in 2009 thought it improper to discuss condoms (15.6% vs. 27.4%, AOR 1.9, 95%CI 1.4-2.8, p=0.001). In 2003, 31.4% agreed that "access to condoms promotes promiscuity", increasing to 45.2% in 2009 (AOR 1.7; 95%CI 1.3-2.3, p<0.001). Educated and young urban women were the most likely to believe this. In 2003, 19.3% and in 2009 30.2% (AOR 1.8, 95%CI 1.4-2.3, p<0.001) thought that sex education promotes sexual activity and promiscuity. CONCLUSIONS: Despite increases over time in HIV-related knowledge and reductions in stigmatizing attitudes, resistance to changing cultural mores was apparent, with less willingness to embrace openness and discuss sexuality. Young and female respondents appeared to be the most resistant to change, reflecting a cultural inertia that mirrors studies of other pressures on traditional societal values. More effort is required to advocate among women and young people for healthy sexuality, openness and safe sex practices.


BACKGROUND: Avahan, the India AIDS initiative began HIV prevention interventions in 2003 in Andhra Pradesh (AP) among high-risk groups including female sex workers (FSWs), to help contain the HIV epidemic. This manuscript describes an assessment of this intervention using the published Avahan evaluation framework and assesses the coverage, outcomes and changes in STI and HIV prevalence among FSWs. METHODOLOGY: Multiple data sources were utilized including Avahan routine program monitoring data, two rounds of cross-sectional survey data (in 2006 and 2009) and STI clinical quality monitoring assessments. Bi-variate and multivariate analyses, Wald Chi-square tests and multivariate logistic regressions were used to measure changes in behavioural and biological outcomes over time and their association. RESULTS: Avahan scaled up in conjunction with the Government program to operate in all districts in AP by March 2009. By March 2009, 80% of the FSWs were being contacted monthly and 21% were coming to STI services monthly. Survey data confirmed an increase in peer educator contacts with the mean number increasing from 2.9 in 2006 to 5.3 in 2009. By 2008 free and Avahan-supported socially marketed condoms were adequate to cover the estimated number of commercial sex acts, at 45 condoms/FSW/month. Consistent condom use was reported to increase with regular (63.6% to 83.4%; AOR=2.98; p<0.001) and occasional clients (70.8% to 83.7%; AOR=2.20; p<0.001). The prevalence of lifetime syphilis decreased (10.8% to 6.1%; AOR=0.39; p<0.001) and HIV prevalence decreased in all districts combined (17.7% to 13.2%; AOR 0.68; p<0.01). Prevalence of HIV among younger FSWs (aged 18 to 20 years) decreased (17.7% to 8.2%, p=0.008). A significant increase in condom use at last sex with occasional and regular clients and consistent condom use with occasional clients was observed among FSWs exposed to the Avahan program. There was no association between exposure and HIV or STIs, although numbers were small. CONCLUSIONS: The absence of control groups is a limitation of this study and does not allow attribution of changes in outcomes and declines in HIV and STI to the Avahan program. However, the large scale implementation, high coverage, intermediate
outcomes and association of these outcomes to the Avahan program provide plausible evidence that the declines were likely associated with Avahan. Declining HIV prevalence among the general population in Andhra Pradesh points towards a combined impact of Avahan and government interventions


BACKGROUND: In the Northeast Indian states of Manipur and Nagaland there has been an ongoing HIV epidemic among injecting drug users (IDUs) since the mid-1990s. Project ORCHID is an Avahan-funded HIV prevention project that has been working in selected districts of Manipur and Nagaland since 2004. It supports local partner non-government organisations (NGOs) to deliver a range of harm reduction interventions, and currently reaches approximately 14,500 IDUs across the two states. To assess changes in HIV risk behaviours two Behavioural Tracking Surveys (BTS) were undertaken among IDUs in 2007 and 2009. METHODS: The BTS used respondent driven sampling (RDS) to recruit adult male IDUs (18 years of age and above) from Ukhrul and Chandel districts in Manipur, and Kiphire and Zunheboto districts in Nagaland. This paper reports on analysis of socio-demographics, drug use and injecting practices, sexual behaviour and condom use, knowledge of HIV, and exposure to interventions. Descriptive data were analysed using RDSAT, and odds ratios were calculated in SPSS. RESULTS: The proportion of IDUs reporting NOT sharing needles / syringes at last injection increased substantially in Ukhrul (59.6% to 91.2%) and Zunheboto (45.5% to 73.8%), remained high in Chandel (97.0% to 98.9%), and remained largely unchanged in Kiphire (63.3% to 68.8%). The use of condoms with regular partners was low in all districts at both time points. In Ukhrul, Kiphire and Zunheboto the proportion of IDUs using condoms during sexual intercourse with a casual partner increased substantially to approximately 70-85%, whilst in Chandel the increase was only marginal (57.4% to 63.6%). Exposure to NGO HIV prevention interventions was significantly associated (p<0.05) with lower odds of sharing needles during the previous month (Nagaland, OR=0.63; Manipur, OR 0.35). CONCLUSION: Despite district-level differences, the results from this BTS study indicate that exposure to HIV prevention services, predominately delivered in this region by NGOs, is associated with a reduced likelihood of engaging in HIV risk behaviours. IDUs using HIV prevention services are more likely to engage in safe injecting and sexual practices, and effort is required to sustain / increase opportunities for IDUs to access these services. These outcomes are a noteworthy achievement in a very challenging context


BACKGROUND: Avahan, the India AIDS Initiative, delivers HIV prevention services to high-risk populations at scale. Although the broad costs of such HIV interventions are known, to-date there has been little data available on the comparative costs of reaching different target groups, including female sex workers (FSWs), replace with ‘high risk men who have sex with men (HR-MSM) and trans-genders. METHODS: Costs are estimated for the first three years of Avahan scale up differentiated by typology of female sex workers (brothel, street, home, lodge based, bar based), HR-MSM and transgenders in urban districts in India: Mumbai and Thane in Maharashtra and Bangalore in Karnataka. Financial and economic costs were collected prospectively from a
provider perspective. Outputs were measured using data collected by the Avahan programme. Costs are presented in US$2008. RESULTS: Costs were found to vary substantially by target group. Non-governmental organisations (NGOs) working with transgender populations had a higher mean cost (US $116) per person reached compared to those dealing primarily with FSWs (US $75-96) and MSWs (US $90) by the end of year three of the programme in Mumbai. The mean cost of delivering the intervention to HR-MSMs (US $42) was higher than delivering it to FSWs (US $37) in Bangalore. The package of services delivered to each target group was similar, and our results suggest that cost variation is related to the target population size, the intensity of the programme (in terms of number of contacts made per year) and a number of specific issues related to each target group. CONCLUSIONS: Based on our data policy makers and program managers need to consider the ease of accessing high risk population when planning and budgeting for HIV prevention services for these populations and avoid funding programmes on the basis of target population size alone


BACKGROUND: Recent studies of male migrants in India indicate that those who are infected with HIV are spreading the epidemic from high risk populations in high prevalence areas to populations in low prevalence areas. In this context, migrant men are believed to initiate and have risky sexual behaviors in places of destination and not in places of origin. The paucity of information on men's risky sexual behaviors in places of origin limits the decision to initiate HIV prevention interventions among populations in high out-migration areas in India. METHODS: A cross-sectional behavioral survey was conducted among non-migrants, returned migrants (with a history of migration), and active (current) migrants in rural areas across two districts with high levels of male out-migration: Prakasam district in Andhra Pradesh and Azamgarh district in Uttar Pradesh. Surveys assessed participant demographics, migration status, migration history, and sexual behavior along the migration routes, place of initiation of sex. District-stratified regression models were used to understand the associations between migration and risky sexual behaviors (number of partners, condom use at last sex) and descriptive analyses of migrants' place of sexual initiation and continuation along migration routes. RESULTS: The average age at migration of our study sample was 19 years. Adjusted regression analyses revealed that active migrants were more likely to engage in sex with sex workers in the past 12 months (Prakasam: 15 percent vs. 8 percent; adjusted odds ratio (aOR)=2.1, 95% CI 1.2-3.4; Azamgarh: 19 percent vs.7 percent; aOR=4.0, 95% CI 2.4-6.6) as well as have multiple (3+) sex partners (Prakasam: 18 percent vs. 9 percent; aOR=2.0, 95% CI 1.3-3.2; Azamgarh: 28 percent vs. 21 percent; aOR=1.9, 95% CI 1.2-3.0) than non-migrants. Contrary to popular belief, a high proportion of active and returned migrants (almost 75 percent of those who had sex) initiated sex at the place of origin before migrating, which is equivalent to the proportion of non-migrants who engaged in sex with sex workers as well as with casual unpaid partners. Moreover, non-migrants were more likely than migrants to engage in unprotected sex. CONCLUSION: Findings of this study document that returned migrants and active migrants have higher sexual risk behaviors than the non-migrants. Most migrants initiate non-marital sex in the place of origin and many continue these behaviors in places of destination. Migrants' destination area behaviors are linked to sex with sex workers and they continue to practice such behaviors in the place of origin as well. Unprotected sex in places of destination with high HIV prevalence settings poses a risk of transmission from high risk population groups to migrants, and in turn to their married and other sexual partners in places of origin. These findings suggest the need for controlling the spread of HIV among both men and women resulting from unsafe sex in places of origin that have high vulnerability due to the frequent migratory nature of populations.
BACKGROUND: With the evolution of Health Belief Model, risk perception has been identified as one of several core components of public health interventions. While female sex workers (FSWs) in India continue to be at most risk of acquiring and transmitting HIV, little is known about their perception towards risk of acquiring HIV and how this perception depends upon their history of consistent condom use behavior with different type of partners. The objective of this study is to fill this gap in the literature by examining this relationship among mobile FSWs in southern India.

METHODS: We analyzed data for 5,413 mobile FSWs from a cross-sectional behavioral survey conducted in 22 districts from four states in southern India. This survey assessed participants' demographics, condom use in sex with different types of partners, continuation of sex while experiencing STI symptoms, alcohol use before having sex, and self-perceived risk of acquiring HIV. Descriptive analyses and multilevel logistic regression models were used to examine the associations between risky sexual behaviors and self-perceived risk of acquiring HIV; and to understand the geographical differences in HIV risk perception. RESULTS: Of the total mobile FSWs, only two-fifths (40%) perceived themselves to be at high risk of acquiring HIV; more so in the state of Andhra Pradesh (56%) and less in Maharashtra (17%). FSWs seem to assess their current risk of acquiring HIV primarily on the basis of their past condom use behavior with occasional clients and less on the basis of their past condom use behaviors with regular clients and non-paying partners. Prior inconsistent condom use with occasional clients was independently associated with current perception of high HIV risk (adjusted odds ratio [aOR] = 2.1, 95% confidence interval [CI]: 1.7-2.6). In contrast, prior inconsistent condom use with non-paying partners was associated with current perception of low HIV risk (aOR= 0.7, 95% CI: 0.5-0.9). The congruence between HIV risk perception and condom use with occasional clients was high: only 12% of FSWs reported inconsistent condom use with occasional clients but perceived themselves to be at low risk of acquiring HIV. CONCLUSION: The association between high risk perception of acquiring HIV and inconsistent condom use, especially with regular clients and non-paying partners, has not been completely internalized by this high risk group of mobile FSWs in India. Motivational efforts to prevent HIV should emphasize the importance of accurately assessing an individual's risk of acquiring HIV based on condom use behavior with all types of partners: occasional and regular clients as well as non-paying partners; and encourage behavior change based on an accurate self-assessment of HIV risk

BACKGROUND: Avahan, the India AIDS Initiative, a large-scale HIV prevention program, using peer-mediated approaches and STI services, was implemented for high-risk groups for HIV in six states in India. This paper describes the assessment of the program among female sex workers (FSWs) in the southern state of Tamil Nadu. METHODS: An analytical framework based on the Avahan impact evaluation design was used. Routine program monitoring data, two rounds of cross-sectional biological and behavioural surveys among FSWs in 2006 (Round 1) and 2009 (Round 2) and quality assessments of clinical services for sexually transmitted infections (STIs) were used to assess trends in coverage, condom use and prevalence of STIs, HIV and their association with program exposure. Logistic regression analysis was used to examine trends in intermediate outcomes and their associations with intervention exposure. RESULTS: The Avahan program in Tamil Nadu was scaled up and achieved monthly reported coverage of 79% within four years of implementation. The cross-sectional survey data showed an increasing proportion of FSWs being reached by Avahan, 54% in Round 1 and 86% in Round 2 [AOR=4.7;p=0.001].
Quality assessments of STI clinical services showed consistent improvement in quality scores (3.0 in 2005 to 4.5 in 2008). Condom distribution by the program rose to cover all estimated commercial sex acts. Reported consistent condom use increased between Round 1 and Round 2 with occasional (72% to 93%; AOR=5.5; p=0.001) and regular clients (68% to 89%; AOR=4.3; p=0.001) while reactive syphilis serology declined significantly (9.7% to 2.2% AOR=0.2; p=0.001). HIV prevalence remained stable at 6.1% between rounds. There was a strong association between Avahan exposure and consistent condom use with commercial clients; however no association was seen with declines in STIs. CONCLUSIONS: The Avahan program in Tamil Nadu achieved high coverage of FSWs, resulting in outcomes of improved condom use, declining syphilis and stabilizing HIV prevalence. These expected outcomes following the program logic model and declining HIV prevalence among general population groups suggest potential impact of high risk group interventions on HIV epidemic in Tamil Nadu


BACKGROUND: Avahan, the India AIDS Initiative has been a partner supporting targeted interventions of high risk populations under India's National AIDS Control Organisation (NACO) since 2004 in the state of Maharashtra. This paper presents an assessment of the Avahan program among female sex workers (FSWs) in Maharashtra, its coverage, outcomes achieved and their association with Avahan program. METHODS: An analytical framework based on the Avahan evaluation design was used, addressing assessment questions on program implementation, intermediate outcomes and association of outcomes with Avahan. Data from routine program monitoring, two rounds of cross-sectional Integrated Behavioural and Biological Assessments (IBBAs) conducted in 2006 (Round 1- R1) and 2009 (Round 2 - R2) and quality assessments of program clinics were used. Bi-variate and multivariate analysis were conducted using the complex samples module in SPSS 15 (IBM, Somers NY). RESULTS: The Avahan program achieved coverage of over 66% of FSWs within four years of implementation. The IBBA data showed increased contact by peers in R2 compared to R1 (AOR:2.34; p=0.001). Reported condom use with clients increased in R2 and number of FSWs reporting zero unprotected sex acts increased from 76.2% (R1) to 94.6% (R2) [AOR: 5.1, p=0.001].Significant declines were observed in prevalence of syphilis (RPR) (15.8% to 10.8%; AOR:0.54; p=0.001), chlamydia (8% to 6.2%; AOR:.0.65; p=0.010) and gonorrhoea (7.4% to 3.9; AOR:.0.60; p=0.026) between R1 and R2. HIV prevalence increased (25.8% to 27.5%; AOR:1.29; p=0.04). District-wise analysis showed decline in three districts and increase in Mumbai and Thane districts.FSWs exposed to Avahan had higher consistent condom use with occasional (94.3% vs. 90.6%; AOR: 1.55; p=0.04) and regular clients (92.5% vs. 86.0%; AOR: 1.95, p=0.001) compared to FSWs unexposed to Avahan. Decline in high titre syphilis was associated with Avahan exposure. CONCLUSION: The Avahan program was scaled up and achieved high coverage of FSWs in Maharashtra amidst multiple intervention players. Avahan coverage of FSWs was associated with improved safe sexual practices and declines in STIs. Prevalence of HIV increased requiring more detailed understanding of the data and, if confirmed, new approaches for HIV control


The HIV envelope (Env) protein gp120 is protected from antibody recognition by a dense glycan shield. However, several of the recently identified PGT broadly neutralizing antibodies appear to interact directly with the HIV glycan coat. Crystal structures of antigen-binding fragments (Fabs) PGT 127 and 128 with Man(9) at 1.65 and 1.29 angstrom resolution, respectively, and glycan binding data delineate a specific high mannose-binding site. Fab PGT 128 complexed with a fully
glycosylated gp120 outer domain at 3.25 angstroms reveals that the antibody penetrates the glycan shield and recognizes two conserved glycans as well as a short beta-strand segment of the gp120 V3 loop, accounting for its high binding affinity and broad specificity. Furthermore, our data suggest that the high neutralization potency of PGT 127 and 128 immunoglobulin Gs may be mediated by cross-linking Env trimers on the viral surface.


BACKGROUND: Avahan, the India AIDS Initiative, implemented a large HIV prevention programme across six high HIV prevalence states amongst high risk groups consisting of female sex workers, high risk men who have sex with men, transgenders and injecting drug users in India. Utilization of the clinical services, health seeking behaviour and trends in syndromic diagnosis of sexually transmitted infections amongst these populations were measured using the individual tracking data. METHODS: The Avahan clinical monitoring system included individual tracking data pertaining to clinical services amongst high risk groups. All clinic visits were recorded in the routine clinical monitoring system using unique identification numbers at the NGO-level. Visits by individual clinic attendees were tracked from January 2005 to December 2009. An analysis examining the limited variables over time, stratified by risk group, was performed.

RESULTS: A total of 431,434 individuals including 331,533 female sex workers, 10,280 injecting drug users, 82,293 men who have sex with men, and 7,328 transgenders visited the clinics with a total of 2,700,192 visits. Individuals made an average of 6.2 visits to the clinics during the study period. The number of visits per person increased annually from 1.2 in 2005 to 8.3 in 2009. The proportion of attendees visiting clinics more than four times a year increased from 4% in 2005 to 26% in 2009 (p<0.001). The proportion of STI syndromes diagnosed amongst female sex workers decreased from 39% in 2005 to 11% in 2009 (p<0.001) while the proportion of STI syndromes diagnosed amongst high risk men who have sex with men decreased from 12% to 3% (p<0.001). The proportion of attendees seeking regular STI check-ups increased from 12% to 48% (p<0.001). The proportion of high risk groups accessing clinics within two days of onset of STI-related symptoms and acceptability of speculum and proctoscope examination increased significantly during the programme implementation period. CONCLUSIONS: The programme demonstrated that acceptable and accessible services with marginalised and often difficult-to-reach populations can be brought to a very large scale using standardized approaches. Utilization of these services can dramatically improve health seeking behaviour and reduce STI prevalence.


BACKGROUND: Linezolid has antimycobacterial activity in vitro and is increasingly used for patients with highly drug-resistant tuberculosis. METHODS: We enrolled 41 patients who had sputum-culture-positive extensively drug-resistant (XDR) tuberculosis and who had not had a response to any available chemotherapeutic option during the previous 6 months. Patients were randomly assigned to linezolid therapy that started immediately or after 2 months, at a dose of 600 mg per day, without a change in their background regimen. The primary end point was the time to sputum-culture conversion on solid medium, with data censored 4 months after study entry. After confirmed sputum-smear conversion or 4 months (whichever came first), patients underwent a second randomization to continued linezolid therapy at a dose of 600 mg per day or 300 mg per day for at least an additional 18 months, with careful toxicity monitoring. RESULTS: By 4 months, 15 of the 19 patients (79%) in the immediate-start group and 7 of the 20 (35%) in the delayed-start group had culture conversion (P=0.001). Most patients (34 of 39 [87%]) had a negative sputum culture within 6 months after linezolid had been added to their drug regimen. Of the 38 patients with exposure to linezolid, 31 (82%) had clinically significant adverse events that were possibly or probably related to linezolid, including 3 patients who discontinued therapy. Patients who received 300 mg per day after the second randomization had fewer adverse events than those who continued taking 600 mg per day. Thirteen patients completed therapy and have not had a relapse. Four cases of acquired resistance to linezolid have been observed. CONCLUSIONS: Linezolid is effective at achieving culture conversion among patients with treatment-refractory XDR pulmonary tuberculosis, but patients must be monitored carefully for adverse events. (Funded by the National Institute of Allergy and Infectious Diseases and the Ministry of Health and Welfare, South Korea; ClinicalTrials.gov number, NCT00727844.)


BACKGROUND: The prevalence of extensively drug-resistant (XDR) tuberculosis is increasing due to the expanded use of second-line drugs in people with multidrug-resistant (MDR) disease. We prospectively assessed resistance to second-line antituberculosis drugs in eight countries. METHODS: From Jan 1, 2005, to Dec 31, 2008, we enrolled consecutive adults with locally confirmed pulmonary MDR tuberculosis at the start of second-line treatment in Estonia, Latvia, Peru, Philippines, Russia, South Africa, South Korea, and Thailand. Drug-susceptibility testing for study purposes was done centrally at the Centers for Disease Control and Prevention for 11 first-line and second-line drugs. We compared the results with clinical and epidemiological data to identify risk factors for resistance to second-line drugs and XDR tuberculosis. FINDINGS: Among 1278 patients, 43.7% showed resistance to at least one second-line drug, 20.0% to at least one second-line injectable drug, and 12.9% to at least one fluoroquinolone. 6.7% of patients had XDR tuberculosis (range across study sites 0.8-15.2%). Previous treatment with second-line drugs was consistently the strongest risk factor for resistance to these drugs, which increased the risk of XDR tuberculosis by more than four times. Fluoroquinolone resistance and XDR tuberculosis...
were more frequent in women than in men. Unemployment, alcohol abuse, and smoking were associated with resistance to second-line injectable drugs across countries. Other risk factors differed between drugs and countries. INTERPRETATION: Previous treatment with second-line drugs is a strong, consistent risk factor for resistance to these drugs, including XDR tuberculosis. Representative drug-susceptibility results could guide in-country policies for laboratory capacity and diagnostic strategies. FUNDING: US Agency for International Development, Centers for Disease Control and Prevention, National Institutes of Health/National Institute of Allergy and Infectious Diseases, and Korean Ministry of Health and Welfare

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The risk of developing tuberculosis (TB) may be related to nutritional status. To determine the impact of nutritional status on TB incidence, the authors analyzed data from the First National Health and Nutrition Examination Survey (NHANES I) Epidemiologic Follow-up Study (NHEFS). NHANES I collected information on a probability sample of the US population in 1971-1975. Adults were followed up in 1982-1992. Incident TB cases were ascertained through interviews, medical records, and death certificates. TB incidences were compared across different levels of nutritional status after controlling for potential confounding using proportional hazards regression appropriate to the complex sample design. TB incidence among adults with normal body mass index was 24.7 per 100,000 person-years (95% confidence interval (CI): 13.0, 36.3). In contrast, among persons who were underweight, overweight, and obese, estimated TB incidence rates were 260.2 (95% CI: 98.6, 421.8), 8.9 (95% CI: 2.2, 15.6), and 5.1 (95% CI: 0.0, 10.5) per 100,000 person-years, respectively. Adjusted hazard ratios were 12.43 (95% CI: 5.75, 26.95), 0.28 (95% CI: 0.13, 0.63), and 0.20 (95% CI: 0.07, 0.62), respectively, after controlling for demographic, socioeconomic, and medical characteristics. A low serum albumin level also increased the risk of TB, but low vitamin A, thiamine, riboflavin, and iron status did not. A population’s nutritional profile is an important determinant of its TB incidence