

**P2-276 INFLUENCE OF SMOKING AND SMOKING CESSATION ON PULMONARY FUNCTION IN JAPANESE HEALTHY PEOPLE**

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<sup>1</sup>M Shigeta, <sup>\*</sup> <sup>1</sup>E Ozaki, <sup>1</sup>N Kuriyama, <sup>1</sup>D Matsui, <sup>1</sup>I Watanabe, <sup>1</sup>K Inoue, <sup>1</sup>A Nakazawa, <sup>1,2</sup>K Ozasa, <sup>1</sup>Y Watanabe. <sup>1</sup>Kyoto Prefectural University of Medicine, Kyoto, Japan; <sup>2</sup>Radiation Effects Research Foundation, Hiroshima, Japan

**Background and Objective** Chronic obstructive pulmonary disease has been increasing throughout the world. Many studies show that smoking accelerate decline in pulmonary function and smoking cessation can improve it, but there are very few studies focusing effect of smoking cessation in Japanese people. Therefore we investigated influence of smoking/smoking cessation on pulmonary function.

**Subjects and Method** Subjects were 3913 (55.7±10.5 years old) male who underwent medical check-up in a hospital during 2004. We compared pulmonary functions with stratified analysis among 1096 current smokers (CS), 1706 ex-smokers (ES) and 1111 never smokers (NS) using ANOVA.

**Result** There were significant differences respectively among the three groups, in the following order of NS, ES, CS: FEV<sub>1.0</sub> (Forced Expiratory Volume in 1 second) %: 82.8±5.9, 80.5±6.8, 79.8±7.2, % FEV<sub>1.0</sub>, Peak Flow, V<sub>75</sub>, %V<sub>50</sub> and %V<sub>25</sub>. In their 40s, 50s and 60s, ES preserved better pulmonary function than CS consistently and the subjects who quit younger showed the more favourable function.

**Conclusion** Smoking impaired pulmonary function obviously and smoking cessation improved pulmonary function in Japanese people as Western. However earlier cessation was related to larger improvement, even 60s-quitter had certain effect.

**P2-277 ALCOHOL DRINKING AND PRIMARY LIVER CANCER IN JAPANESE: A POOLED ANALYSIS OF FOUR COHORT STUDIES**

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<sup>1</sup>T Shimazu, <sup>\*</sup> <sup>1</sup>S Sasazuki, <sup>2</sup>K Wakai, <sup>3</sup>A Tamakoshi, <sup>4</sup>I Tsuji, <sup>4</sup>Y Sugawara, <sup>5</sup>K Matsuo, <sup>6</sup>C Nagata, <sup>7</sup>T Mizoue, <sup>8</sup>K Tanaka, <sup>1</sup>M Inoue, <sup>1</sup>S Tsugane. <sup>1</sup>National Cancer Center, Tokyo, Japan; <sup>2</sup>Nagoya University Graduate School of Medicine, Nagoya, Japan; <sup>3</sup>Aichi Medical University School of Medicine, Aichi, Japan; <sup>4</sup>Tohoku University Graduate School of Medicine, Sendai, Japan; <sup>5</sup>Aichi Cancer Center Research Institute, Nagoya, Japan; <sup>6</sup>Gifu University Graduate School of Medicine, Gifu, Japan; <sup>7</sup>National Center for Global Health and Medicine, Tokyo, Japan; <sup>8</sup>Saga University, Saga, Japan

**Introduction** Because studies of the association between alcohol intake and the risk of primary liver cancer use varying cut-off points to classify alcohol intake, it is difficult to precisely quantify this association by meta-analysis of published data. Furthermore, there are limited data for women in prospective studies of the dose-specific relation of alcohol intake and the risk of primary liver cancer.

**Methods** We analysed original data from four population-based prospective cohort studies encompassing 174 719 participants (89 86 men and 84 856 women). After adjustment for a common set of variables, we used Cox proportional hazards regression to estimate HRs and 95% CIs of primary liver cancer incidence according to alcohol intake. We conducted a meta-analysis of the HRs derived from each study.

**Results** During 1964 136 person-years of follow-up, 804 primary liver cancer cases (605 men and 199 women) were identified. In male drinkers, the multivariate-adjusted HRs (95% CI) for alcohol intakes of 0.1–22.9, 23.0–45.9, 46.0–68.9, 69.0–91.9, and ≥92.0 g/day, as compared with occasional drinkers, were 0.88 (0.57 to 1.36), 1.06 (0.70 to 1.62), 1.07 (0.69 to 1.66), 1.76 (1.08 to 2.87), and 1.66 (0.98 to 2.82), respectively (p for trend=0.015). In women, we observed a

significantly increased risk among those who drank ≥23.0 g/day, as compared with occasional drinkers (HR: 3.60; 95% CI 1.22 to 10.66).

**Conclusion** This pooled analysis of data from large prospective studies in Japan indicates that avoidance of (1) heavy alcohol drinking (≥69.0 g alcohol/day) in men and (2) moderate drinking (≥23.0 g alcohol/day) in women may reduce the risk of primary liver cancer.

**P2-278 ALTRUISTIC MOTIVATION FOR PRO-SOCIAL BEHAVIOUR PREDICT DECREASED RISK OF CARDIOVASCULAR MORTALITY AMONG COMMUNITY DWELLING POPULATION IN JAPAN: JACC STUDY**

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<sup>1,2</sup>K Shirai, <sup>\*</sup> <sup>3</sup>H Iso, <sup>3</sup>H Noda, <sup>3</sup>T Ohira, <sup>4</sup>K Tanno, <sup>4</sup>K Sakata, <sup>5</sup>A Tamakoshi. <sup>1</sup>Harvard School of Public Health, Boston, Massachusetts, USA; <sup>2</sup>University of the Ryukyus, Nishihara, Okinawa, Japan; <sup>3</sup>Osaka University, Suita, Osaka, Japan; <sup>4</sup>Iwate Medical University, Morioka, Iwate, Japan; <sup>5</sup>Aichi Medical University, Nagoya, Aichi, Japan

**Objectives** This study examine the effects of sense of being relied by others reflecting altruistic motivation for pro-social behaviour on cardiovascular disease mortality among Japanese community residents.

**Method** Subjects were 99 969 Japanese men and women aged 40–79 years free from cardiovascular and cancer disease at baseline 1988–1990, included in the Japan Collaborative Cohort Study. Sex-specific age and multivariable adjusted HRs were calculated according to the perceived level of being relied by others from Cox proportional hazard models to estimate the risks of cardiovascular mortality. Additionally, one-to-one nearest neighbour propensity score matching analysis were carried using a probit model.

**Result** Among 41 906 men and 58 063 women followed up for 14.4 years in median, a total of 4280 (2320 men and 1960 women) cardiovascular deaths were documented. The multivariable HRs of total cardiovascular disease deaths for men with the highest sense of being relied by others to compare with those in the lowest were 0.65 (95% CI 0.52 to 0.82), p for trend p=0.03 for stroke, and 0.75 (95% CI 0.64 to 0.88), p for trend=0.004, for total cardiovascular deaths with dose responses. For both men and women, they were not associated with coronary heart disease deaths. The HRs and the 95% CIs calculated in the matching technique were not grossly different.

**Conclusion** A lower level of sense of being relied by others was found to be associated with higher risk of cardiovascular disease mortality among middle-aged men, suggesting a protective role of altruistic psychological conditions on cardiovascular disease.

**P2-279 10-YEAR MORTALITY FOLLOW-UP OF MATERNAL AND PATERNAL GRANDPARENTS SHOWS DIFFERENT PATTERNS OF ASSOCIATION WITH THEIR GRANDCHILDREN'S BIRTH WEIGHTS: THE LIFEWAYS CROSS GENERATION COHORT STUDY**

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A Shrivastava, <sup>\*</sup> C Murrin, C Kelleher, for the Lifeways Cross Generation Cohort Study Steering Group.

Health Research Board Centre for Diet and Health Research, School of Public Health, Physiotherapy and Population Science, University College Dublin, Dublin 4, Ireland

**Introduction** Association between individual birth measures and chronic disease morbidity or mortality in their adult relatives contributes to evidence of developmental origins of disease.

Internationally, only three studies to date have explored this inter-generational risk association with grandparents. We prospectively examine the relationship between infants' birth-weights and all-cause mortality of their grandparents.

**Methods** In 2001–2003 the cross-generation cohort study was established at antenatal stage with 1082 participating families, including 1184 grandparents (455 maternal-grandmothers, 271 maternal-grandfathers, 277 paternal-grandmothers and 181 paternal-grandfathers). Grandparents' morbidity and mortality was followed through cohort management. In 2010, the computerised death registry at the General Registrar's Office was searched for any grandparental deaths. HRs were calculated with Cox regression models, adjusted as appropriate for child's gestational age and gender, grandparent's age, mother's age, maternal smoking and height at pregnancy.

**Results** A total of 85 deaths were registered. An association between lower birth-weight infants (both <2500 g and <3000 g) and grandparental mortality was seen only in maternal line families. A U shaped association with maternal-grandmother's mortality was also consistently observed, but did not reach statistical significance, whether adjusted or not for maternal characteristics [LBW: adjusted-HR (95% CI)=4.2 (0.5 to 37.6); HBW: adjusted-HR (95% CI)=1.3 (0.4 to 4.0)]. Conversely, a significant direct relationship emerged between paternal-grandfather's mortality and higher birth-weight infants ( $\geq 4000$  g) [HR (95% CI)=3.9 (1.2 to 12.0)]. Controlling for maternal characteristics at pregnancy did not attenuate the relationship, but rather strengthened the risk [adjusted-HR (95% CI)=4.5 (1.4 to 14.9)].

**Conclusion** These findings are consistent with other studies in showing that maternal and paternal lines of transmission of risk differ, meriting further genetic and possible nutrigenomic investigation.

## P2-280 WATER AND SUGAR SWEETENED BEVERAGES CONSUMPTION AND CHANGE IN BODY MASS INDEX AMONG BRAZILIAN 4<sup>TH</sup> GRADERS AFTER ONE SCHOOL YEAR FOLLOW-UP

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<sup>1</sup>R Sichieri, \* <sup>2</sup>E M Yokoo, <sup>3</sup>R A Pereira, <sup>3</sup>G V Veiga. <sup>1</sup>State University of Rio de Janeiro, Rio de Janeiro, Brazil; <sup>2</sup>Federal Fluminense University, Rio de Janeiro, Brazil; <sup>3</sup>Federal University of Rio de Janeiro, Rio de Janeiro, Brazil

**Introduction** Drinking water has been associated to weight loss in experimental controlled studies and also with reduced weight gain in observational studies, whereas sugar sweetened beverage (SSB) consumption is associated with weight gain, mainly among adolescents. We examined whether water consumption displace SSB and whether the changes in body mass index (BMI) was associated with water and beverage intake.

**Methods** A randomised school trial of 4<sup>th</sup> graders from 22 public schools of the city of Niterói, Rio de Janeiro, Brazil, followed students during one school year. Most of the 1134 participants were 10–11 years old. Baseline consumption of water and SSB were evaluated using a drinking frequency questionnaire and one 24-h recall.

**Results** At baseline, a higher frequency of drinking water was associated with a greater intake of juices ( $p=0.02$ ) and sodas ( $p<0.0001$ ). Baseline frequency of drinking water was negatively associated with one year weight change (regression coefficients of  $-0.21$ ) comparing more than three glasses of water per day with  $<3$  ( $p=0.04$ ), whereas for an increase in one glass of juice there was an increase of 0.15 units of BMI ( $p=0.002$ ). After adjustment for physical activity and mutually adjustment for water and SSB results were materially unchanged.

**Conclusion** Our findings confirm the protective effect of drinking water while drinking juices was a risk factor for BMI gain. There was no compensation between water and SSB consumption, therefore the marketing of increasing water consumption would not prevent the excessive weight gain.

## P2-281 PREVALENCE OF HEARING LOSS IN HIV-INFECTED BRAZILIAN CHILDREN AND ADOLESCENTS

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<sup>1</sup>A M Silva,\* <sup>1</sup>M D R D O Latorre, <sup>1</sup>L F Tanaka, <sup>1</sup>T C R Oliveira, <sup>1</sup>E C Mendes, <sup>2</sup>H H Sousa Marques. <sup>1</sup>School of Public Health, University of São Paulo, São Paulo, Brazil; <sup>2</sup>School of Medicine, University of São Paulo, Children's Institute, São Paulo, Brazil

**Introduction** Children and adolescents living with HIV/AIDS may suffer from a variety of hearing problems which are more frequent and sometimes more severe when compared to other children. The objective of this study was to estimate the prevalence of hearing loss and its risk factors in children and adolescents attending the Childhood HIV Treatment Institute (ICr).

**Methods** Audiologic evaluation was conducted on patients attending at the ICr. Otoscopy was completed prior to audiologic evaluation which was composed of pure tone audiometry, tympanometry and tests of acoustic reflexes. We used the Bureau International d'Audio Phonologie (BIAP) classification to classify hearing loss. The statistical analysis was done using  $\chi^2$  test and univariate and multiple logistic regression models.

**Results** The prevalence of hearing loss was 35.8%. From 106 patients, 22 (58.0%) had conductive hearing loss, 9 (23.6%) had mixed hearing loss and 7 (18.4%) had sensorineural hearing loss. The risk factors for hearing loss were the occurrence of suppurative otitis media (OR=5.7,  $p=0.001$ ) and use of lamivudine (3TC) (OR=5.8,  $p=0.028$ ).

**Conclusion** Hearing loss is an important side effect in children and adolescents with HIV/Aids. The occurrence of suppurative otitis media and the use of lamivudine contribute to hearing loss in this population. Early detection, evaluation and observation of hearing loss is extremely important in order to prevent severe auditory sequelae.

## P2-282 HEARING COMPLAINTS IN HIV-INFECTED BRAZILIAN CHILDREN AND ADOLESCENTS

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<sup>1</sup>A M Silva,\* <sup>1</sup>M D R D O Latorre, <sup>1</sup>L F Tanaka, <sup>1</sup>T C R Oliveira, <sup>1</sup>E C Mendes, <sup>2</sup>H H Sousa Marques. <sup>1</sup>School of Public Health, University of São Paulo, São Paulo, Brazil; <sup>2</sup>School of Medicine, University of São Paulo, Children's Institute, São Paulo, Brazil

**Introduction** Hearing complaints are important signs that may indicate occurrence of hearing loss. Children and adolescents with HIV/AIDS presents some hearing complaints which are more frequent and sometimes more severe when compared to other children. The objective of this study was to describe the prevalence of hearing complaints in children and adolescents attended at the Childhood HIV Treatment Institute (ICr).

**Methods** We evaluated 106 patients who are currently attending at the ICr. All information was obtained from parents' interview and hearing evaluation. The  $\chi^2$  test was performed.

**Results** Males represented 53.8% of patients. Age ranged from 5 to 19 years (mean: 13 years) and most frequent age group was