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POSTPARTUM DEPRESSION, AN INDEPENDENT RISK FACTOR FOR WHEEZE IN PRE-SCHOOL GIRLS. *M Alton, S Tough, Pr Mandhane, A Kozyrskyj (University of Alberta, Edmonton, AB, Canada T6G2J3)

Postpartum depression is a serious health concern, affecting over 10% of child-bearing women. A growing body of evidence links maternal stress with poor child health outcomes, including asthma. We sought to discover whether postpartum depression has an effect on the development of wheeze in preschool children, independent of prenatal stress. Data were obtained from the Community Perinatal Care trial. This included information regarding postpartum depression, prenatal distress and other pre/postnatal exposures, and child wheeze at age 3 from 791 women and their children in Calgary. Logistic regression analysis was performed to investigate the association (odds ratio [OR], 95% confidence interval [CI]) between postpartum depression and wheeze at age 3. Models were adjusted for the following asthma risk factors: distress in pregnancy, maternal smoking, preterm birth and duration of exclusive breastfeeding. An a priori decision was made to stratify analyses by sex because of differences in stress response between boys and girls. 54 women experienced postpartum depression. Postpartum depression (OR: 4.68, 95% CI: 1.20-18.3) and severe distress in pregnancy (OR: 4.41, 95% CI: 1.15-16.9) were significant univariate determinants of wheeze in girls. When adjusted for prenatal distress, maternal smoking and other asthma risk factors, postpartum depression remained a significant predictor of wheeze in girls (OR: 4.77, 95% CI: 1.13-20.1). Our findings reveal that postpartum depression may be a risk factor for wheeze in girls. Health initiatives targeting maternal depression may reduce the risk of respiratory conditions in children.

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ASTHMA PREVALENCE IN SCHOOL CHILDREN: EXTENSIVE GEOGRAPHIC VARIATION WITHIN A STATE. * S H Weiss, (UMDNJ-NJ Medical School, Newark, NJ 07107)

National surveys have had insufficient power to examine local variation in asthma prevalence (AP). Administrative database analyses (eg, Emergency Dept or Hospital Discharge records) primarily reflect acute asthma exacerbation or severe disease. New Jersey (NJ) state law enables children with signed doctors' orders to carry inhalers in school. NJ schools are required to have nurses, who are uniquely positioned to know how many students have asthma. In 2001, 2004, 2005, 2007 & 2010, a state-wide community health organization sent a survey to school nurses, including a query as to how many students had asthma. Data were linked with annual school-level data from the National Center for Education Statistic's Common Core of Data & Private School Universe Surveys, & US Census data. 3009 responses were received. 2469 had asthma data, representing 1609 (1316 public) schools with 49% of all NJ students & enumerating 68,848 children with asthma. SAS & Geographic Information Software (GIS) were used. There was limited AP variation by mean grade. AP in public vs private schools were similar. AP in public school children ranged ~2-fold in the 21 counties, from 7.6% to 13.1% with spatial clustering (Moran's Global I $p < .01$; Moran's Local I identified specific counties). Surprisingly, AP tended to be higher in southern, non-urban regions. AP in municipalities & in school districts ranged over a 100-fold span, with several significant local clusters. Population density did not correlate with AP. School-level AP positively correlated with Black race, & negatively with Asian race & socioeconomic status. Low AP clusters were identified in some upper-class municipalities & high AP clusters in some urban areas. The causes underlying the unexpectedly wide & extensive AP variation merit further epidemiologic investigation.

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PATTERNS OF LUNG FUNCTION DECLINE IN ADULTS PREDICT MORBIDITY AND MORTALITY. *P Baughman, J L Marott, P Lange, E Hnizdo (National Institute for Occupational Safety and Health, Division of Respiratory Disease Studies, Morgantown, WV 26505)

Background: Increased lung function decline is associated with increased risk of chronic obstructive pulmonary disease (COPD) morbidity and mortality and all-cause mortality, but these associations are not fully explored in long-term patterns of lung function decline or in younger individuals. Methods: Risks of morbidity and mortality were estimated for temporal patterns of decline in forced expiratory volume in one second (FEV_1) and for age at lung function decline in the Copenhagen City Heart Study, 1976–2003. Using Cox regression, risks associated with temporal patterns of decline were studied by estimating the rate of decline over two time periods to identify patterns of early, late, or persistent excessive decline in individuals present throughout the study. Cox models were stratified by baseline age ($\leq$ 45 and $>$ 45 years) to examine the effect of age on risk associated with excessive decline. Models were adjusted for baseline age, height-adjusted baseline level of lung function ($FEV_1/Height^3$), height, asthma, and respiratory symptoms. Hazard ratios and 95% confidence intervals (CI) estimated risk by gender and for never smokers. Results: For COPD morbidity, hazard ratios (CI) for persistent excessive decline were 6.48 (2.70–15.54) for males and 3.56 (1.71–7.40) for females. In an overall analysis, for individuals 45 years of age or younger, hazard ratios (CI) were 2.09 (1.18–3.70) for males and 5.76 (3.41–9.74) for females. Conclusions: A persistent pattern of lung function decline and increased lung function decline in individuals 45 years or younger were significant predictors for increased future respiratory morbidity and mortality.

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THE ASSOCIATION BETWEEN OBSTRUCTIVE SLEEP APNEA AND PERIODONTAL DISEASE: A PRELIMINARY STUDY *E R Cho, W H Seo, R J T, J J Ryu, H Kim, S J Kim, J H Kim, C Shin (Institute of Human Genomic Study, College of Medicine, Korea University, Republic of Korea)

Obstructive sleep apnea (OSA) is a common disorder characterized by repeated disruptions in breathing during sleep. Based on the fact that mouth breathing is a common characteristic among OSA patients, the objective of this study was to assess the hypothesis that OSA may influence the onset and progression of periodontal disease. The study recruited total 403 participants (235 men and 168 women, aged 40-76 years) in 2009 and 2010 as part of Korean Genome and Epidemiology Study (KoGES), and they underwent standard polysomnography (PSG), clinical periodontal examination, and health screening examinations. Periodontitis, defined as presence of at least four teeth with one or more interproximal sites with probing pocket depth (PPD) $\geq$ 3mm and clinical attachment level (CAL) $\geq$ 4mm, was associated with OSA (AHI $\geq$ 5) by logistic regression analysis. Results show that 23.6% of participants had snoring, 13.4% had mouth breathing in sleep, and 46.2% had OSA. The prevalence of periodontitis was determined from 5.96% and 28.54% of participants who fit PPD and CAL criteria, respectively. OSA was positively associated with PPD (Odds Ratio (OR) = 3.58, 95% Confidence Interval(CI):1.36-9.46) and CAL (OR = 1.75, 95% CI:1.07-2.87) in a dose-response manner. Additionally, OSA was positively associated with PPD (OR = 7.80, 95% CI:1.51-40.23) and CAL (OR = 2.17, 95% CI:1.15-4.11) in $\geq$ 55 age group, whereas no association was observed in the $<$ 55 age group. We conclude that OSA influences the incidence and progression of periodontal disease. Treatment of OSA may reduce prevalence and progression of periodontal disease.

 * = Presenter; S = The work was completed while the presenter was a student