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

Revues 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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Bronchite chronique


To clarify the role of previous lung diseases (chronic bronchitis, emphysema, pneumonia, and tuberculosis) in the development of lung cancer, the authors conducted a pooled analysis of studies in the International Lung Cancer Consortium. Seventeen studies including 24,607 cases and 81,829 controls (noncases), mainly conducted in Europe and North America, were included (1984-2011). Using self-reported data on previous diagnoses of lung diseases, the authors derived study-specific effect estimates by means of logistic regression models or Cox proportional hazards models adjusted for age, sex, and cumulative tobacco smoking. Estimates were pooled using random-effects models. Analyses stratified by smoking status and histology were also conducted. A history of emphysema conferred a 2.44-fold increased risk of lung cancer (95% confidence interval (CI): 1.64, 3.62 (16 studies)). A history of chronic bronchitis conferred a relative risk of 1.47 (95% CI: 1.29, 1.68 (13 studies)). Tuberculosis (relative risk = 1.48, 95% CI: 1.17, 1.87 (16 studies)) and pneumonia (relative risk = 1.57, 95% CI: 1.22, 2.01 (12 studies)) were also associated with lung cancer risk. Among never smokers, elevated risks were observed for emphysema, pneumonia, and tuberculosis. These results suggest that previous lung diseases influence lung cancer risk independently of tobacco use and that these diseases are important for assessing individual risk.

(2) STRAKHOVA LA, MAKAROV IA, BLINOVA TV, BEREZINA NA. [Lipid metabolism in occupational chronic bronchitis associated with diabetes mellitus]. Med Tr Prom Ekol. 2012, n° 9, pp.27-32

The study of 311 patients with chronic occupational bronchitis associated with diabetes mellitus
(or diabetes-free) revealed lipid metabolism disorders presenting with overweight, obesity, dyslipoproteinemia. Diabetes mellitus addition to chronic bronchitis increased frequency of lipid metabolism disorders and higher values of lipid state. The revealed lipid metabolism disorders were more marked in the females


The article based on research work covers functional, bronchoscopy, microbiologic and immunologic features of chronic dust bronchitis and chronic bronchitis caused by toxic chemicals


Of paramount importance at the stage of rehabilitative treatment of the patients presenting with combined cardiopulmonary pathology are therapeutic measures aimed at eliminating the principal components of pathogenesis of a given disease and correcting the concomitant immunometabolic disturbances. Our investigations have demonstrated that ozone therapy given to the patients with chronic bronchitis and hypertension produces lipid-lowering, hypoglycemic and fibrinolytic effects. Its combination with anti-hypoxic treatment helps to normalize the functioning capabilities of all organs and systems of the body. Immunomodulatory effects of ozone therapy is attributable to the disintoxicative and anti-hypoxic actions of medical ozone as well as activation of the “lipid peroxidation--antioxidant protection” system


BACKGROUND: Although Lebanon is a highly polluted country, so far no study has specifically been designed to assess the association between outdoor air pollution and chronic bronchitis in this country. OBJECTIVE: To assess the association between exposure to outdoor air pollution and chronic bronchitis in Lebanon. METHODS: A pilot case-control study was conducted in two tertiary care hospitals. Cases consisted of patients diagnosed with chronic bronchitis by a pulmonologist and those epidemiologically confirmed. Controls included individuals free of any respiratory signs or symptoms. After obtaining informed consent, a standardized questionnaire was administered. RESULTS: Bivariate, stratified (over smoking status and gender) and multivariate analyses revealed that passive smoking at home (ORa: 2.56, 95% CI: 1.73-3.80) and at work (ORa: 1.89, 95% CI: 1.13-3.17); older age (ORa: 1.75, 95% CI: 1.55-2.39); lower education (ORa: 1.44, 95% CI: 1.21-1.72); living close to a busy road (ORa: 1.95, 95% CI: 1.31-2.89) and to a local power plant (ORa: 1.62, 95% CI: 1.07-2.45); and heating home by hot air conditioning (ORa: 1.85, 95% CI: 1.00-3.43) were moderately associated with chronic bronchitis; an inverse association was found with heating home electrically (ORa: 0.58, 95% CI: 0.39-0.85). A positive dose-effect relationship was observed in those living close to a busy road and to a local diesel exhaust source. CONCLUSION: Chronic bronchitis is associated with outdoor air pollution


AIM: To investigate microhemocirculation in patients with bronchopulmonary pathology with
application of Doppler flowmetry (DFM). MATERIAL AND METHODS: Videobronchoscopy (Olimpas or Pentax devices) was performed in 203 patients with bronchitis of different inflammation intensity: Functional activity of microhemocirculation in bronchial mucosa was studied with endobronchial laser Doppler flowmetry (LDF) which was also made in 20 healthy controls. RESULTS: LDF-grants demonstrated that patients with chronic bronchitis and pneumonia have congestive regional microcirculation with low activity of components of microcirculatory bed, venous blood congestion, weak blood flow and tissue ischemia. High informative value of the method and its availability was shown by comparison of LDF-grants on treatment day 7 and 14. CONCLUSION: High informative value of LDF procedure is found in diagnosis of vascular and intravascular microcirculatory disorders in patients with bronchopulmonary pathology.


To clarify the role of previous lung diseases (chronic bronchitis, emphysema, pneumonia, and tuberculosis) in the development of lung cancer, the authors conducted a pooled analysis of studies in the International Lung Cancer Consortium. Seventeen studies including 24,607 cases and 81,829 controls (noncases), mainly conducted in Europe and North America, were included (1984-2011). Using self-reported data on previous diagnoses of lung diseases, the authors derived study-specific effect estimates by means of logistic regression models or Cox proportional hazards models adjusted for age, sex, and cumulative tobacco smoking. Estimates were pooled using random-effects models. Analyses stratified by smoking status and histology were also conducted. A history of emphysema conferred a 2.44-fold increased risk of lung cancer (95% confidence interval (CI): 1.64, 3.62 (16 studies)). A history of chronic bronchitis conferred a relative risk of 1.47 (95% CI: 1.29, 1.68 (13 studies)). Tuberculosis (relative risk = 1.48, 95% CI: 1.17, 1.87 (16 studies)) and pneumonia (relative risk = 1.57, 95% CI: 1.22, 2.01 (12 studies)) were also associated with lung cancer risk. Among never smokers, elevated risks were observed for emphysema, pneumonia, and tuberculosis. These results suggest that previous lung diseases influence lung cancer risk independently of tobacco use and that these diseases are important for assessing individual risk.


OBJECTIVES: To identify factors associated with late recovery (/>= 8 days from exacerbation start) in patients with acute exacerbations of chronic bronchitis/COPD (AECB/AECOPD). METHODS: An international, observational, non-interventional study in outpatients with AECB/AECOPD who received treatment for their exacerbation with the antibiotic moxifloxacin. Factors analyzed for late recovery included patient demographic characteristics, geographic region and disease severity. Additionally, logistic regression analysis was undertaken to identify factors associated with late recovery. RESULTS: The analysis population was 40,435 patients aged />35 years, from Asia-Pacific, Europe, the Americas and Middle East/Africa. Most were male (63.1%), mean age 60.4 years and current or ex-smokers (60.6%) with history of >/= 2 exacerbations in the previous year. Patients who underwent spirometry (n = 6408, 19.7%) had moderate airflow obstruction (mean FEV(1) 1.7 L). Both clinicians and patients reported that moxifloxacin provided clinical improvement in a mean of 3 days and recovery in 6 days. Clinical factors significantly associated with late recovery were: age >/= 65 years, duration of chronic bronchitis >10 years, cardiac comorbidity, >3 exacerbations in the previous 12 months, current exacerbation type (Anthonisen I/II) and hospitalization in the last 12 months. CONCLUSIONS: In a large cohort of patients, all treated with the same antibiotic for an exacerbation of chronic
bronchitis or COPD, the main factors associated with late recovery (≥ 8 days) were: older age, history of frequent exacerbations, current exacerbation type of Anthonisen I/II, history of prior hospitalizations and cardiac comorbid conditions.

Cancer du poumon


To clarify the role of previous lung diseases (chronic bronchitis, emphysema, pneumonia, and tuberculosis) in the development of lung cancer, the authors conducted a pooled analysis of studies in the International Lung Cancer Consortium. Seventeen studies including 24,607 cases and 81,829 controls (noncases), mainly conducted in Europe and North America, were included (1984-2011). Using self-reported data on previous diagnoses of lung diseases, the authors derived study-specific effect estimates by means of logistic regression models or Cox proportional hazards models adjusted for age, sex, and cumulative tobacco smoking. Estimates were pooled using random-effects models. Analyses stratified by smoking status and histology were also conducted. A history of emphysema conferred a 2.44-fold increased risk of lung cancer (95% confidence interval (CI): 1.64, 3.62 (16 studies)). A history of chronic bronchitis conferred a relative risk of 1.47 (95% CI: 1.29, 1.68 (13 studies)). Tuberculosis (relative risk = 1.48, 95% CI: 1.17, 1.87 (16 studies)) and pneumonia (relative risk = 1.57, 95% CI: 1.22, 2.01 (12 studies)) were also associated with lung cancer risk. Among never smokers, elevated risks were observed for emphysema, pneumonia, and tuberculosis. These results suggest that previous lung diseases influence lung cancer risk independently of tobacco use and that these diseases are important for assessing individual risk.


BACKGROUND: In this study we propose improvements to the method of elaborating deprivation indexes. First, in the selection of the variables, we incorporated a wider range of both objective and subjective measures. Second, in the statistical methodology, we used a distance indicator instead of the standard aggregating method principal component analysis. Third, we propose another methodological improvement, which consists in the use of a more robust statistical method to assess the relationship between deprivation and health responses in ecological regressions. METHODS: We conducted an ecological small-area analysis based on the residents of the Metropolitan region of Barcelona in the period 1994-2007. Standardized mortality rates, stratified by sex, were studied for four mortality causes: tumor of the bronquial, lung and trachea, diabetes mellitus type II, breast cancer, and prostate cancer. Socioeconomic conditions were summarized using a deprivation index. Sixteen socio-demographic variables available in the Spanish Census of Population and Housing were included. The deprivation index was constructed by aggregating the above-mentioned variables using the distance indicator, DP2. For the
estimation of the ecological regression we used hierarchical Bayesian models with some improvements. RESULTS: At greater deprivation, there is an increased risk of dying from diabetes for both sexes and of dying from lung cancer for men. On the other hand, at greater deprivation, there is a decreased risk of dying from breast cancer and lung cancer for women. We did not find a clear relationship in the case of prostate cancer (presenting an increased risk but only in the second quintile of deprivation). CONCLUSIONS: We believe our results were obtained using a more robust methodology. First off, we have built a better index that allows us to directly collect the variability of contextual variables without having to use arbitrary weights. Secondly, we have solved two major problems that are present in spatial ecological regressions, i.e. those that use spatial data and, consequently, perform a spatial adjustment in order to obtain consistent estimators.


BACKGROUND: Exposure to occupational carcinogens is an important preventable cause of lung cancer. Most of the previous studies were in highly exposed industrial cohorts. Our aim was to quantify lung cancer burden attributable to occupational carcinogens in a general population. METHODS: We applied a new job-exposure matrix (JEM) to translate lifetime work histories, collected by personal interview and coded into standard job titles, into never, low and high exposure levels for six known/suspected occupational lung carcinogens in the Environment and Genetics in Lung cancer Etiology (EAGLE) population-based case-control study, conducted in Lombardy region, Italy, in 2002-05. Odds ratios (ORs) and 95% confidence intervals (CIs) were calculated in men (1537 cases and 1617 controls), by logistic regression adjusted for potential confounders, including smoking and co-exposure to JEM carcinogens. The population attributable fraction (PAF) was estimated as impact measure. RESULTS: Men showed an increased lung cancer risk even at low exposure to asbestos (OR: 1.76; 95% CI: 1.42-2.18), crystalline silica (OR: 1.31; 95% CI: 1.00-1.71) and nickel-chromium (OR: 1.18; 95% CI: 0.90-1.53); risk increased with exposure level. For polycyclic aromatic hydrocarbons, an increased risk (OR: 1.64; 95% CI: 0.99-2.70) was found only for high exposures. The PAFs for any exposure to asbestos, silica and nickel-chromium were 18.1, 5.7 and 7.0%, respectively, equivalent to an overall PAF of 22.5% (95% CI: 14.1-30.0). This corresponds to about 1016 (95% CI: 637-1355) male lung cancer cases/year in Lombardy. CONCLUSIONS: These findings support the substantial role of selected occupational carcinogens on lung cancer burden, even at low exposures, in a general population.


Quantitative risk assessment proceeds by first estimating a dose-response model and then inverting this model to estimate the dose that corresponds to some prespecified level of response. The parametric form of the dose-response model often plays a large role in determining this dose. Consequently, the choice of the proper model is a major source of uncertainty when estimating such endpoints. While methods exist that attempt to incorporate the uncertainty by forming an estimate based upon all models considered, such methods may fail when the true model is on the edge of the space of models considered and cannot be formed from a weighted sum of constituent models. We propose a semiparametric model for dose-response data as well as deriving a dose estimate associated with a particular response. In this model formulation, the only restriction on the model form is that it is monotonic. We use this model to estimate the dose-response curve from a long-term cancer bioassay, as well as compare this to methods currently used to account for model uncertainty. A small simulation study is conducted showing that the method is superior to model averaging when estimating exposure that arises from a quantal-linear dose-response mechanism, and is similar to these methods when investigating nonlinear dose-response patterns.
(1) MUSCH DC, GARDNER TW. *Diabetes and nonrefractive visual impairment: the young have it*. JAMA. 2012 Dec. 12, vol. 308, n° 22, pp.2403-2404


CONTEXT: Over the past decade, chronic illnesses with ophthalmic sequelae such as diabetes and diabetic retinopathy have increased. OBJECTIVES: To estimate prevalence of nonrefractive visual impairment and to describe its relationship with demographic and systemic risk factors including diagnosed diabetes. DESIGN, SETTING, AND PARTICIPANTS: The National Health and Nutrition Examination Survey (NHANES) examined a representative sample of the US noninstitutionalized population. In 1999-2002 and 2005-2008, 9471 and 10,480 participants aged 20 years or older received questionnaires, laboratory tests, and physical examinations. Visual acuity of less than 20/40 aided by autorefractor was classified as nonrefractive visual impairment. MAIN OUTCOME MEASURE: Nonrefractive visual impairment. RESULTS: Weighted prevalence of nonrefractive visual impairment increased 21% among US adults aged 20 years and older from 1.4% in 1999-2002 to 1.7% in 2005-2008 (P = .03); and increased 40% among non-Hispanic whites aged 20-39 years from 0.5% to 0.7% (P = .008). In multivariable analyses, statistically significant risk factors for nonrefractive visual impairment in 1999-2002 included age (per year odds ratio [OR], 1.07; 95% CI, 1.05-1.09), poverty (OR, 2.18; 95% CI, 1.31-3.64), lack of insurance (OR, 1.85; 95% CI, 1.16-2.95), and diabetes with 10 or more years since diagnosis (OR, 1.93; 95% CI, 1.15-3.25). In 2005-2008, risk factors included age (OR, 1.05; 95% CI, 1.04-1.07), poverty (OR, 2.23; 95% CI, 1.55-3.22), education less than high school (OR, 2.11; 95% CI, 1.54-2.90), and diabetes with 10 or more years since diagnosis (OR, 2.67; 95% CI, 1.64-4.37). Prevalence of diabetes with 10 or more years since diagnosis increased 22% overall from 2.8% to 3.6% (P = .02); and 133% among non-Hispanic whites aged 20-39 years from 0.3% to 0.7% (P < .001). CONCLUSION: Prevalence of nonrefractive visual impairment was significantly higher in 2005-2008 than in 1999-2002 and may be attributable, in part, to higher prevalence of diabetes, an associated risk factor that increased in prevalence during this time period.


(4) JORNAYVAZ FR. *Weight and mortality in adults with diabetes*. JAMA. 2012 Nov. 28, vol. 308, n° 20, pp.2080-2081

BACKGROUND: A reduction in the availability of cholesterol may limit the cellular proliferation required for cancer growth and metastasis. We tested the hypothesis that statin use begun before a cancer diagnosis is associated with reduced cancer-related mortality. METHODS: We assessed mortality among patients from the entire Danish population who had received a diagnosis of cancer between 1995 and 2007, with follow-up until December 31, 2009. Among patients 40 years of age or older, 18,721 had used statins regularly before the cancer diagnosis and 277,204 had never used statins. RESULTS: Multivariable-adjusted hazard ratios for statin users, as compared with patients who had never used statins, were 0.85 (95% confidence interval [CI], 0.83 to 0.87) for death from any cause and 0.85 (95% CI, 0.82 to 0.87) for death from cancer. Adjusted hazard ratios for death from any cause according to the defined daily statin dose (the assumed average maintenance dose per day) were 0.82 (95% CI, 0.81 to 0.85) for a dose of 0.01 to 0.75 defined daily dose per day, 0.87 (95% CI, 0.83 to 0.89) for 0.76 to 1.50 defined daily dose per day, and 0.87 (95% CI, 0.81 to 0.91) for higher than 1.50 defined daily dose per day; the corresponding hazard ratios for death from cancer were 0.83 (95% CI, 0.81 to 0.86), 0.87 (95% CI, 0.83 to 0.91), and 0.87 (95% CI, 0.81 to 0.92). The reduced cancer-related mortality among statin users as compared with those who had never used statins was observed for each of 13 cancer types.
CONCLUSIONS: Statin use in patients with cancer is associated with reduced cancer-related mortality. This suggests a need for trials of statins in patients with cancer.


BACKGROUND: This study was undertaken to determine whether use of the direct renin inhibitor aliskiren would reduce cardiovascular and renal events in patients with type 2 diabetes and chronic kidney disease, cardiovascular disease, or both. METHODS: In a double-blind fashion, we randomly assigned 8561 patients to aliskiren (300 mg daily) or placebo as an adjunct to an angiotensin-converting-enzyme inhibitor or an angiotensin-receptor blocker. The primary end point was a composite of the time to cardiovascular death or a first occurrence of cardiac arrest with resuscitation; nonfatal myocardial infarction; nonfatal stroke; unplanned hospitalization for heart failure; end-stage renal disease, death attributable to kidney failure, or the need for renal-replacement therapy with no dialysis or transplantation available or initiated; or doubling of the baseline serum creatinine level. RESULTS: The trial was stopped prematurely after the second interim efficacy analysis. After a median follow-up of 32.9 months, the primary end point had occurred in 783 patients (18.3%) assigned to aliskiren as compared with 732 (17.1%) assigned to placebo (hazard ratio, 1.08; 95% confidence interval [CI], 0.98 to 1.20; P=0.12). Effects on secondary renal end points were similar. Systolic and diastolic blood pressures were lower with aliskiren (between-group differences, 1.3 and 0.6 mm Hg, respectively) and the mean reduction in the urinary albumin-to-creatinine ratio was greater (between-group difference, 14 percentage points; 95% CI, 11 to 17). The proportion of patients with hyperkalemia (serum potassium level, >/=6 mmol per liter) was significantly higher in the aliskiren group than in the placebo group (11.2% vs. 7.2%), as was the proportion with reported hypotension (12.1% vs. 8.3%) (P<0.001 for both comparisons). CONCLUSIONS: The addition of aliskiren to standard therapy with renin-angiotensin system blockade in patients with type 2 diabetes who are at high risk for cardiovascular and renal events is not supported by these data and may even be harmful. (Funded by Novartis; ALTITUDE ClinicalTrials.gov number, NCT00549757.)


BACKGROUND: The increasing prevalence of type 2 diabetes poses a major public health challenge. Population-based screening and early treatment for type 2 diabetes could reduce this growing burden. However, uncertainty persists around the benefits of screening for type 2 diabetes. We assessed the effect of a population-based stepwise screening programme on mortality. METHODS: In a pragmatic parallel group, cluster-randomised trial, 33 general practices in eastern England were randomly assigned by the method of minimisation in an unbalanced design to: screening followed by intensive multifactorial treatment for people diagnosed with diabetes (n=15); screening plus routine care of diabetes according to national guidelines (n=13); and a no-screening control group (n=5). The study population consisted of 20,184 individuals aged 40-69 years (mean 58 years), at high risk of prevalent undiagnosed diabetes, on the basis of...
a previously validated risk score. In screening practices, individuals were invited to a stepwise programme including random capillary blood glucose and glycated haemoglobin (HbA1c) tests, a fasting capillary blood glucose test, and a confirmatory oral glucose tolerance test. The primary outcome was all-cause mortality. All participants were flagged for mortality surveillance by the England and Wales Office of National Statistics. Analysis was by intention-to-screen and compared all-cause mortality rates between screening and control groups. This study is registered, number ISRCTN86769081. FINDINGS: Of 16,047 high-risk individuals in screening practices, 15,089 (94%) were invited for screening during 2001-06, 11,737 (73%) attended, and 466 (3%) were diagnosed with diabetes. 4137 control individuals were followed up. During 184,057 person-years of follow up (median duration 9.6 years [IQR 8.9-9.9]), there were 1532 deaths in the screening practices and 377 in control practices (mortality hazard ratio [HR] 1.06, 95% CI 0.90-1.25). We noted no significant reduction in cardiovascular (HR 1.02, 95% CI 0.75-1.38), cancer (1.08, 0.90-1.30), or diabetes-related mortality (1.26, 0.75-2.10) associated with invitation to screening. INTERPRETATION: In this large UK sample, screening for type 2 diabetes in patients at increased risk was not associated with a reduction in all-cause, cardiovascular, or diabetes-related mortality within 10 years. The benefits of screening might be smaller than expected and restricted to individuals with detectable disease. FUNDING: Wellcome Trust; UK Medical Research Council; National Health Service research and development support; UK National Institute for Health Research; University of Aarhus, Denmark; BioRad


The prevalence of type 2 diabetes is rapidly increasing, with severe socioeconomic impacts. Excess lipid deposition in peripheral tissues impairs insulin sensitivity and glucose uptake, and has been proposed to contribute to the pathology of type 2 diabetes. However, few treatment options exist that directly target ectopic lipid accumulation. Recently it was found that vascular endothelial growth factor B (VEGF-B) controls endothelial uptake and transport of fatty acids in heart and skeletal muscle. Here we show that decreased VEGF-B signalling in rodent models of type 2 diabetes restores insulin sensitivity and improves glucose tolerance. Genetic deletion of Vegfb in diabetic db/db mice prevented ectopic lipid deposition, increased muscle glucose uptake and maintained normoglycaemia. Pharmacological inhibition of VEGF-B signalling by antibody administration to db/db mice enhanced glucose tolerance, preserved pancreatic islet architecture, improved beta-cell function and ameliorated dyslipidaemia, key elements of type 2 diabetes and the metabolic syndrome. The potential use of VEGF-B neutralization in type 2 diabetes was further elucidated in rats fed a high-fat diet, in which it normalized insulin sensitivity and increased glucose uptake in skeletal muscle and heart. Our results demonstrate that the vascular endothelium can function as an efficient barrier to excess muscle lipid uptake even under conditions of severe obesity and type 2 diabetes, and that this barrier can be maintained by
inhibition of VEGF-B signalling. We propose VEGF-B antagonism as a novel pharmacological approach for type 2 diabetes, targeting the lipid-transport properties of the endothelium to improve muscle insulin sensitivity and glucose disposal.


Assessment and characterization of gut microbiota has become a major research area in human disease, including type 2 diabetes, the most prevalent endocrine disease worldwide. To carry out analysis on gut microbial content in patients with type 2 diabetes, we developed a protocol for a metagenome-wide association study (MGWAS) and undertook a two-stage MGWAS based on deep shotgun sequencing of the gut microbial DNA from 345 Chinese individuals. We identified and validated approximately 60,000 type-2-diabetes-associated markers and established the concept of a metagenomic linkage group, enabling taxonomic species-level analyses. MGWAS analysis showed that patients with type 2 diabetes were characterized by a moderate degree of gut microbial dysbiosis, a decrease in the abundance of some universal butyrate-producing bacteria and an increase in various opportunistic pathogens, as well as an enrichment of other microbial functions conferring sulphate reduction and oxidative stress resistance. An analysis of 23 additional individuals demonstrated that these gut microbial markers might be useful for classifying type 2 diabetes.


BACKGROUND: Chronic kidney disease is characterised by low estimated glomerular filtration rate (eGFR) and high albuminuria, and is associated with adverse outcomes. Whether these risks are modified by diabetes is unknown. METHODS: We did a meta-analysis of studies selected according to Chronic Kidney Disease Prognosis Consortium criteria. Data transfer and analyses were done between March, 2011, and June, 2012. We used Cox proportional hazards models to estimate the hazard ratios (HR) of mortality and end-stage renal disease (ESRD) associated with eGFR and albuminuria in individuals with and without diabetes. FINDINGS: We analysed data for 1,024,977 participants (128,505 with diabetes) from 30 general population and high-risk cardiovascular cohorts and 13 chronic kidney disease cohorts. In the combined general population and high-risk cohorts with data for all-cause mortality, 75,306 deaths occurred during a mean follow-up of 8.5 years (SD 5.0). In the 23 studies with data for cardiovascular mortality, 21,237 deaths occurred from cardiovascular disease during a mean follow-up of 9.2 years (SD 4.9). In the general and high-risk cohorts, mortality risks were 1.2-1.9 times higher for participants with diabetes than for those without diabetes across the ranges of eGFR and albumin-to-creatinine ratio (ACR). With fixed eGFR and ACR reference points in the diabetes and no diabetes groups, HR of mortality outcomes according to lower eGFR and higher ACR were much the same in participants with and without diabetes (eg, for all-cause mortality at eGFR 45 mL/min per 1.73 m(2) [vs 95 mL/min per 1.73 m(2)], HR 1.35; 95% CI 1.18-1.55; vs 1.33; 1.19-1.48 and at ACR 30 mg/g [vs 5 mg/g], 1.50; 1.35-1.65 vs 1.52; 1.38-1.67). The overall interactions were not significant. We identified much the same findings for ESRD in the chronic kidney disease cohorts. INTERPRETATION: Despite higher risks for mortality and ESRD in diabetes, the relative risks of these outcomes by eGFR and ACR are much the same irrespective of the presence or absence of diabetes, emphasising the importance of kidney disease as a predictor of clinical outcomes. FUNDING: US National Kidney Foundation.

BACKGROUND: Language barrier is an important determinant of health care access and health. We examined the associations of English proficiency with type-2 diabetes (T2DM) and diabetic retinopathy (DR) in Asian Indians living in Singapore, an urban city where English is the predominant language of communication. METHODS: This was a population-based, cross-sectional study. T2DM was defined as HbA1c ≥6.5%, use of diabetic medication or a physician diagnosis of diabetes. Retinal photographs were graded for the severity of DR including vision-threatening DR (VTDR). Presenting visual impairment (VI) was defined as LogMAR visual acuity > 0.30 in the better-seeing eye. English proficiency at the time of interview was assessed.

RESULTS: The analyses included 2,289 (72.1%) English-speaking and 885 (27.9%) Tamil-speaking Indians. Tamil-speaking Indians had significantly higher prevalence of T2DM (46.2 vs. 34.7%, p < 0.001) and, among those with diabetes, higher prevalence of DR (36.0 vs. 30.6%, p < 0.001), VTDR (11.0 vs. 6.5%, p < 0.001), and VI (32.4 vs. 14.6%) than English-speaking Indians. Oaxaca decomposition analyses showed that the language-related discrepancies (defined as the difference in prevalence between persons speaking different languages) in T2DM, DR, and VTDR could not be fully explained by socioeconomic measures. CONCLUSIONS: In an English dominant society, Tamil-speaking Indians are more likely to have T2DM and diabetic retinopathy. Social policies and health interventions that address language-related health disparities may help reduce the public health impact of T2DM in societies with heterogeneous populations.


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RESULTS: The analyses included 2,289 (72.1%) English-speaking and 885 (27.9%) Tamil-speaking Indians. Tamil-speaking Indians had significantly higher prevalence of T2DM (46.2 vs. 34.7%, p < 0.001) and, among those with diabetes, higher prevalence of DR (36.0 vs. 30.6%, p < 0.001), VTDR (11.0 vs. 6.5%, p < 0.001), and VI (32.4 vs. 14.6%) than English-speaking Indians. Oaxaca decomposition analyses showed that the language-related discrepancies (defined as the difference in prevalence between persons speaking different languages) in T2DM, DR, and VTDR could not be fully explained by socioeconomic measures. CONCLUSIONS: In an English dominant society, Tamil-speaking Indians are more likely to have T2DM and diabetic retinopathy. Social policies and health interventions that address language-related health disparities may help reduce the public health impact of T2DM in societies with heterogeneous populations.


The hemochromatosis gene (HFE) has been involved in the etiology of type 2 diabetes mellitus and investigated in numerous epidemiologic studies. The current meta-analysis was conducted to evaluate the gene-disease association in relevant studies. Electronic literature search was performed on June 18, 2011, from databases of PubMed/MEDLINE, EMBASE, and HuGE Navigator. Articles were inspected by 2 authors independently, and data were extracted by identical extraction form. A total of 5,528 type 2 diabetes cases and 6,920 controls in relation to HFE polymorphisms (a cysteine to tyrosine substitution at amino acid position 282 (C282Y) and a histidine to aspartate substitution at amino acid position 63 (H63D)) were included in the meta-analysis (1997-2011). A fixed- or random-effect model was used to calculate the pooled odds ratios based on the results from the heterogeneity tests. An increased odds ratio for type 2 diabetes mellitus was observed in persons carrying a D allele at the H63D polymorphism compared with those with an H allele (odds ratio (OR) = 1.21, 95% confidence interval (CI): 1.03, 1.41; P = 0.02). Moreover, carriers of a D allele had a modestly increased risk compared with persons with the wild genotype (OR = 1.12, 95% CI: 1.00, 1.25; P = 0.04). The C282Y variant was not significantly associated with diabetes risk. In summary, persons with a D allele may have a moderately increased risk of type 2 diabetes mellitus.


BACKGROUND: In this study we propose improvements to the method of elaborating deprivation indexes. First, in the selection of the variables, we incorporated a wider range of both objective and subjective measures. Second, in the statistical methodology, we used a distance indicator instead of the standard aggregating method principal component analysis. Third, we propose another methodological improvement, which consists in the use of a more robust statistical method to assess the relationship between deprivation and health responses in ecological regressions. METHODS: We conducted an ecological small-area analysis based on the residents of the Metropolitan region of Barcelona in the period 1994-2007. Standardized mortality rates, stratified by sex, were studied for four mortality causes: tumor of the bronquial, lung and trachea, diabetes mellitus type II, breast cancer, and prostate cancer. Socioeconomic conditions were summarized using a deprivation index. Sixteen socio-demographic variables available in the Spanish Census of Population and Housing were included. The deprivation index was constructed by aggregating the above-mentioned variables using the distance indicator, DP2. For the estimation of the ecological regression we used hierarchical Bayesian models with some improvements. RESULTS: At greater deprivation, there is an increased risk of dying from diabetes for both sexes and of dying from lung cancer for men. On the other hand, at greater deprivation, there is a decreased risk of dying from breast cancer and lung cancer for women. We did not find a clear relationship in the case of prostate cancer (presenting an increased risk but only in the second quintile of deprivation). CONCLUSIONS: We believe our results were obtained using a more robust methodology. First off, we have built a better index that allows us to directly collect the variability of contextual variables without having to use arbitrary weights. Secondly, we have solved two major problems that are present in spatial ecological regressions, i.e. those that use spatial data and, consequently, perform a spatial adjustment in order to obtain consistent estimators.


BACKGROUND: Diabetes mellitus has reached epidemic proportions worldwide. South Asians are known to have an increased predisposition for diabetes which has become an important health concern in the region. We discuss the prevalence of pre-diabetes and diabetes in South Asia and explore the differential risk factors reported. METHODS: Prevalence data were obtained by searching the Medline(R) database with; ‘prediabetes’ and ‘diabetes mellitus’ (MeSH major topic) and ‘Epidemology/EP’ (MeSH subheading). Search limits were articles in English, between 01/01/1980-31/12/2011, on human adults (>/=19 years). The conjunction of the above results was narrowed down with country names. RESULTS: The most recent reported prevalence of pre-diabetes:diabetes in regional countries were; Bangladesh-4.7%-8.5% (2004-2005;Rural), India-4.6%-12.5% (2007;Rural), Maldives-3.0%-3.7% (2004;National), Nepal-19.5%-9.5% (2007;Urban), Pakistan-3.0%-7.2% (2002;Rural), Sri Lanka-11.5%-10.3% (2005-2006;National). Urban populations demonstrated a higher prevalence of diabetes. An increasing trend in prevalence of diabetes was observed in urban/rural India and rural Sri Lanka. The diabetes epidemicity index decreased with the increasing prevalence of diabetes in respective countries. A high epidemicity index was seen in Sri Lanka (2005/2006-52.8%), while for other countries, the epidemicity index was comparatively low (rural India 2007-26.9%; urban India 2002/2005-31.3%, and urban Bangladesh-33.1%). Family history, urban residency, age, higher BMI, sedentary lifestyle, hypertension and waist-hip ratio were associated with an increased risks of diabetes. CONCLUSION: A significant epidemic of diabetes is present in the South Asian region with a
rapid increase in prevalence over the last two decades. Hence there is a need for urgent preventive and curative strategies


BACKGROUND: There has been an overall decrease in incident ischaemic heart disease (IHD), but the reduction in IHD risk factors has been greater among those with higher social position. Increased social inequalities in IHD mortality in Scandinavian countries is often referred to as the Scandinavian "public health puzzle". The objective of this study was to examine trends in absolute and relative educational inequalities in four modifiable ischaemic heart disease risk factors (smoking, diabetes, hypertension and high total cholesterol) over the last three decades among Norwegian middle-aged women and men. METHODS: Population-based, cross-sectional data from The Nord-Trondelag Health Study (HUNT): HUNT 1 (1984-1986), HUNT 2 (1995-1997) and HUNT 3 (2006-2008), women and men 40-59 years old. Educational inequalities were assessed using the Slope Index of Inequality (SII) and The Relative Index of Inequality (RII). RESULTS: Smoking prevalence increased for all education groups among women and decreased in men. Relative and absolute educational inequalities in smoking widened in both genders, with significantly higher absolute inequalities among women than men in the last two surveys. Diabetes prevalence increased in all groups. Relative inequalities in diabetes were stable, while absolute inequalities increased both among women (p = 0.05) and among men (p = 0.01). Hypertension prevalence decreased in all groups. Relative inequalities in hypertension widened over time in both genders. However, absolute inequalities in hypertension decreased among women (p = 0.05) and were stable among men (p = 0.33). For high total cholesterol relative and absolute inequalities remained stable in both genders. CONCLUSION: Widening absolute educational inequalities in smoking and diabetes over the last three decades gives rise to concern. The mechanisms behind these results are less clear, and future studies are needed to assess if educational inequalities in secondary prevention of IHD are larger compared to educational inequalities in primary prevention of IHD. Continued monitoring of IHD risk factors at the population level is therefore warranted. The results emphasise the need for public health efforts to prevent future burdens of life-style-related diseases and to avoid further widening in socioeconomic inequalities in IHD mortality in Norway, especially among women.


BACKGROUND: Unlike the older birth cohort (1943-65), the younger birth cohort (1966-79) has enjoyed much improved standards with dramatic developments in Korea. This article investigated the relationship between socio-economic position (SEP) and risk of high blood glucose, including impaired fasting glucose (IFG) and type 2 diabetes mellitus (T2D) by birth cohort. METHODS: Of the 11 830 persons, 9792 persons aged 30-64 years participated in National Health and Nutrition Examination Surveys. We categorized four SEP groups based on education level in childhood and adulthood within two birth cohorts. High blood glucose included IFG (n = 2594) and T2D (n = 738). Odds ratio (OR) and 95% confidence interval (CI) were estimated by logistic regression. RESULTS: There was a significantly higher risk of high blood glucose in the younger cohort than in the older cohort. In the younger cohort, the ORs for males of declining SEP and of stable low SEP were OR: 1.50 (95% CI 1.12-2.00) and OR: 1.45 (95% CI 1.08-1.93), respectively. After adjustments, corresponding ORs were 1.47 (95% CI 1.09-1.98) and 1.54 (95% CI 1.14-2.08), respectively. In younger women, the corresponding ORs were 1.68 (95% CI 1.17-2.41) and 1.87 (95% CI 1.30-2.69), respectively; however, obesity attenuated the former relationship. For women
in the older cohort, this inverse relationship was found only among those with a stable low SEP (OR 1.31, 95% CI 1.04-1.66); no significance was found after adjustments. There was no significant inverse relationship in the older cohort for men. CONCLUSIONS: The relationship between lower SEP and elevated risk of high blood glucose was stronger in the younger birth cohort, and obesity attenuated this inverse relationship in women only.

**Dépression**

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Limited research has examined the associations of stress, social support, and depression among mothers with young children over time. Longitudinal studies are needed to identify risk and protective factors for maternal depression given that depression can be cyclical and may affect women through the early years of their children's development. This study examined the relationships among stress, social support, and depressive symptoms in a national sample of low-income urban American women with young children. A secondary data analysis of the Fragile Families and Child Wellbeing Study, a national longitudinal panel study of nearly 5000 births across 20 cities with populations of 200,000 or more in the United States, was conducted. The analytic sample included all mothers (N = 3675) who completed assessments at baseline through year 5 of the study between 1998 and 2005. Multivariate models using generalized estimating equations were used to estimate the probability of being depressed as a function of stress-related risk factors, social support factors, and sociodemographic variables. The rate of depression each year ranged from 15% to 21%. The results suggest that stress related to economic hardship, parenting, and poor physical health increases the risk of depression among low-income urban mothers with young children. Instrumental and partner support were found to be potential protective factors in reducing the negative effects of stress, but only to a certain degree. Future
efforts are needed to strengthen social support and mitigate chronic stressors that contribute to mental health problems in low-income communities


Although socioeconomic status (SES) has been shown to be associated with susceptibility to involuntary job loss as well as with health, the ways in which individual SES indicators may moderate the job loss-health association remain underexplored. Using data from the Americans' Changing Lives study, we estimate the ways in which the association between job loss and depressive symptoms depends on five aspects of SES: education, income, occupational prestige, wealth, and homeownership. Our findings indicate that higher SES prior to job loss is not uniformly associated with fewer depressive symptoms. Higher education and lower prestige appear to buffer the health impacts of job loss, while financial indicators do not. These results have a number of implications for understanding the multidimensional role that social inequality plays in shaping the health effects of job loss.


Unemployment and underemployment have adverse mental and physical health consequences, such as increased stress and depression. Health damaging behaviors like unhealthy eating, smoking, and alcohol use may be used to cope, contributing to chronic disease risk. In this adverse economic climate, it is vital to understand the health implications of unemployment and underemployment as well as underlying mechanisms. A randomized household survey of adults in six low resource communities was conducted in New Haven, Connecticut in 2009, yielding a sample of 1205 (73% participation) racially diverse adults (61% Black, 20% Latino, 12% White) ages 18-65 (61% women). We used ANOVA to test group differences and structural equation modeling to test mediation. 14.5% were unemployed and looking for work, 18.4% worked part-time, 38.2% worked full-time. Those employed full-time reported the least damaging psychological factors and health behaviors: lowest levels of stress and depression, most healthy and least unhealthy eating, most physical activity, and lowest levels of smoking and drinking. Those unemployed part-time fell in the middle, and those unemployed fell on the unhealthy end of all psychological and behavioral factors. Stress significantly mediated the associations of full-time employment with frequency of unhealthy eating and physical activity, and amount of cigarette smoking and alcohol consumption. Depression significantly mediated the association of full-time employment with frequency of healthy eating. Compared to <10% nationwide, rates of unemployment in this sample were high. Both those unemployed and employed part-time reported adverse health behaviors as compared to those employed full-time, partially mediated by heightened stress and depression. It is vital for the health and well-being of the nation to increase not simply employment, but specifically full-time employment. Provision of mental health services to those unemployed and underemployed should be a priority to promote healthier lifestyles and prevent costly future chronic disease.


BACKGROUND: India has around 2.27 million adults living with HIV/AIDS who face several challenges in the medical management of their disease. Stigma, discrimination and psychosocial
issues are prevalent. The objective of the study was to determine the prevalence of severe stigma and to study the association between this, depression and the quality of life (QOL) of people living with HIV/AIDS (PLHA) in Tamil Nadu. METHODS: This was a community based cross sectional study carried out in seven districts of Tamil Nadu, India, among 400 PLHA in the year 2009. The following scales were used for stigma, depression and quality of life, Berger scale, Major Depression Inventory (MDI) scale and the WHO BREF scale. Both Stigma and QOL were classified as none, moderate or severe/poor based on the tertile cut off values of the scale scores. Depression was classified as none, mild, moderate and severe. Logistic regression analyses were performed to study the risk factors. RESULTS: Twenty seven per cent of PLHA had experienced severe forms of stigma. These were severe forms of personalized stigma (28.8%), negative self-image (30.3%), perceived public attitude (18.2%) and disclosure concerns (26%). PLHA experiencing severe depression were 12% and those experiencing poor quality of life were 34%. Poor QOL reported in the physical, psychological, social and environmental domains was 42.5%, 40%, 51.2% and 34% respectively. PLHA who had severe personalized stigma and negative self-image had 3.4 (1.6-7.0) and 2.1 (1.0-4.1) times higher risk of severe depression respectively (p < .001). PLHA who had severe depression had experienced 2.7(1.1-7.7) times significantly poorer QOL. CONCLUSIONS: Severe forms of stigma were equivalently prevalent among all the categories of PLHA. However, PLHA who had experienced severe depression had only developed poor QOL. A high level of social support was associated with a high level of QOL.

Etudes sur le tabagisme


Restrictions on smoking in public places have become increasingly widespread in the United States, particularly since the year 2005. National-scale studies in Europe and local-scale studies in the United States have found decreases in hospital admissions for acute myocardial infarction (AMI) following smoking bans. The authors analyzed AMI admission rates for the years 1999-2008 in 387 US counties that enacted comprehensive smoking bans across 9 US states, using a study population of approximately 6 million Medicare enrollees aged 65 years or older. Effects of smoking bans on AMI admissions were estimated by using Poisson regression with linear and nonlinear adjustment for secular trend and random effects at the county level. Under the assumption of linearity in the secular trend of declining AMI, smoking bans were associated with a statistically significant ban-associated decrease in admissions for AMI in the 12 months following the ban. However, the estimated effect was attenuated to nearly zero when the assumption of
linearity in the underlying trend was relaxed. This analysis demonstrates that estimation of potential health benefits associated with comprehensive smoking bans is challenged by the need to adjust for nonlinearity in secular trend


We assessed factors related to smoke-free policies among a cross-sectional, nationally representative, random-digit-dial sample (landline and cell phone) of US multiunit housing residents (n = 418). Overall, 29% reported living in smoke-free buildings, while 79% reported voluntary smoke-free home rules. Among those with smoke-free home rules, 44% reported secondhand smoke incursions in their unit. Among all respondents, 56% supported smoke-free building policy implementation. These findings suggest that smoke-free building policies are needed to protect multiunit housing residents from secondhand smoke in their homes


Unemployment and underemployment have adverse mental and physical health consequences, such as increased stress and depression. Health damaging behaviors like unhealthy eating, smoking, and alcohol use may be used to cope, contributing to chronic disease risk. In this adverse economic climate, it is vital to understand the health implications of unemployment and underemployment as well as underlying mechanisms. A randomized household survey of adults in six low resource communities was conducted in New Haven, Connecticut in 2009, yielding a sample of 1205 (73% participation) racially diverse adults (61% Black, 20% Latino, 12% White) ages 18-65 (61% women). We used ANOVA to test group differences and structural equation modeling to test mediation. 14.5% were unemployed and looking for work, 18.4% worked part-time, 38.2% worked full-time. Those employed full-time reported the least damaging psychological factors and health behaviors: lowest levels of stress and depression, most healthy and least unhealthy eating, most physical activity, and lowest levels of smoking and drinking. Those employed part-time fell in the middle, and those unemployed fell on the unhealthy end of all psychological and behavioral factors. Stress significantly mediated the associations of full-time employment with frequency of unhealthy eating and physical activity, and amount of cigarette smoking and alcohol consumption. Depression significantly mediated the association of full-time employment with frequency of healthy eating. Compared to <10% nationwide, rates of unemployment in this sample were high. Both those unemployed and employed part-time reported adverse health behaviors as compared to those employed full-time, partially mediated by heightened stress and depression. It is vital for the health and well-being of the nation to increase not simply employment, but specifically full-time employment. Provision of mental health services to those unemployed and underemployed should be a priority to promote healthier lifestyles and prevent costly future chronic disease


BACKGROUND: Despite the apparent decline in the popularity of roll-your-own (RYO) cigarettes over the past few decades, RYO tobacco products are widely available and used by a substantial number of adult smokers. Considering research has yet to examine the prevalence of RYO tobacco use among youth populations, this manuscript examines the prevalence of RYO tobacco use and factors associated with RYO use in a nationally representative sample of youth smokers
from Canada. METHODS: This study used data collected from 3,630 current smokers in grades 9 to 12 as part of the 2008-09 Canadian Youth Smoking Survey (YSS). Descriptive analyses of the sample demographic characteristics, smoking status, cigarettes per day, weekly spending money, and frequency of marijuana use were examined by RYO tobacco ever use and RYO tobacco current use. Two logistic regression models were used to examine factors associated with RYO tobacco ever use and RYO tobacco current use. RESULTS: We identified that 51.2% of current smokers were RYO ever users and 24.2% were RYO current users. The prevalence of RYO current users was highest in Atlantic Canada (40.1%) and lowest in Quebec (12.3%). RYO current users were more likely to be male (OR 1.27), to be daily smokers (OR 1.75), to use marijuana once a month or more (OR 2.74), and to smoke 11 or more cigarettes per day (OR 6.52). RYO current users were less likely to be in grade 11 (OR 0.65) or grade 12 (OR 0.40) and less likely to have between $20 to $100 (OR 0.44) or more than $100 (OR 0.45) of disposable income. CONCLUSIONS: Developing a better understanding of RYO tobacco use among youth is important for advancing population-level tobacco control prevention strategies and cessation programs. We identified that RYO tobacco use is not a negligible problem among Canadian youth. Ongoing research is needed to continue monitoring the prevalence of RYO use among youth and the factors associated with its use, but to also monitor if this more affordable tobacco product is being targeted to price sensitive youth smokers.


BACKGROUND: Tobacco smoking is a well-recognised risk factor for many diseases [1]. This study assesses the extent of smoking-attributable hospitalisation in the Northern Territory (NT) Aboriginal and non-Aboriginal populations, and examines smoking-attributable hospitalisation trends for the years 1998/99 to 2008/09. METHODS: Hospital discharge data were used for the analysis. The proportion of conditions attributable to tobacco smoking was calculated using the aetiological fraction method. Age-adjusted smoking-attributable hospitalisation rates were calculated to describe the impact of tobacco smoking on the health of Territorians. A negative binominal regression model was applied to examine trends in smoking-attributable hospitalisations. RESULTS: Aboriginal Territorians were found to have higher rates of smoking-attributable hospitalisation, with Aboriginal males more than three times and Aboriginal females more than four times more likely to be hospitalised for smoking-attributable conditions than their non-Aboriginal counterparts. The age-adjusted hospitalisation rate for Aboriginal males increased by 31% and for Aboriginal females by 18% during the study period. There were more modest increases for NT non-Aboriginal males and females (5% and 17% respectively). The increase among Aboriginal males occurred up until 2005/06 followed by moderation in the trend. There were small reductions in smoking-attributable hospitalisation rates among all populations in younger age groups (less than 25 years). CONCLUSIONS: Aboriginal Territorians experience much higher smoking-attributable hospitalisation rates than non-Aboriginal Territorians. The scale of the smoking burden and suggestion of recent moderation among Aboriginal men reinforce the importance of tobacco control interventions that are designed to meet the needs of the NT's diverse population groups. Preventing smoking and increasing smoking cessation rates remain priorities for public health interventions in the NT.


Little research has been conducted on the influence of macroeconomic environments on smoking among blue-collar workers, a group with high smoking prevalence and that is especially vulnerable to the effects of changing economic circumstances. Using data from 52,418
construction workers in the Tobacco Use Supplement to the United States Current Population Survey, we examined the association of labor market shock, cigarette prices, and state antismoking sentiments with smoking status and average number of cigarettes smoked daily. Data analysis included the use of multiple linear and logistic regressions, which employed the sampling and replicate weights to account for sampling design. Unemployed, American-Indian, lower-educated and lower-income workers had higher smoking rates. Labor market shock had a quadratic association, which was non-significant for smoking status and significant for number of cigarettes. The association of cigarette prices with smoking status became non-significant after adjusting for state-level antismoking sentiment. State-level antismoking sentiment had significant quadratic association with smoking status among employed workers and significant quadratic association with number of cigarettes for all smokers. The study highlights how both workplace-based smoking cessation interventions and antismoking sentiments could further contribute to disparities in smoking by employment status.


BACKGROUND: The aim of the study was, despite the special characteristics of prisons, to identify the features which led prisoners who attended the Smoking Cessation Centre at the Kassavetia Detention Centre in Volos (region of Thessaly, in the central part of mainland Greece) to quit smoking. METHODS: Personal interviews with 204 male prisoners irrespective of smoking habits over the period June 2008 to December 2010 were obtained. Information about medical history, history of tobacco use and addiction to narcotic use was obtained and imprisonment status was recorded. Pharmaceutical treatment (Varenicline) and counselling or only counselling were suggested as alternative strategies to them in order to help quit smoking. SPSS v15.0 software was employed, descriptive statistics were used, and a X(2) independence test and Student's t-test were performed. RESULTS: Of the sample examined, 75.5% (154) were smokers. They were mainly Greeks (51.5%), single (53.4%) and had not gratuated from a high school (secondary education level) (70.6%). 59.75% begun smoking early (\(<=14\) years of age ) and 64.9% were highly addicted according to Fagerstrom Tolerance Questionnaire. 74% (114) of all smokers at the prison attended the Smoking Cessation Centre. Of them, 30.7% were able to quit smoking at 3 months but 1 year later there were 20.2% ex-smokers. The key characteristics of those who were able to be ex-smokers were a change in smoking habits (decreased) compared to when free (\(p = .001\)), previous attempts to quit (while incarcerated and in general) (\(p = .001\)), average dependence levels (\(p < .001\)), started smoking after 21 years of age (\(p = .032\)), no history of addictive substance use (\(p = .029\)), being already prisoners for a longer period of time (\(p = .019\)), a limited number (3.9 +/- 3.4) of prisoners per cell (\(p < .001\)) and in particular a limited number (2.8 +/- 3.2) of smokers in the cell (\(p < .001\)). CONCLUSIONS: Average dependence, a past free of addictive substance abuse and a better environment of daily living for certain prisoners (as far as the number of cellmates was concerned) had a catalytic impact on prisoners finally managed to quit smoking.


BACKGROUND: The study was set up to identify the extent and nature of difficulty with activities of daily living (disabilities) among elderly village residents of Bangladesh, to describe help currently given and to identify possible interventions. It was carried out at Gonoshasthaya Kendra (GK), a community development organization responsible for the health care of 600 villages with a population of some 1.5 million. METHODS: A survey card was designed and piloted using 12 questions on disability, elaborated from the Washington Group Disability questions, together with a checklist of health problems. A survey was carried out in 2010 in 535 villages under the care of
GK since 2005, with village paramedics interviewing residents believed to be age 60 years or older. Respondents were matched where possible to data from the 2005 GK household census, giving data on education, occupation, socioeconomic group and smoking habit. RESULTS: Survey cards were completed for 43417 residents of which 17346 were matched to residents recorded in the GK census as born \( \leq 1945 \). The proportion reporting 'much difficulty' on one or more functional capacities increased steadily with age, reaching 55\% (1796/3620) among those \( \geq 85 \) years. Difficulties most frequently reported were lifting and carrying, vision and going outside the home. At all ages women were more likely to report 'much difficulty' than men (OR = 1.43 (1.35 to 1.48)), with widows and the illiterate at greater risk. Health problems, particularly hemiplegia, resting tremor, urinary incontinence and depression were strongly related to the 12 disabilities assessed. Help came almost entirely from family members; of 11211 villagers with 'much difficult' on at least one functional capacity, only 15 reported getting help outside the family. CONCLUSIONS: Disabled elderly residents were dependent on the family for help but, with family cohesiveness under threat from migration to the city, there is a pressing need for the development and critical evaluation of community-based interventions designed specifically for the elderly in poor rural societies. New approaches to training and practice will be needed to integrate such disability management into primary care.


We propose guidelines to evaluate the cumulative evidence of gene-environment (G x E) interactions in the causation of human cancer. Our approach has its roots in the HuGENet and IARC Monographs evaluation processes for genetic and environmental risk factors, respectively, and can be applied to common chronic diseases other than cancer. We first review issues of definitions of G x E interactions, discovery and modelling methods for G x E interactions, and issues in systematic reviews of evidence for G x E interactions, since these form the foundation for appraising the credibility of evidence in this contentious field. We then propose guidelines that include four steps: (i) score the strength of the evidence for main effects of the (a) environmental exposure and (b) genetic variant; (ii) establish a prior score category and decide on the pattern of interaction to be expected; (iii) score the strength of the evidence for interaction between the environmental exposure and the genetic variant; and (iv) examine the overall plausibility of interaction by combining the prior score and the strength of the evidence and interpret results. We finally apply the scheme to the interaction between NAT2 polymorphism and tobacco smoking in determining bladder cancer risk.


BACKGROUND: There has been an overall decrease in incident ischaemic heart disease (IHD), but the reduction in IHD risk factors has been greater among those with higher social position. Increased social inequalities in IHD mortality in Scandinavian countries is often referred to as the Scandinavian "public health puzzle". The objective of this study was to examine trends in absolute and relative educational inequalities in four modifiable ischaemic heart disease risk factors (smoking, diabetes, hypertension and high total cholesterol) over the last three decades among Norwegian middle-aged women and men. METHODS: Population-based, cross-sectional data from The Nord-Trondelag Health Study (HUNT): HUNT 1 (1984-1986), HUNT 2 (1995-1997) and HUNT 3 (2006-2008), women and men 40-59 years old. Educational inequalities were assessed using the Slope Index of Inequality (SII) and The Relative Index of Inequality (RII). RESULTS:
Smoking prevalence increased for all education groups among women and decreased in men. Relative and absolute educational inequalities in smoking widened in both genders, with significantly higher absolute inequalities among women than men in the two last surveys. Diabetes prevalence increased in all groups. Relative inequalities in diabetes were stable, while absolute inequalities increased both among women (p = 0.05) and among men (p = 0.01). Hypertension prevalence decreased in all groups. Relative inequalities in hypertension widened over time in both genders. However, absolute inequalities in hypertension decreased among women (p = 0.05) and were stable among men (p = 0.33). For high total cholesterol relative and absolute inequalities remained stable in both genders. CONCLUSION: Widening absolute educational inequalities in smoking and diabetes over the last three decades gives rise to concern. The mechanisms behind these results are less clear, and future studies are needed to assess if educational inequalities in secondary prevention of IHD are larger compared to educational inequalities in primary prevention of IHD. Continued monitoring of IHD risk factors at the population level is therefore warranted. The results emphasise the need for public health efforts to prevent future burdens of life-style-related diseases and to avoid further widening in socioeconomic inequalities in IHD mortality in Norway, especially among women.


BACKGROUND: Exposure to occupational carcinogens is an important preventable cause of lung cancer. Most of the previous studies were in highly exposed industrial cohorts. Our aim was to quantify lung cancer burden attributable to occupational carcinogens in a general population.

METHODS: We applied a new job-exposure matrix (JEM) to translate lifetime work histories, collected by personal interview and coded into standard job titles, into never, low and high exposure levels for six known/suspected occupational lung carcinogens in the Environment and Genetics in Lung cancer Etiology (EAGLE) population-based case-control study, conducted in Lombardy region, Italy, in 2002-05. Odds ratios (ORs) and 95% confidence intervals (CIs) were calculated in men (1537 cases and 1617 controls), by logistic regression adjusted for potential confounders, including smoking and co-exposure to JEM carcinogens. The population attributable fraction (PAF) was estimated as impact measure.

RESULTS: Men showed an increased lung cancer risk even at low exposure to asbestos (OR: 1.76; 95% CI: 1.42-2.18), crystalline silica (OR: 1.31; 95% CI: 1.00-1.71) and nickel-chromium (OR: 1.18; 95% CI: 0.90-1.53); risk increased with exposure level. For polycyclic aromatic hydrocarbons, an increased risk (OR: 1.64; 95% CI: 0.99-2.70) was found only for high exposures. The PAFs for any exposure to asbestos, silica and nickel-chromium were 18.1, 5.7 and 7.0%, respectively, equivalent to an overall PAF of 22.5% (95% CI: 14.1-30.0). This corresponds to about 1016 (95% CI: 637-1355) male lung cancer cases/year in Lombardy. CONCLUSIONS: These findings support the substantial role of selected occupational carcinogens on lung cancer burden, even at low exposures, in a general population.


BACKGROUND: Maternal smoking during pregnancy is associated with reduced offspring birth length and has been postulated as a risk factor for obesity. Causality for obesity is not established. Causality is well-supported for birth length, but evidence on persistence of height deficits is inconsistent.

METHODS: We examined the association between maternal smoking during pregnancy and trajectories of offspring height (0-10 years, N = 9424), ponderal index (PI) (0-2 years, N = 9321) and body mass index (BMI) (2-10 years, N = 8887) in the Avon Longitudinal Study of Parents and Children. To strengthen inference, measured confounders were controlled for, maternal and partner smoking associations were compared, dose-response and associations with post-natal smoking were examined.

RESULTS: Maternal smoking during pregnancy was
associated with shorter birth length, faster height growth in infancy and slower growth in later childhood. By 10 years, daughters of women who smoke during pregnancy are on average 1.11 cm (SE = 0.27) shorter after adjustment for confounders and partner smoking; the difference is 0.22 cm (SE = 0.22) for partner's smoking. Maternal smoking was associated with lower PI at birth, faster PI increase in infancy, but not with BMI changes 2-10 years. Associations were stronger for maternal than partner smoking for PI at birth and PI changes in infancy, but not for BMI changes after 2 years. A similar dose-response in both maternal and partner smoking was seen for BMI change 2-10 years. CONCLUSION: Maternal smoking during pregnancy has an intrauterine effect on birth length, and possibly on adiposity at birth and changes in height and adiposity in infancy. We do not find evidence of a specific intrauterine effect on height or adiposity changes after the age of 2 years

Grippe A


Objectives. We estimated age-standardized ratios of infection and hospitalization among Canadian First Nations (FN) populations and compared their distributions with those estimated for non-FN populations in Manitoba, Canada. Methods. For the spring and fall 2009 waves of the H1N1 pandemic, we obtained daily numbers of laboratory-confirmed and hospitalized cases of H1N1 infection, stratified by 5-year age groups and FN status. We calculated age-standardized ratios with confidence intervals for each wave and compared ratios between age groups in each ethnic group and between the 2 waves for FN and non-FN populations. Results. Incidence and hospitalization ratios in all FN age groups during the first wave were significantly higher than those in non-FN age groups (P < .001). The highest ratios were observed in FN young children aged 0 to 4 years. During the second wave, these ratios tended to decrease in FN populations and increase in non-FN populations, especially among groups younger than 30 years. Conclusions. Incidence and hospitalization ratios in FN populations were higher than or equivalent to ratios in non-FN populations. Our findings support the need to develop targeted prevention and control strategies specifically for vulnerable FN and remote communities. (Am J Public Health. Published online ahead of print December 13, 2012: e1-e6. doi:10.2105/AJPH.2012.300820)


Exotic animal diseases (EADs) are characterized by their capacity to spread global distances, causing impacts on animal health and welfare with significant economic consequences. We offer a critique of current import risk analysis approaches employed in the EAD field, focusing on their capacity to assess complex systems at a policy level. To address the shortcomings identified, we propose a novel method providing a systematic analysis of the likelihood of a disease incursion, developed by reference to the multibarrier system employed for the United Kingdom. We apply the network model to a policy-level risk assessment of classical swine fever (CSF), a notifiable animal disease caused by the CSF virus. In doing so, we document and discuss a sequence of
analyses that describe system vulnerabilities and reveal the critical control points (CCPs) for intervention, reducing the likelihood of U.K. pig herds being exposed to the CSF virus.


OBJECTIVES: We implemented active surveillance for Guillain-Barre syndrome (GBS) following seasonal or H1N1 influenza vaccination among the Medicare population during the 2009-2010 influenza season. METHODS: We used weekly Medicare claims data to monitor vaccinations and subsequent hospitalizations with principal diagnosis code for GBS within 42 days. Group sequential testing assessed whether the observed GBS rate exceeded a critical limit based on the expected rate from 5 previous years adjusted for claims delay. We evaluated the lag between date of service and date of claims availability and used it for adjustment. RESULTS: By July 30, 2010 (after 26 interim surveillance tests), 14.0 million seasonal and 3.3 million H1N1 vaccinations had accrued. Taking into account claims delay appropriately lowered the critical limit during early monitoring. The observed GBS rate was below the critical limit throughout the surveillance. CONCLUSIONS: Medicare data contributed rapid safety monitoring among millions of 2009-2010 influenza vaccine recipients. Adjustment for claims delay facilitates early detection of potential safety issues. Although limited by lack of medical record review to confirm cases, this claims-based surveillance did not indicate a statistically significant elevated GBS rate following seasonal or H1N1 influenza vaccination.


In estimates of illness severity from the spring wave of the 2009 influenza A (H1N1) pandemic, reported case fatality proportions were less than 0.05%. In prior pandemics, subsequent waves of illness were associated with higher mortality. The authors evaluated the burden of the pandemic H1N1 (pH1N1) outbreak in metropolitan Atlanta, Georgia, in the fall of 2009, when increased influenza activity heralded the second wave of the pandemic in the United States. Using data from a community survey, existing surveillance systems, public health laboratories, and local hospitals, they estimated numbers of pH1N1-associated illnesses, emergency department (ED) visits, hospitalizations, intensive care unit (ICU) admissions, and deaths occurring in metropolitan Atlanta during the period August 16, 2009-September 26, 2009. The authors estimated 132,140 pediatric and 132,110 adult symptomatic cases of pH1N1 in metropolitan Atlanta during the investigation time frame. Among children, these cases were associated with 4,560 ED visits, 190 hospitalizations, 51 ICU admissions, and 4 deaths. Among adults, they were associated with 1,130 ED visits, 590 hospitalizations, 140 ICU admissions, and 63 deaths. The combined symptomatic case hospitalization proportion, case ICU admission proportion, and case fatality proportion were 0.281%, 0.069%, and 0.024%, respectively. Influenza burden can be estimated using existing data and local surveys. The increased severity reported for subsequent waves in past pandemics was not evident in this investigation. Nevertheless, the second pH1N1 pandemic wave led to substantial numbers of ED visits, hospitalizations, and deaths in metropolitan Atlanta.


OBJECTIVES: The purpose of our study was to more accurately characterize people reporting influenza-like illness (ILI) and evaluate trends in health care seeking and influenza diagnosis and
treatment during the 2009 influenza pandemic. METHODS: From September 2009 to March 2010, we ascertained ILI (fever with cough or sore throat), health care seeking, and clinical diagnosis and treatment of influenza with influenza antiviral drugs among adults in 51 jurisdictions, and ILI and health care seeking among children in 41 jurisdictions. RESULTS: Among 216,431 adults and 43,511 children, 8.1% and 28.4% reported ILI, respectively. ILI peaked during November interviews and was higher among young people and American Indian/Alaska Natives. Of those with ILI, 40% of adults and 56% of children reported seeking health care; 26% of adults who sought care reported receiving a diagnosis of influenza. Of adults reporting an influenza diagnosis, 36% were treated with influenza antiviral drugs; treatment was highest among adults aged 18 to 49 years. CONCLUSIONS: Analysis of ILI data from the Behavioral Risk Factor Surveillance System enabled a better understanding of the factors associated with self-reported ILI, health care seeking, and clinical influenza diagnosis and treatment, and will help inform year-to-year influenza trends


BACKGROUND: Prior to the availability of the specific pandemic vaccine, strategies to mitigate the impact of the disease typically involved antiviral treatment and "non-pharmaceutical" community interventions. However, compliance with these strategies is linked to risk perceptions, perceived severity and perceived effectiveness of the strategies. In 2010, we undertook a study to examine the knowledge, attitudes, risk perceptions, practices and barriers towards influenza and infection control strategies amongst domestic and international university students. METHODS: A study using qualitative methods that incorporated 20 semi-structured interviews was undertaken with domestic and international undergraduate and postgraduate university students based at one university in Sydney, Australia. Participants were invited to discuss their perceptions of influenza (seasonal vs. pandemic) in terms of perceived severity and impact, and attitudes towards infection control measures including hand-washing and the use of social distancing, isolation or cough etiquette. RESULTS: While participants were generally knowledgeable about influenza transmission, they were unable to accurately define what 'pandemic influenza' meant. While avian flu or SARS were mistaken as examples of past pandemics, almost all participants were able to associate the recent "swine flu" situation as an example of a pandemic event. Not surprisingly, it was uncommon for participants to identify university students as being at risk of catching pandemic influenza. Amongst those interviewed, it was felt that 'students' were capable of fighting off any illness. The participant's nominated hand washing as the most feasible and acceptable compared with social distancing and mask use. CONCLUSIONS: Given the high levels of interaction that occurs in a university setting, it is really important that students are informed about disease transmission and about risk of infection. It may be necessary to emphasize that pandemic influenza could pose a real threat to them, that it is important to protect oneself from infection and that infection control measures can be effective


BACKGROUND: Public health emergencies have the potential to disproportionately impact disadvantaged populations due to pre-established social and economic inequalities. Internationally, prior to the 2009 H1N1 influenza pandemic, existing pandemic plans were created with limited public consultation; therefore, the unique needs and characteristics of some First Nations communities may not be ethically and adequately addressed. Engaging the public in pandemic planning can provide vital information regarding local values and beliefs that may
ultimately lead to increased acceptability, feasibility, and implementation of pandemic plans. Thus, the objective of the present study was to elicit and address First Nations community members’ suggested modifications to their community-level pandemic plans after the 2009 H1N1 influenza pandemic. METHODS: The study area included three remote and isolated First Nations communities located in sub-arctic Ontario, Canada. A community-based participatory approach and community engagement process (i.e., semi-directed interviews (n = 13), unstructured interviews (n = 4), and meetings (n = 27)) were employed. Participants were purposively sampled and represented various community stakeholders (e.g., local government, health care, clergy, education, etc.) involved in the community’s pandemic response. Collected data were manually transcribed and coded using deductive and inductive thematic analysis. The data subsequently informed the modification of the community-level pandemic plans. RESULTS: The primary modifications incorporated in the community-level pandemic plans involved adding community-specific detail. For example, ‘supplies’ emerged as an additional category of pandemic preparedness and response, since including details about supplies and resources was important due to the geographical remoteness of the study communities. Furthermore, it was important to add details of how, when, where, and who was responsible for implementing recommendations outlined in the pandemic plans. Additionally, the roles and responsibilities of the involved organizations were further clarified. CONCLUSIONS: Our results illustrate the importance of engaging the public, especially First Nations, in pandemic planning to address local perspectives. The community engagement process used was successful in incorporating community-based input to create up-to-date and culturally-appropriate community-level pandemic plans. Since these pandemic plans are dynamic in nature, we recommend that the plans are continuously updated to address the communities’ evolving needs. It is hoped that these modified plans will lead to an improved pandemic response capacity and health outcomes, during the next public health emergency, for these remote and isolated First Nations communities. Furthermore, the suggested modifications presented in this paper may help inform updates to the community-level pandemic plans of other similar communities.

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Maladies cardio-vasculaires


CONTEXT: The need for anticoagulation after surgical aortic valve replacement (AVR) with biological prostheses is not well examined. OBJECTIVE: To perform a nationwide study of the association of warfarin treatment with the risk of thromboembolic complications, bleeding incidents, and cardiovascular deaths after bioprosthetic AVR surgery. DESIGN, SETTING, AND PARTICIPANTS: Through a search in the Danish National Patient Registry, 4075 patients were identified who had bioprosthetic AVR surgery performed between January 1, 1997, and December 31, 2009. Concomitant comorbidity and medication were retrieved. Poisson regression models were used to determine risk. MAIN OUTCOME MEASURES: Incidence rate ratios (IRRs) of strokes, thromboembolic events, cardiovascular deaths, and bleeding incidents by discontinuing warfarin as opposed to continued treatment 30 to 89 days, 90 to 179 days, 180 to 364 days, 365 to 729 days, and at least 730 days after surgery. RESULTS: The median duration of follow-up was 6.57 person-years. Estimated rates of events per 100 person-years in patients not treated with warfarin compared with those treated with warfarin with comparative absolute risk were 7.00 (95% CI, 4.07-12.06) vs 2.69 (95% CI, 1.49-4.87; adjusted IRR, 2.46; 95% CI, 1.09-5.55) for strokes; 13.07 (95% CI, 8.76-19.50) vs 3.97 (95% CI, 2.43-6.48; adjusted IRR, 2.93; 95% CI, 1.54-5.55) for thromboembolic events; 11.86 (95% CI, 7.81-18.01) vs 5.37 (95% CI, 3.54-8.16; adjusted IRR, 2.32; 95% CI, 1.28-4.22) for bleeding incidents; and 31.74 (95% CI, 26.69-40.79) vs 3.83 (95% CI, 2.35-6.25; adjusted IRR, 7.61; 95% CI, 4.37-13.26) for cardiovascular deaths within 30 to 89 days after surgery; and 6.50 (95% CI, 4.67-9.06) vs 2.08 (95% CI, 0.99-4.36; adjusted IRR, 3.51; 95% CI, 1.54-8.03) for cardiovascular deaths within 90 to 179 days after surgery.

CONCLUSION: Dis discontinuation of warfarin treatment within 6 months after bioprosthetic AVR surgery was associated with increased cardiovascular death


BACKGROUND: Patients' responses to oral antiplatelet therapy are subject to variation. Bedside monitoring offers the opportunity to improve outcomes after coronary stenting by individualizing therapy. METHODS: We randomly assigned 2440 patients scheduled for coronary stenting at 38 centers to a strategy of platelet-function monitoring, with drug adjustment in patients who had a poor response to antiplatelet therapy, or to a conventional strategy without monitoring and drug adjustment. The primary end point was the composite of death, myocardial infarction, stent thrombosis, stroke, or urgent revascularization 1 year after stent implantation. For patients in the monitoring group, the VerifyNow P2Y12 and aspirin point-of-care assays were used in the catheterization laboratory before stent implantation and in the outpatient clinic 2 to 4 weeks later. RESULTS: In the monitoring group, high platelet reactivity in patients taking clopidogrel (34.5% of patients) or aspirin (7.6%) led to the administration of an additional bolus of clopidogrel, prasugrel, or aspirin along with glycoprotein IIb/IIIa inhibitors during the procedure. The primary end point occurred in 34.6% of the patients in the monitoring group, as compared with 31.1% of those in the conventional-treatment group (hazard ratio, 1.13; 95% confidence interval [CI], 0.98 to 1.29; P=0.10). The main secondary end point, stent thrombosis or any urgent revascularization, occurred in 4.9% of the patients in the monitoring group and 4.6% of those in the conventional-treatment group (hazard ratio, 1.06; 95% CI, 0.74 to 1.52; P=0.77). The rate of major bleeding events did not differ significantly between groups. CONCLUSIONS: This study showed no significant improvements in clinical outcomes with platelet-function monitoring and treatment adjustment for coronary stenting, as compared with standard antiplatelet therapy without monitoring. (Funded by Allies in Cardiovascular Trials Initiatives and Organized Networks and others; ARCTIC ClinicalTrials.gov number, NCT00827411.)


Persistent neutrophilic meningitis presents a diagnostic challenge, because the differential diagnosis is broad and includes atypical infectious causes. We describe a case of persistent neutrophilic meningitis due to Aspergillus fumigatus in an immunocompetent man who had no evidence of sinopulmonary or cutaneous disease. An epidural glucocorticoid injection was identified as a potential route of entry for this organism into the central nervous system, and the case was reported to the state health department


BACKGROUND: The Apixaban for Reduction in Stroke and Other Thromboembolic Events in Atrial Fibrillation (ARISTOTLE) trial showed that apixaban is better than warfarin at prevention of stroke or systemic embolism, causes less bleeding, and results in lower mortality. We assessed in this trial's participants how results differed according to patients' CHADS(2), CHA(2)DS(2)VASc, and HAS-BLED scores, used to predict the risk of stroke and bleeding. METHODS: ARISTOTLE was a double-blind, randomised trial that enrolled 18,201 patients with atrial fibrillation in 39
countries. Patients were randomly assigned apixaban 5 mg twice daily (n=9120) or warfarin (target international normalised ratio 2.0-3.0; n=9081). The primary endpoint was stroke or systemic embolism. The primary safety outcome was major bleeding. We calculated CHADS(2), CHA(2)DS(2)VASc, and HAS-BLED scores of patients at randomisation. Efficacy analyses were by intention to treat, and safety analyses were of the population who received the study drug. ARISTOTLE is registered with ClinicalTrials.gov, number NCT00412984. FINDINGS: Apixaban significantly reduced stroke or systemic embolism with no evidence of a differential effect by risk of stroke (CHADS(2) 1, 2, or >/=3, p for interaction=0.4457; or CHA(2)DS(2)VASc 1, 2, or >/=3, p for interaction=0.1210) or bleeding (HAS-BLED 0-1, 2, or >/=3, p for interaction=0.9422). Patients who received apixaban had lower rates of major bleeding than did those who received warfarin, with no difference across all score categories (CHADS(2), p for interaction=0.4018; CHA(2)DS(2)VASc, p for interaction=0.2059; HAS-BLED, p for interaction=0.7127). The relative risk reduction in intracranial bleeding tended to be greater in patients with HAS-BLED scores of 3 or higher (hazard ratio [HR] 0.22, 95% CI 0.10-0.48) than in those with HAS-BLED scores of 0-1 (HR 0.66, 0.39-1.12; p for interaction=0.0604). INTERPRETATION: Because apixaban has benefits over warfarin that are consistent across patient risk of stroke and bleeding as assessed by the CHADS2, CHA2DS2VASc, and HAS-BLED scores, these scores might be less relevant when used to tailor apixaban treatment to individual patients than they are for warfarin. Further improvement in risk stratification for both stroke and bleeding is needed, particularly for patients with atrial fibrillation at low risk for these events. FUNDING: Bristol-Myers Squibb and Pfizer


The authors aggregated the results of observational studies examining the association between long working hours and coronary heart disease (CHD). Data sources used were MEDLINE (through January 19, 2011) and Web of Science (through March 14, 2011). Two investigators independently extracted results from eligible studies. Heterogeneity between the studies was assessed using the I(2) statistic, and the possibility of publication bias was assessed using the funnel plot and Egger's test for small-study effects. Twelve studies were identified (7 case-control, 4 prospective, and 1 cross-sectional). For a total of 22,518 participants (2,313 CHD cases), the minimally adjusted relative risk of CHD for long working hours was 1.80 (95% confidence interval (CI): 1.42, 2.29), and in the maximally (multivariate-) adjusted analysis the relative risk was 1.59 (95% CI: 1.23, 2.07). The 4 prospective studies produced a relative risk of 1.39 (95% CI: 1.12, 1.72), while the corresponding relative risk in the 7 case-control studies was 2.43 (95% CI: 1.81, 3.26). Little evidence of publication bias but relatively large heterogeneity was observed. Studies varied in size, design, measurement of exposure and outcome, and adjustments. In conclusion, results from prospective observational studies suggest an approximately 40% excess risk of CHD in employees working long hours

This paper investigates the impact of stock market movement on incidences of stroke utilizing population-based aggregate data in Taiwan. Using the daily data from the Taiwan Stock Exchange Capitalization Weighted Stock Index and from the National Health Insurance Research Database during 2001/1/1-2007/12/31, which consist of 2556 observations, we examine the effects of stock market on stroke incidence - the level effect and the daily change effects. In general, we find that both a low stock index level and a daily fall in the stock index are associated with greater incidences of stroke. We further partition the data on sex and age. The level effect is found to be significant for either gender, in the 45-64 and 65 >/= age groups. In addition, two daily change effects are found to be significant for males and the elderly. Although stockholdings can increase wealth, they can also increase stroke incidence, thereby representing a cost to health.


Maladies liées à l’alcool


Paludisme

(1) KUEHN BM. Injections may take the bite out of malaria studies. JAMA. 2012 Dec. 12, vol. 308, n° 22, p.2325


BACKGROUND: Human immunodeficiency virus (HIV) protease inhibitors show activity against Plasmodium falciparum in vitro. We hypothesized that the incidence of malaria in HIV-infected children would be lower among children receiving lopinavir-ritonavir-based antiretroviral therapy (ART) than among those receiving nonnucleoside reverse-transcriptase inhibitor (NNRTI)-based ART. METHODS: We conducted an open-label trial in which HIV-infected children 2 months to 5
years of age who were eligible for ART or were currently receiving NNRTI-based ART were randomly assigned to either lopinavir-ritonavir-based ART or NNRTI-based ART and were followed for 6 months to 2 years. Cases of uncomplicated malaria were treated with artemether-lumefantrine. The primary end point was the incidence of malaria. RESULTS: We enrolled 176 children, of whom 170 received the study regimen: 86 received NNRTI-based ART, and 84 lopinavir-ritonavir-based ART. The incidence of malaria was lower among children receiving the lopinavir-ritonavir-based regimen than among those receiving the NNRTI-based regimen (1.32 vs. 2.25 episodes per person-year; incidence-rate ratio, 0.59; 95% confidence interval [CI], 0.36 to 0.97; P=0.04), as was the risk of a recurrence of malaria after treatment with artemether-lumefantrine (28.1% vs. 54.2%; hazard ratio, 0.41; 95% CI, 0.22 to 0.76; P=0.004). The median lumefantrine level on day 7 after treatment for malaria was significantly higher in the lopinavir-ritonavir group than in the NNRTI group. In the lopinavir-ritonavir group, lumefantrine levels exceeding 300 ng per milliliter on day 7 were associated with a reduction of more than 85% in the 63-day risk of recurrent malaria. A greater number of serious adverse events occurred in the lopinavir-ritonavir group than in the NNRTI group (5.6% vs. 2.3%, P=0.16). Pruritus occurred significantly more frequently in the lopinavir-ritonavir group, and elevated alanine aminotransferase levels significantly more frequently in the NNRTI group. CONCLUSIONS: Lopinavir-ritonavir-based ART as compared with NNRTI-based ART reduced the incidence of malaria by 41%, with the lower incidence attributable largely to a significant reduction in the recurrence of malaria after treatment with artemether-lumefantrine. Lopinavir-ritonavir-based ART was accompanied by an increase in serious adverse events. (Funded by the Eunice Kennedy Shriver National Institute of Child Health and Human Development; ClinicalTrials.gov number, NCT00978068.)


About 20 years after initial calls for the introduction of user fees in health systems in sub-Saharan Africa, a growing coalition is advocating for their removal. Several African countries have abolished user fees for health care for some or all of their citizens. However, fee-for-service health care delivery remains a primary health care funding model in many countries in sub-Saharan Africa. Although the impact of user fees on utilization of health services and household finances has been studied extensively, further research is needed to characterize the multi-faceted health and social problems associated with charging user fees. This ethnographic study aims to identify consequences of user fees on gender inequality, food insecurity, and household decision-making for a group of women living in poverty. Ethnographic life history interviews were conducted with 24 women in Yirimadjo, Mali in 2007. Purposive sampling selected participants across a broad socio-economic spectrum. Semi-structured interviews addressed participants’ past medical history, socio-economic status, social and family history, and access to health care. Interview transcripts were coded using the guiding analytical framework of structural violence. Interviews revealed that user fees for health care not only decreased utilization of health services, but also resulted in delayed presentation for care, incomplete or inadequate care, compromised food security and household financial security, and reduced agency for women in health care decision making. The effects of user fees were amplified by conditions of poverty, as well as gender and health inequality; user fees in turn reinforced the inequalities created by those very conditions. The qualitative data reveal multi-faceted health and socioeconomic effects of user fees, and illustrate that user fees for health care may impact quality of care, health outcomes, food insecurity, and gender inequality, in addition to impacting health care utilization and household finances. As many countries consider user fee abolition policies, these findings indicate the need to create a broader evaluation framework—one that can measure the health and socioeconomic impacts of user fee policies and of their removal.

A common assumption in genomics research is that the use of ethnic categories has the potential to lead to ethnic stigmatisation - particularly when the research is done on minority populations. Yet few empirical studies have sought to investigate the relation between genomics and stigma, and fewer still with a focus on Africa. In this paper, we investigate the potential for genomics research to lead to harms to ethnic groups. We carried out 49 semi-structured, open-ended interviews with stakeholders in a current medical genomics research project in Africa, MalariaGEN. Interviews were conducted with MalariaGEN researchers, fieldworkers, members of three ethics committees who reviewed MalariaGEN project proposals, and with members of the two funding bodies providing support to the MalariaGEN project. Interviews were conducted in Kenya, The Gambia and the UK between June 2008 and October 2009. They covered a range of aspects relating to the use of ethnicity in the genomics project, including views on adverse effects of the inclusion of ethnicity in such research. Drawing on the empirical data, we argue that the risk of harm to ethnic groups is likely to be more acute in specific types of genomics research. We develop a typology of research questions and projects that carry a greater risk of harm to the populations included in genomics research. We conclude that the potential of generating harm to ethnic groups in genomics research is present if research includes populations that are already stigmatised or discriminated against, or where the research investigates questions with particular normative implications. We identify a clear need for genomics researchers to take account of the social context of the work they are proposing to do, including understanding the local realities and relations between ethnic groups, and whether diseases are already stigmatised.


BACKGROUND: In western Kenya, malaria remains one of the major health problems and its control remains an important public health measure. Malaria control is by either use of drugs to treat patients infected with malaria parasites or by controlling the vectors. Vector control may target the free living adult or aquatic (larval) stages of mosquito. The most commonly applied control strategies target indoor resting mosquitoes. However, because mosquitoes spend a considerable time in water, targeting the aquatic stages can complement well with existing adult control measures. METHODS: Larval source management (LSM) of malaria vectors was examined in two villages i.e. Fort Ternan and Lunyerere, with the aim of testing strategies that can easily be accessed by the affected communities. Intervention strategies applied include environmental management through source reduction (drainage of canals, land levelling or by filling ditches with soil), habitat manipulation (by provision of shading from arrow root plant), application of Bacillus thuringiensis var israelensis (Bti) and the use of predatory fish, Gambusia affinis. The abundance of immature stages of Anopheles and Culex within intervention habitats was compared to that within non-intervention habitats. RESULTS: The findings show that in Fort Ternan no significant differences were observed in the abundance of Anopheles early and late instars between intervention and non-intervention habitats. In Lunyerere, the abundance of Anopheles early instars was fifty five times more likely to be present within non-intervention habitats than in habitats under drainage. No differences in early instars abundance were observed between non-intervention and habitats applied with Bti. However, late instars had 89 % and 91 % chance of being sampled from non-intervention rather than habitats under drainage and those applied with Bti respectively. CONCLUSION: Most of these interventions were applied in habitats that arose due to human activities. Involvement of community members in control programs would be beneficial in the long term once they understand the role they play in malaria transmission. Apart from the need for communities to be educated on their role in malaria transmission, there is a need to develop and test strategies that can easily be accessed and hence be used by the affected communities. The proposed LSM strategies target outdoor immature mosquitoes and hence can complement well with control measures that target indoor resting vectors. Therefore inclusion of LSM in Integrated Vector Management (IVM) program would be beneficial.


BACKGROUND: The training of health workers in the use of malaria rapid diagnostic tests (RDTs) is an important component of a wider strategy to improve parasite-based malaria diagnosis at lower level health care facilities (LLHFs) where microscopy is not readily available for all patients with suspected malaria. This study describes the process and cost of training to attain competence of lower level health workers to perform malaria RDTs in a public health system setting in eastern Uganda. METHODS: Health workers from 21 health facilities in Uganda were given a one-day central training on the use of RDTs in malaria case management, including practical skills on how to perform read and interpret the test results. Successful trainees subsequently integrated the use of RDTs into their routine care for febrile patients at their LLHFs.
and transferred their acquired skills to colleagues (cascade training model). A cross-sectional evaluation of the health workers' competence in performing RDTs was conducted six weeks following the training, incorporating observation, in-depth interviews with health workers and the review of health facility records relating to tests offered and antimalarial drug (AMD) prescriptions pre and post training. The direct costs relating to the training processes were also documented. RESULTS: Overall, 135 health workers were trained including 63 (47%) nursing assistants, a group of care providers without formal medical training. All trainees passed the post-training concordance test with ≥ 80% except 12 that required re-training. Six weeks after the one-day training, 51/64 (80%) of the health workers accurately performed the critical steps in performing the RDT. The performance was similar among the 10 (16%) participants who were peer-trained by their trained colleagues. Only 9 (14%) did not draw the appropriate amount of blood using pipette. The average cost of the one-day training was US$ 101 (range $92–$112), with the main cost drivers being trainee travel and per-diems. Health workers offered RDTs to 76% of febrile patients and AMD prescriptions reduced by 37% six weeks post-training. CONCLUSION: One-day training on the use of RDTs successfully provided adequate skill and competency among health workers to perform RDTs in fever case management at LLHF in a Uganda setting. The cost averaged at US$101 per health worker trained, with the main cost drivers being trainee travel and per diems. Given the good peer training noted in this study, there is need to explore the cost-effectiveness of a cascade training model for large scale implementation of RDTs.

Pathologies liées à l’obésité


Gout is an ancient disease. Despite significant advances in the understanding of its risk factors, etiology, pathogenesis, prevention, and treatment, millions of people with gout experience repeated attacks of acute arthritis and other complications. The incidence of gout is increasing, most likely reflecting increasing rates of obesity and other lifestyle factors, including diet. Comorbid conditions that often accompany gout, including chronic kidney disease and diabetes mellitus, present challenges for the management of gout. Using the case of Mr R, a 57-year-old man with a history of podagra, hyperuricemia, and mild renal insufficiency, the diagnosis and treatment of gout are discussed. For those with moderate to severe gout, urate-lowering treatment can eliminate acute attacks of arthritis and prevent complications. In the near future, it is likely that new risk factors for gout will be identified and new ways of preventing and managing this common disease will become available.


OBJECTIVE: To determine whether, and to what extent, physical activity interventions affect the overall activity levels of children. DESIGN: Systematic review and meta-analysis. DATA SOURCES: Electronic databases (Embase, Medline, PsycINFO, SPORTDiscus) and reference lists of included studies and of relevant review articles. STUDY SELECTION: Design: randomised controlled trials or controlled clinical trials (cluster and individual) published in peer reviewed journals. Intervention: incorporated a component designed to increase the physical activity of children/adolescents and was at least four weeks in duration. Outcomes: measured whole day physical activity objectively with accelerometers either before or immediately after the end of the intervention period. DATA ANALYSIS: Intervention effects (standardised mean differences) were calculated for total physical activity, time spent in moderate or vigorous physical activity, or both for each study and pooled using a weighted random effects model. Meta-regression explored the heterogeneity of intervention effects in relation to study participants, design, intervention type, and methodological quality. RESULTS: Thirty studies (involving 14,326 participants; 6153 with accelerometer measured physical activity) met the inclusion criteria and all were eligible for meta-analysis/meta-regression. The pooled intervention effect across all studies was small to negligible for total physical activity (standardised mean difference 0.12, 95% confidence interval 0.04 to 0.20; P<0.01) and small for moderate or vigorous activity (0.16, 0.08 to 0.24; P<0.001). Meta-regression indicated that the pooled intervention effect did not differ significantly between any of the subgroups (for example, for total physical activity, standardised mean differences were 0.07 for age <10 years and 0.16 for >/= 10 years, P=0.19; 0.07 for body mass index across the entire range and 0.22 for exclusively overweight/obese children, P=0.07; 0.12 for study duration </= 6 months and 0.09 for >6 months, P=0.71; 0.15 for home/family based intervention and 0.10 for school based intervention, P=0.53; and 0.09 for higher quality studies and 0.14 for lower quality studies, P=0.52). CONCLUSIONS: This review provides strong evidence that physical activity interventions have had only a small effect (approximately 4 minutes more walking or running per
day) on children's overall activity levels. This finding may explain, in part, why such interventions have had limited success in reducing the body mass index or body fat of children

(10) PATEL K. Tax calories to end the buffet syndrome. BMJ. 2012, vol. 345, p.e6674


The prevalence of type 2 diabetes is rapidly increasing, with severe socioeconomic impacts. Excess lipid deposition in peripheral tissues impairs insulin sensitivity and glucose uptake, and has been proposed to contribute to the pathology of type 2 diabetes. However, few treatment options exist that directly target ectopic lipid accumulation. Recently it was found that vascular endothelial growth factor B (VEGF-B) controls endothelial uptake and transport of fatty acids in heart and skeletal muscle. Here we show that decreased VEGF-B signalling in rodent models of type 2 diabetes restores insulin sensitivity and improves glucose tolerance. Genetic deletion of Vegfb in diabetic db/db mice prevented ectopic lipid deposition, increased muscle glucose uptake and maintained normoglycaemia. Pharmacological inhibition of VEGF-B signalling by antibody administration to db/db mice enhanced glucose tolerance, preserved pancreatic islet architecture, improved beta-cell function and ameliorated dyslipidaemia, key elements of type 2 diabetes and the metabolic syndrome. The potential use of VEGF-B neutralization in type 2 diabetes was further elucidated in rats fed a high-fat diet, in which it normalized insulin sensitivity and increased glucose uptake in skeletal muscle and heart. Our results demonstrate that the vascular endothelium can function as an efficient barrier to excess muscle lipid uptake even under conditions of severe obesity and type 2 diabetes, and that this barrier can be maintained by inhibition of VEGF-B signalling. We propose VEGF-B antagonism as a novel pharmacological approach for type 2 diabetes, targeting the lipid-transport properties of the endothelium to improve muscle insulin sensitivity and glucose disposal

(12) ARIE S. American countries face major health problems because of aging and obesity, report says. BMJ. 2012, vol. 345, p.e6289


The prevalence of childhood obesity has tripled in the United States over the last 25 years, and in addition to increased risks of many chronic diseases, obesity may also be linked to lower skill attainment, poor social competency, and poorer labor outcomes. Any causal links between obesity and human capital accumulation could have important consequences for both health and economic well-being over the life course. We investigate the association of obesity and cognitive and non-cognitive outcomes among US children and adolescents aged 5 to 19 using the Child Development Supplement of the Panel Survey of Income Dynamics. We perform OLS and individual fixed effects regressions to address unobserved time invariant heterogeneity in the relationship between overweight/obesity and abilities. Results provide limited support for the hypothesis that obesity negatively affects non-cognitive but not cognitive outcomes and suggest that discrimination rather than a biological mechanism contributes to negative outcomes found in the literature on adults

OBJECTIVES: We conducted a systematic review of the literature examining the relationship between built environments (e.g., parks, trails, sidewalks) and physical activity (PA) or obesity rates. METHODS: We performed a 2-step inclusion protocol to identify empirical articles examining any form of built environment and any form of PA (or obesity rate) as the outcome. We extracted data from included abstracts for analysis by using a standard code sheet developed for this study. RESULTS: Of 169 included articles, 89.2% reported beneficial relationships—but virtually all articles utilized simple observational study designs not suited for determining causality. Studies utilizing objective PA measures (e.g., pedometer) were 18% less likely to identify a beneficial relationship. Articles focusing on children in community settings (-14.2%), those examining direct measures of obesity (-6.2%), or those with an academic first author (-3.4%) were less likely to find a beneficial relationship. CONCLUSIONS: Policymakers at federal and local levels should encourage more rigorous scientific research to determine whether altered built environments will result in increased PA and decreased obesity rates.


BACKGROUND: Policies targeting obesogenic environments and behaviours are critical to counter rising obesity rates and lifestyle-related non-communicable diseases (NCDs). Policies are likely to be most effective and enduring when they are based on the best available evidence. Evidence-informed policy making is especially challenging in countries with limited resources. The Pacific TROPIC (Translational Research for Obesity Prevention in Communities) project aims to implement and evaluate a tailored knowledge-brokering approach to evidence-informed policy making to address obesity in Fiji, a Pacific nation challenged by increasingly high rates of obesity and concomitant NCDs. METHODS: The TROPIC project draws on the concept of ‘knowledge exchange’ between policy developers (individuals; organisations) and researchers to deliver a knowledge broking programme that maps policy environments, conducts workshops on evidence-informed policy making, supports the development of evidence-informed policy briefs, and embeds evidence-informed policy making into organisational culture. Recruitment of government and nongovernment organisational representatives will be based on potential to: develop policies relevant to obesity, reach broad audiences, and commit to resourcing staff and building a culture that supports evidence-informed policy development. Workshops will increase awareness of both obesity and policy cycles, as well as develop participants’ skills in accessing, assessing and applying relevant evidence to policy briefs. The knowledge-brokering team will then support participants to: 1) develop evidence-informed policy briefs that are both commensurate with national and organisational plans and also informed by evidence from the Pacific Obesity Prevention in Communities project and elsewhere; and 2) collaborate with participating organisations to embed evidence-informed policy making structures and processes. This knowledge broking initiative will be evaluated via data from semi-structured interviews, a validated self-assessment tool, process diaries and outputs. DISCUSSION: Public health interventions have rarely targeted evidence-informed policy making structures and processes to reduce obesity and NCDs. This study will empirically advance understanding of knowledge broking processes to extend evidence-informed policy making skills and develop a suite of national obesity-related policies that can potentially improve population health outcomes.

BACKGROUND: The prevalence of obesity has reached epidemic proportions worldwide, and is also increasing among public safety professionals like firefighters who are expected to be fit and more active. The present study evaluates the associations among Body Mass Index (BMI), weight perception and cardiovascular risk factors in 768 male career firefighters from two Midwestern states in the United States. METHODS: A physical examination was performed and fasting blood samples were taken. Cardio-respiratory fitness (CRF) was determined from symptom-limited maximal treadmill exercise testing with electrocardiogram (ECG) monitoring and estimation of oxygen consumption (metabolic equivalents, METS) using the Bruce protocol. A health and lifestyle questionnaire was administered with standardized written instructions for completion. Self-reports of weight perception were extracted from responses to the completed multiple choice questionnaire. Baseline characteristics were described using the mean (standard deviation) for continuous variables and frequency for categorical variables. Group comparisons were calculated using analysis of variance (ANOVA). Linear models and logistic regression models were used to adjust for possible confounders. Logistic regression analyses were used to calculate the odds ratios of underestimating one's weight category. RESULTS: A high proportion of overweight and obese male career firefighters underestimate their weight categories (68%). The risk of underestimating one's weight category increased by 24% with each additional unit of increasing BMI after adjustment for age and CRF. When divided into six groups based on combinations of measured BMI category and weight perception, there were significant differences among the groups for most cardiovascular risk factors. After adjustment for age and BMI, these differences remained statistically significant for CRF, amount of weekly exercise, prevalence of Metabolic Syndrome (MetSyn), body fat percentage and cholesterol measurements. CONCLUSION: A high proportion of overweight and obese male career firefighters underestimate their measured BMI categories. As a result, they are unlikely to fully appreciate the negative health consequences of their excess weight. The results of this study emphasize the importance of objectively measuring BMI and then informing patients of their actual weight status and the associated disease risks.


BACKGROUND: A better understanding of the relationships between obesity and lifestyle factors is necessary for effective prevention and management of obesity in youth. Therefore, the objective of this study was to evaluate the associations between obesity measures and several lifestyle factors, including physical activity, sedentary behaviors and dietary habits among Saudi adolescents aged 14-19 years. METHODS: This was a school-based cross-sectional study that was conducted in three cities in Saudi Arabia (Al-Khobar, Jeddah and Riyadh). The participants were 2906 secondary school males (1400) and females (1506) aged 14-19 years, who were randomly selected using a multistage stratified cluster sampling technique. Measurements included weight, height, body mass index (BMI), waist circumference, waist/height ratio (WHtR), screen time (television viewing, video games and computer use), physical activity (determined using a validated questionnaire), and dietary habits (intake frequency per week). Logistic regression was used to examine the associations between obesity and lifestyle factors. RESULTS: Compared with non-obese, obese males and females were significantly less active, especially in terms of vigorous activity, had less favorable dietary habits (e.g., lower intake of breakfast, fruits and milk), but had lower intake of sugar-sweetened drinks and sweets/chocolates. Logistic regression analysis showed that overweight/obesity (based on BMI categories) or
abdominal obesity (based on WHtR categories) were significantly and inversely associated with vigorous physical activity levels (aOR for high level = 0.69, 95% CI 0.41-0.92 for BMI and 0.63, 95% CI 0.45-0.89 for WHtR) and frequency of breakfast (aOR for < 3 days/week = 1.44; 95% CI 1.20-1.71 for BMI and 1.47; 95% CI 1.22-1.76 for WHtR) and vegetable (aOR for < 3 days/week = 1.29; 95% CI 1.03-1.59 for WHtR) intakes, and consumption of sugar-sweetened beverages (aOR for < 3 days/week = 1.32; 95% CI 1.08-1.62 for BMI and 1.42; 95% CI 1.16-1.75 for WHtR).

CONCLUSIONS: The present study identified several lifestyle factors associated with obesity that may represent valid targets for the prevention and management of obesity among Saudi adolescents. Primary prevention of obesity by promoting active lifestyles and healthy diets should be a national public health priority


BACKGROUND: A series of cross-sectional studies have found a relationship between stunting and obesity in childhood. Because height appears in both the numerator of indices of stunting and the denominator of indices of obesity, random errors made by fieldworkers measuring heights can produce negative bias in estimates of this relationship. METHODS: With longitudinal data, height can be instrumented with its lagged value in a two-stage probit regression model, purging the estimated association between the probability of being obese or underweight and the height-for-age z-score of this errors-in-variables bias. Such a model is fitted to a cohort of 1110 primary-school-age children measured in 1993-2004 in a panel study in KwaZulu-Natal, South Africa. The study also collected detailed data on households’ demographic and socio-economic characteristics. RESULTS: Risk factors for stunting, wasting and obesity differed in this population. Stunting was not associated with childhood obesity in either the cross-sectional or two-stage models. In the cross-sectional analysis, however, random measurement errors masked a negative association between children's height-for-age and their probability of being underweight or wasted that emerged in the two-stage instrumental variable models. This association was further amplified, rather than attenuated, by controlling for children's household income, racial group, residence and mother's education. CONCLUSIONS: The validity of the findings of earlier cross-sectional studies of the association between stunting and obesity in childhood is dependent on the precision with which they measured height. Random measurement error can also mask an association between being stunted and underweight in cross-sectional studies


Characterization of human monoclonal antibodies is providing considerable insight into mechanisms of broad HIV-1 neutralization. Here we report an HIV-1 gp41 membrane-proximal external region (MPER)-specific antibody, named 10E8, which neutralizes approximately 98% of tested viruses. An analysis of sera from 78 healthy HIV-1-infected donors demonstrated that 27% contained MPER-specific antibodies and 8% contained 10E8-like specificities. In contrast to other neutralizing MPER antibodies, 10E8 did not bind phospholipids, was not autoreactive, and bound cell-surface envelope. The structure of 10E8 in complex with the complete MPER revealed a site of vulnerability comprising a narrow stretch of highly conserved gp41-hydrophobic residues and a critical arginine or lysine just before the transmembrane region. Analysis of resistant HIV-1 variants confirmed the importance of these residues for neutralization. The highly conserved MPER is a target of potent, non-self-reactive neutralizing antibodies, suggesting that HIV-1 vaccines should aim to induce antibodies to this region of HIV-1 envelope glycoprotein.


Human immunodeficiency virus type 1 (HIV-1) buds from the cell as an immature particle requiring subsequent proteolysis of the main structural polyprotein Gag for morphological maturation and infectivity. Visualization of the viral envelope (Env) glycoprotein distribution on the surface of individual HIV-1 particles with stimulated emission depletion (STED) superresolution fluorescence microscopy revealed maturation-induced clustering of Env proteins that depended on the Gag-interacting Env tail. Correlation of Env surface clustering with the viral entry efficiency revealed coupling between the viral interior and exterior: Rearrangements of the inner protein lattice facilitated the alteration of the virus surface in preparation for productive entry. We propose that Gag proteolysis-dependent clustering of the sparse Env trimers on the viral surface may be an essential aspect of HIV-1 maturation.


The RV144 trial demonstrated 31% vaccine efficacy at preventing human immunodeficiency virus (HIV)-1 infection. Antibodies against the HIV-1 envelope variable loops 1 and 2 (Env V1 and V2) correlated inversely with infection risk. We proposed that vaccine-induced immune responses against V1/V2 would have a selective effect against, or sieve, HIV-1 breakthrough viruses. A total of 936 HIV-1 genome sequences from 44 vaccine and 66 placebo recipients were examined. We show that vaccine-induced immune responses were associated with two signatures in V2 at amino acid positions 169 and 181. Vaccine efficacy against viruses matching the vaccine at position 169 was 48% (confidence interval 18% to 66%; P = 0.0036), whereas vaccine efficacy against viruses mismatching the vaccine at position 181 was 78% (confidence interval 35% to 93%; P = 0.0028). Residue 169 is in a cationic glycosylated region recognized by broadly neutralizing and RV144-derived antibodies. The predicted distance between the two signature sites (21 +/- 7 A) and their match/mismatch dichotomy indicate that multiple factors may be involved in the protection observed in RV144. Genetic signatures of RV144 vaccination in V2 complement the finding of an association between high V1/V2-binding antibodies and reduced risk of HIV-1 acquisition, and provide evidence that vaccine-induced V2 responses plausibly had a role in the partial protection conferred by the RV144 regimen.


(9) **THARMALINGAM H, MORRIS TC, FARNSWORTH J, KANFER EJ. Headache and visual aura in an immunocompromised patient.** BMJ. 2012, vol. 345, p.e6507


To clarify the role of previous lung diseases (chronic bronchitis, emphysema, pneumonia, and tuberculosis) in the development of lung cancer, the authors conducted a pooled analysis of studies in the International Lung Cancer Consortium. Seventeen studies including 24,607 cases and 81,829 controls (noncases), mainly conducted in Europe and North America, were included (1984-2011). Using self-reported data on previous diagnoses of lung diseases, the authors derived study-specific effect estimates by means of logistic regression models or Cox proportional hazards models adjusted for age, sex, and cumulative tobacco smoking. Estimates were pooled using random-effects models. Analyses stratified by smoking status and histology were also conducted. A history of emphysema conferred a 2.44-fold increased risk of lung cancer (95% confidence interval (CI): 1.64, 3.62 (16 studies)). A history of chronic bronchitis conferred a relative risk of 1.47 (95% CI: 1.29, 1.68 (13 studies)). Tuberculosis (relative risk = 1.48, 95% CI: 1.17, 1.87 (16 studies)) and pneumonia (relative risk = 1.57, 95% CI: 1.22, 2.01 (12 studies)) were also associated with lung cancer risk. Among never smokers, elevated risks were observed for emphysema, pneumonia, and tuberculosis. These results suggest that previous lung diseases influence lung cancer risk independently of tobacco use and that these diseases are important for assessing individual risk


BACKGROUND: Data on effect of regular liver function monitoring during anti-TB treatment is limited in China. This study aimed to evaluate the effects of scheduled liver function monitoring on identification of asymptomatic liver damage and anti-TB treatment outcomes during anti-TB treatment. METHODS: A retrospective analysis was performed based on a national-level cohort study. A total of 273 patients developing liver dysfunction were divided into two groups, 111 patients who were diagnosed through scheduled liver function test within two months after initiation of anti-TB treatment formed scheduled monitoring group, others who were diagnosed due to developing symptoms formed passive detection group (n = 162). The two groups were compared through clinical features, prognosis of liver dysfunction and impact on anti-TB treatment using propensity score weighting analysis. RESULTS: 33.3% of 273 patients did not have any
clinical symptoms, including 8 with severe hepatotoxicity. 1.8% in scheduled monitoring group and 11.1% in passive detection group required hospitalization (P = 0.004). Regarding the prognosis of liver dysfunction, most patients recovered, no death happened in scheduled monitoring group while 3 died in passive detection group. In terms of impact on anti-TB treatment, 35.1% in scheduled monitoring group and 56.8% in passive detection group changed their anti-TB treatment (P = 0.001). CONCLUSIONS: Scheduled monitoring is effective in identifying asymptomatic liver damage, reducing hospitalization rate and improving compliance of anti-TB treatment


BACKGROUND: TB is a major public health problem globally and Ethiopia is 8th among the 22 high burden countries. Early detection and effective treatment are pre-requisites for a successful TB control programme. In this regard, early health seeking action from patients' side and prompt diagnosis as well as initiation of treatment from the health system's side are essential steps. The aim of this study was to assess delay in the diagnosis and treatment of TB in a predominantly pastoralist area in Ethiopia. METHODS: On a cross-sectional study, two hundred sixteen TB patients who visited DOTS clinics of two health facilities in Afar Region were included consecutively. Time from onset of symptoms till first consultation of formal health providers (patients' delay) and time from first consultation till initiation of treatment (health system's delay) were analyzed. RESULTS: The median patients' and health system's delay were 20 and 33.5 days, respectively. The median total delay was 70.5 days with a median treatment delay of 1 day. On multivariate logistic regression, self-treatment (aOR. 3.99, CI 1.50-10.59) and first visit to non-formal health providers (aOR. 6.18, CI 1.84-20.76) were observed to be independent predictors of patients' delay. On the other hand, having extra-pulmonary TB (aOR. 2.08, CI 1.08-4.04), and a first visit to health posts/clinics (aOR. 19.70, CI 6.18-62.79), health centres (aOR. 4.83, CI 2.23-10.43) and private health facilities (aOR. 2.49, CI 1.07-5.84) were found to be independent predictors of health system's delay. CONCLUSIONS: There is a long delay in the diagnosis and initiation of treatment and this was mainly attributable to the health system. Health system strengthening towards improved diagnosis of TB could reduce the long health system's delay in the management of TB in the study area