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News Release

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ATS Press Room: 415-978-3511 (May 20-23)

Thematic Poster Session: Sunday, May 20, 8:15 a.m. – 4:30 p.m.

Poster Viewing: 10:45 a.m. – 12:30 p.m.

Location: Area A (Hall D, North Building, Lower Level), Moscone Center

PRESS CONFERENCE: Tuesday, May 22, 11:30 a.m.

Study Says Children Exposed to Tobacco Smoke Face Long-Term Respiratory Problems

ATS 2012, SAN FRANCISCO – For more than three decades, researchers have warned of the potential health risks associated with exposure to environmental tobacco smoke (ETS), especially among children whose parents smoke. Now a new study conducted by researchers from the University of Arizona reports that those health risks persist well beyond childhood, independent of whether or not those individuals end up becoming smokers later in life.

The study will be presented at the ATS 2012 International Conference in San Francisco.

“This study shows that exposure to parental smoking increases the risk of persistence of respiratory symptoms from childhood into adulthood independent of personal smoking,” said Juliana Pugmire, MPH, DrPH., research specialist at the University of Arizona in Tucson.

“Persistent respiratory illness in childhood and young adulthood could indicate an increased risk of chronic respiratory illness and lung function deficits in later life.”

Although a significant proportion of children throughout the world are exposed to ETS, primarily as a result of their parents' smoking, there is little information regarding the long-term effects of that exposure, Dr. Pugmire noted.

“Earlier studies established a link between parental smoking and childhood respiratory illness, but in this study, we sought to demonstrate whether these effects persisted into adulthood,” she said. “A handful of studies examined whether children exposed to parental smoking had asthma that developed or persisted in adulthood but most did not find an association.

“We examined asthma as well as other respiratory symptoms and found that exposure to parental smoking had the strongest association with cough and chronic cough that persisted into adult life,” she continued. “Exposure to parental smoking also had effects, although weaker, on persistent wheezing and asthma in adulthood.”

The researchers drew data from the Tucson Epidemiological Study of Airway Obstructive Disease (TESAOD), a large, population-based, prospective study initiated in 1972 that enrolled 3,805 individuals from 1,655 households in the Tucson area in an effort to assess prevalence rates and risk factors of respiratory and other chronic diseases. Participants were asked to complete questionnaires that were issued every two years until 1996. For this study, the researchers used data from 371 individuals who were enrolled in the TESAOD as children.

“We identified individuals who entered the TESAOD study when they were under 15 years of age and who were followed to adulthood during the study,” Dr. Pugmire said. “When we collected data from the child participants, we also collected information about the parents' smoking status.”

Dr. Pugmire and her colleagues looked at the reported prevalence of active asthma, wheeze, cough and chronic cough, which was defined as a persistent cough that had occurred for three consecutive months. They then divided the data into four categories: never, which included individuals who had not reported that symptom during childhood or adulthood; incident, which included individuals who had never reported the symptom in childhood, but had reported at least one incident in adulthood; remittent, including participants who reported at least one incident in childhood and none in adulthood; and persistent, which included individuals who had at least one report of a symptom during both childhood and adulthood.

Once the data were collected, the researchers determined that 52.3 percent of children included in the current study were exposed to ETS between birth and 15 years. After adjusting for sex, age, years of follow-up and personal smoking status, the researchers found that ETS exposure in childhood was significantly associated with several persistent respiratory symptoms, including persistent wheeze, cough and chronic cough.

“Persistent wheezing from childhood into adult life has been shown to be associated with lung function deficits. Chronic bronchitis (defined as chronic cough and phlegm) is a significant risk factor for chronic obstructive pulmonary disease (COPD) development later in life. Therefore, the persistence of symptoms like chronic cough and wheeze into young adulthood may indicate a

susceptibility to lung function deficits and chronic respiratory illness with age,” Dr. Pugmire noted.

Future studies will be needed to examine the potential synergistic effects of personal smoking and exposure to parental smoking on risk of COPD morbidity and mortality in middle to late adult life, she added.

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“Respiratory Health Effects Of Childhood Exposure To Environmental Tobacco Smoke In Children Followed To Adulthood” (Session A50, Sunday, May 20, 8:15 a.m. – 4:30 p.m., Area A, Moscone Center; Abstract 31998)

** Please note that numbers in this release may differ slightly from those in the abstract. Many of these investigations are ongoing; the release represents the most up-to-date data available at press time.*

Abstract 31998

Respiratory Health Effects Of Childhood Exposure To Environmental Tobacco Smoke In Children Followed To Adulthood

Type: Scientific Abstract

Category: 06.12 - Smoking Health Effects (EOH)

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Abstract Body

Rationale: A significant proportion of children are exposed to environmental tobacco smoke (ETS) throughout the world. The primary source is parental smoking. It is unknown to what extent the negative effects of ETS on respiratory symptoms track from childhood into adulthood. **Methods:** TESAOD (Tucson Epidemiologic Study of Airway Obstructive Disease) is a large population-based prospective study that was initiated in 1972.

Participants were followed prospectively with questionnaires completed every two years in 12 follow-up surveys up to 1996. We identified subjects who entered the study as children (<15 years old) and were followed to adulthood (>18 years) during the study follow-up.

Based on questionnaire data, active asthma, wheeze, cough, and chronic cough (cough for three consecutive months) were coded as never (never reported in childhood or adulthood), incident (never reported in childhood, but \geq one positive report in adulthood), remittent (\geq one positive report in childhood, but not in adulthood), and persistent (\geq one positive report both in childhood and adulthood). Parent information on smoking status was collected simultaneously with child questionnaires. ETS exposure status was assessed as “ever” or “never” based on either parent reporting current smoking between the child’s birth and 15 years. **Results:** Information on parental ETS exposure in childhood and outcomes in adulthood was available for 371 non-Hispanic white participants (53.4% male) with mean age at initial survey of 7.3 years. Total mean follow-up time was 19.2 years (8.5 years in

adulthood). Between birth and 15 years, 52.3% of children were exposed to ETS. After adjusting for sex, age, years of follow-up, and personal smoking status (assessed at age 15 and above), ETS exposure in childhood was significantly associated with persistent wheeze (RR_{adj} 1.9, $p=0.026$), persistent cough (RR_{adj} 5.9, $p<0.001$), and persistent (RR_{adj} 3.7, $p=0.030$) and incident chronic cough (RR_{adj} 2.3, $p=0.040$). Other outcomes were not significantly associated with ETS exposure. **Conclusions:** Exposure to parental smoking increases the risk of persistence of respiratory symptoms from childhood into adulthood independent of personal smoking.

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