

RELATIONSHIP BETWEEN CHILDHOOD ASTHMA AND PLETHYSMOGRAPHIC LUNG VOLUME IN ADULT LIFE

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To determine whether the presence of features of asthma in childhood influences absolute lung volumes in adult life we analysed data from a cohort followed over a 20 year period. In 1982 we measured spirometric lung function and airway responsiveness (AHR and DRR) and collected respiratory symptom data by questionnaire in a general population of 718 children aged 7 to 10 years old in Belmont, NSW. In 2002, we measured lung volumes by whole body plethysmography in all available members of this cohort. The associations between spirometric and symptom parameters from 1982 and height-, gender- and smoking status-adjusted lung volumes measured in 2002 were examined using linear regression.

Data were obtained in both surveys on 303 subjects (148 males). Mean FEV₁/FVC in 1982 was lower in males than in females (p=0.0005) and, after adjusting for smoking, mean RV/TLC in 2002 was lower in males than in females (p<0.0001). Childhood FEV₁/FVC, AHR (or DRR) were not independent predictors of adult lung volumes. However, the presence of wheeze in the preceding 12 months in childhood was associated with higher TLC in adult life (adjusted mean difference = 0.53 L, p=0.009), higher RV/TLC (3%, p=0.02), higher FRC (0.45 L, p=0.03) and higher RV (0.54 L, p=0.0002, males only).

Conclusion: The presence of wheezing illness in childhood is associated with higher TLC, RV and RV/TLC as an adult.

Supported by University of Sydney Sesqui Scheme

Key words: asthma, lung volume, longitudinal study