

## **Birth weight, household smoking, and the risk of wheezing in one million adolescents: a retrospective cohort study**

Meng-Hung Lin, Wen-Chao Ho, Pau-Chung Chen, Trong-Neng Wu, Ruey-Shiung Lin

Birth weight and environmental tobacco smoke (ETS) has been reported as a risk factor for childhood respiratory health. The combined effect of birth weight and ETS on adolescence wheezing remains less well known. The aim is to examine the independent and combined effects of birth weight and ETS on the prevalence of wheezing in adolescents. A retrospective cohort study of national survey of allergic among 1,018,031 junior high school students has been in progress in Taiwan during 1995 and 1996. Questionnaire responses by parents were used to ascertain disease status and adolescents' exposure. The logistic regression models were used to assess the effects of interests on the prevalence of wheezing. The risk of wheezing increased linearly with increasing amount of household cigarettes per day. Low birth weight (LBW, <2.5 kg) compared with normal birth weight (2.5–4.0 kg) was associated with an increased risk of wheezing (multivariate odds ratio = 1.07, 95% CI: 1.003–1.137). Furthermore, we detected an interaction between birth weight and ETS on adolescence wheezing. LBW had significant adverse effects on wheezing among adolescents with high household cigarettes exposure (OR = 2.77, 95% CI: 1.58–4.85) than the normal birth weight. A significant dose-response association between ETS exposure and the prevalence of wheezing was clearly demonstrated. We concluded that LBW and ETS exposure had significant adverse effects on respiratory health in adolescents.

**Key words:** birth weight; household smoking; wheezing; adolescent