

# Exposure to Environmental Tobacco Smoke among Infants in Southern Thailand: A Study of Urinary Cotinine

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**Abstract** We performed a survey to assess the exposure to environmental tobacco smoke (ETS) in 1-year-old infants in Thailand. Of the 725 infants, it was reported that 73.3% had household smoking and 40.7% had detectable urinary cotinine. Twenty-five infants (3.4%) had urinary cotinine in the range of adult heavy smokers. The prevalence of ETS exposure was significantly higher in infants with a father whose education was  $\leq$  grade 6 than in those with father's education  $>6$  years (44.0% vs. 36.0%,  $p = 0.039$ ). Data on the exposure to ETS among infants will provide prevalence information and identify population subgroups at increased risk for exposure.

**Keywords** Environmental tobacco smoke · Cotinine

Exposure of infants to environmental tobacco smoke (ETS) is associated with an increased risk of several respiratory illnesses (Margolis et al. 1997). Previous studies have demonstrated that ETS exposure can begin as early as the first year of life (Greenberg et al. 1989, 1991; Mascola et al. 1998). This observation, however, was from

a western population, in which prevalence of maternal smoking is generally much higher than in Asian countries. In Thailand, for instance, the prevalences of smoking among males and females over 15 years of age were 48.5% and 2.9%, respectively (National Statistics Organization of Thailand 2001). There has been no previous study attempting to assign some reliable figures for ETS exposure among infants in Thailand, however, so this study was undertaken to assess the extent of exposure to ETS in infants in southern Thailand by both interviewing the mothers and studying the infants' urinary cotinine, a metabolite of nicotine.

## Materials and Methods

The data for this study were collected as part of the larger "Prospective Cohort Study of Thai Children (PCTC)". The PCTC is an ongoing, observational community-based study begun in the year 2000. The birth cohort, born over a 1-year period in five selected sites in different regions of Thailand, will be observed and followed up longitudinally until they reach the age of 24 years. In this specific paper, because of the very high cost of cotinine analysis, we decided to perform the cotinine survey only in The-pa district in Songkhla province, a rural area. This area is demographically representative of southern Thailand, and also close to Prince of Songkla University where cotinine assays could be performed. Eligible infants were all infants who were born over the 1-year period of the study, from November 2000 to October 2001. The typical ETS exposure situation is that the parents who smoke usually smoke in the same room as the infants due to limitations of space in the home, however, the normal rural home style in Thailand is a single dwelling separate from other homes

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