

[Asia Pac J Public Health](#). 1995;8(3):190-4.

Flow volume curves as screening tests for early effects of smoking in asymptomatic children and young adults.

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Abstract

The objectives of this study were to investigate the early effects of smoking on ventilation function of the lungs of children and young adults, and to determine the suitable lung function tests that can be used for screening of this effect. Medical and personal questionnaires, spirometric tests for twelve different lung function indices as well as anthropometric measurements were conducted on 538 randomly selected asymptomatic subjects (134 smokers, 404 non-smokers). Smokers had significantly lower values for peripheral airway lung function tests compared to non-smokers and this is evident within a few years of initiating smoking. The number of cigarettes smoked per day was also significantly associated with decrease to these lung function parameters. Lung function tests suitable for screening were identified. The number of cigarettes and duration of smoking seem to interact to increase the insult on the peripheral airway function in children and young adults suggesting an irritant effect, probably mediated through an airway inflammation which starts at the periphery of the lungs. Lung function tests used here can be the early indicators of early changes in asymptomatic children and young adults and can be a valuable screening tool