

## CHRONIC DISEASE

**P2-1 EFFECT OF INDOOR AIR POLLUTION FROM BIOMASS AND SOLID FUEL COMBUSTION ON PREVALENCE OF ASTHMA AMONG ADULT MEN AND WOMEN IN INDIA**

doi:10.1136/jech.2011.142976h.38

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Increasing asthma incidence, prevalence and morbidity over recent decades presents a significant challenge to public health in developing countries. A number of studies have suggested that ambient air pollution can trigger asthma attacks. In this study we examined the effect of cooking smoke on reported prevalence of asthma among adult men and women in India. Analysis is based on 99 574 women and 56 742 men age 20–49 years included in India's third National Family Health Survey conducted in 2005–2006. Effects of exposure to cooking smoke, determined by type of fuel used for cooking on the prevalence of asthma were estimated using multivariate logistic regression after controlling for age, marital status, education, religion, caste/tribe, house type, place of cooking, persons per room, living standard of the household, urban/rural residence and geographic region. Women living in households using biomass and solid fuels have a significantly higher prevalence of asthma (OR 1.26; 95% CI 1.06 to 1.49) even after controlling for the effects of a number of confounding factors. Interestingly, this effect was not found among men (OR 0.98; 95% CI 0.77 to 1.24). However, tobacco smoking was associated with a higher asthma prevalence both among women (OR 1.72; 95% CI 1.34 to 2.21) and men (OR 1.35; 95% CI 1.49 to 2.25). The findings have important program and policy implications for India, where large proportions of the population rely on polluting biomass and solid fuels for cooking and space heating. More epidemiological research with better measures of smoke exposure and clinical measures of asthma is needed to validate the findings.

**P2-2 HIGHER FISH INTAKE IS ASSOCIATED WITH THE RISK OF TYPE 2 DIABETES IN ADULT INDIAN POPULATION**

doi:10.1136/jech.2011.142976h.39

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**Introduction** Diet is a key component of a healthy lifestyle for preventing type 2 diabetes. Despite a high prevalence of type 2 diabetes in Indians, the impact of diet has not been fully explored. This study aimed to investigate the association between fish intake and the risk of type 2 diabetes among adult men and women in India. **Methods** Analysis is based on a population based cross sectional study of 99 574 women and 61 361 men aged 20–49 years included in India's third National Family Health Survey, 2005–2006. Effects of fish intake, determined by frequency of consumption (daily, weekly and occasionally/never), on the reported prevalence of diabetes were estimated using multivariate logistic regression after adjusting for frequency of consumption of milk/curd, eggs/chicken/meat, BMI status, tobacco smoking, watching television, age, education, living standard of the household, residence and geographic regions.

**Results** After adjustment for other dietary and lifestyle risk factors and socioeconomic and demographic characteristics, risk of diabetes was 1.3 times higher among both men (OR: 1.30; 95% CI 1.09 to 1.56;  $p=0.003$ ) and women (OR: 1.27; 95% CI 1.06 to 1.52;  $p=0.009$ ) who consume fish daily as compared to those who consume them occasionally or never. Weekly fish intake also contribute to a higher risk of diabetes both among men (OR: 1.52; 95% CI 1.20 to 1.93;  $p=0.001$ ) and women (OR: 1.54; 95% CI 1.24

to 1.92;  $p<0.001$ ) even after controlling for the effects of potentially confounding factors.

**Conclusion** Daily or weekly fish intake is associated with higher risk of diabetes among Indians, warranting further investigation. More epidemiological research with better measures of fish intake and clinical measures of diabetes is needed to validate the findings.

**P2-3 A CROSS-NATIONAL COMPARATIVE STUDY OF DIABETES PREVALENCE BETWEEN ENGLISH AND DUTCH SOUTH ASIAN INDIAN AND AFRICAN ORIGIN POPULATIONS**

doi:10.1136/jech.2011.142976h.40

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**Background** Ethnic minority groups in western European countries tend to have higher levels of type 2 diabetes mellitus (DM) than the majority populations for reasons that are poorly understood. Investigating differences between countries could enable an investigation of the importance of national context in determining these inequalities. We determined whether the lower prevalence of DM in England vs the Netherlands is also observed in South-Asian-Indian and African-Caribbean populations. Additionally, we assessed the contribution of health behaviour, body sizes and socio-economic position to any observed differences between countries.

**Methods** Secondary analyses of population-based standardised individual level data of 3386 participants. Differences in prevalence ratios (PR) of DM were estimated using regression models.

**Results** Indian and African-Caribbean populations had higher prevalence rates of diabetes than Whites in both countries. In cross-country comparisons, similar to Whites, English-Indians had a lower prevalence of diabetes than Dutch-Indians; the difference in women remained after adjustments for other covariates (PR=0.35, 95% CI 0.22 to 0.55). English-African women also had a lower prevalence of diabetes than Dutch-Africans (PR=0.43, 95% CI 0.20 to 0.89). For African men the difference was small ( $p=0.249$ ).

**Conclusion** These findings suggest that the increasing prevalence of diabetes following migration may be modified by the context in which ethnic minority groups live.

**P2-4 DIETARY INTAKE OF CARBOHYDRATES AND RISK OF TYPE 2 DIABETES: A SYSTEMATIC REVIEW AND META-ANALYSIS**

doi:10.1136/jech.2011.142976h.41

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**Introduction** Epidemiologic evidence on the role of dietary intake of carbohydrates in development of type-2-diabetes is inconclusive.

**Methods** We conducted a systematic review of studies reporting the association between dietary intake of carbohydrate and its subtypes (starch, sucrose, glucose, fructose, lactose, and maltose) and risk of incident diabetes. We searched MEDLINE (1966 to October 2010) and hand searched bibliographies of retrieved articles. Studies were included if they had a prospective design, adult population, assessed dietary intake at baseline, and recruited participants free of diabetes