



Thursday, December 16, 2010

Lingering Effects of Thirdhand Smoke

An SDSU study finds new residents are exposed to pollution in dust and surfaces from previous smoking tenants.

Thirdhand smoke - the residue left behind by cigarette smoking - can have lingering effects on future tenants.

By **Golda Akhgarnia**

Tobacco pollutants from cigarette smoke remain in smokers' homes after they move out and non-smokers move in, according to a new study released online today in the journal *Tobacco Control*.

Researchers found that new residents were exposed to tobacco smoke pollutants — also known as thirdhand smoke (THS) — even after the home remained vacant for two months and was cleaned and repainted for new residents.

Reservoirs of pollutants

“We found that thirdhand smoke is trapped on surfaces like walls and ceilings and in household dust and carpets left over by previous residents,” said Georg Matt, **San Diego State psychology** professor and lead researcher of the study, the first to examine whether THS persists in smokers homes after they move out.

“The homes of smokers become reservoirs of tobacco smoke pollutants. When new nonsmoking tenants come in contact with polluted surfaces and inhale suspended microscopic dust, they are unknowingly exposed to tobacco smoke toxins.”

THS consists of tobacco smoke pollutants that remain on surfaces and in dust after tobacco has been smoked, and are then re-emitted and suspended back into the air, or react with oxidants and other compounds in the environment to yield secondary pollutants.

Higher contamination levels

Matt and colleagues visited the homes of 100 smokers and 50 non-smokers before and after they moved out. Dust, surfaces, air and participants' fingers were measured for nicotine, and urine samples were analyzed for cotinine, a marker of tobacco smoke exposure among nonsmokers. Those samples were then collected from non-smoking residents who moved in afterward.

Researchers found higher contamination levels in dust and surfaces of former smokers' homes than non-smoker homes. Finger nicotine levels of new residents were also higher in former smokers' homes, which was correlated with dust and surface nicotine levels and urine cotinine levels.

Children more at risk

Although health outcomes have not yet been studied, THS poses a particular risk for infants and young children because of age-specific behaviors (e.g., crawling, sucking, ingesting non-food items, hand-to-mouth contact). In addition, infants' immature respiratory and immune systems, plus lower metabolic capacity, make the exposure to the toxins reported in THS a concern.