CHEST News Release

AMERICAN COLLEGE OF CHEST PHYSICIANS

EMBARGOED UNTIL OCTOBER 11
5 PM EASTERN

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ENVIRONMENTAL EXPOSURES BEFORE AND AFTER BIRTH CAN HARM CHILDREN'S LUNGS

Asthma Symptoms in Infants Caused by Combustion Pollutants and Tobacco Smoke

(NORTHBROOK, IL, October 11, 2004) – Children prenatally exposed to pollutants, such as motor vehicle exhaust, and postnatally exposed to environmental tobacco smoke (ETS) may be more likely to suffer from asthma and related symptoms early in life. A new study in the October issue of *CHEST*, the peer-reviewed journal of the American College of Chest Physicians, shows that young children who are exposed to these pollutants may be significantly more likely to develop respiratory conditions at ages 12 and 24 months.

"A great deal of new evidence suggests that the respiratory system may be vulnerable to damage caused by inhaled environmental agents during the prenatal period," said Rachel L. Miller, MD, the study's lead author at the Columbia Center for Children's Environmental Health, part of the Columbia University Mailman School of Public Health, New York, NY.

"This study indicates that the combination of exposure to combustion by-products in the womb and to second-hand smoke during infancy can cause significantly more respiratory problems than either exposure on its own," added Dr. Frederica Perera, the study's Principal Investigator and Director of the Center.

Researchers from the Columbia Center for Children's Environmental Health studied 303 pregnant Dominican and African-American women, all nonsmokers, who were enrolled as part of a large prospective cohort study following mothers and their children for several years after delivery to examine effects of environmental pollutants. The researchers measured each woman's prenatal exposure to airborne polycyclic aromatic hydrocarbons (PAHs) through personal air monitors and

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questionnaires, and distributed additional periodic questionnaires to monitor the children's respiratory health. Study results show that children exposed prenatally to PAHs and postnatally to ETS were more likely to cough and wheeze at 12 months of age and experienced more difficulty breathing, as well as higher incidences of asthma symptoms, at 24 months of age. Although the researchers found increased respiratory symptoms at 12 and 24 months, they did not find a relationship between PAHs, ETS, and respiratory symptoms when the children were 6 months old. These findings may suggest that the harmful effects on the lung develop after prolonged or later exposure to ETS.

"At this point we can only speculate how PAH exposure, in conjunction with ETS, causes respiratory damage," said Dr. Miller. "One possibility is that PAHs, which easily reach the fetus and damage DNA, affect the child's developmental programming, which then leaves the child's airways at risk for future harm."

People living in high-traffic areas and poor housing are at especially high risk for PAH and ETS exposure. PAHs can come from motor vehicle emissions, residential heating, power generation, tobacco smoking, and other combustion sources. While PAHs and ETS can harm boys and girls, the study found preliminary evidence that the combination more often leads to cough and wheeze in boys, possibly because boys tend to have smaller airways, which may increase the risk for airway hyperreactivity or inflammation-induced respiratory symptoms.

"The congestion and pollution found in most large cities can compromise the respiratory health of children in these areas," said Richard S. Irwin, MD, FCCP, President of the American College of Chest Physicians. "This study reinforces the importance of society doing a better job protecting the health of children living in inner-cities, even before they are born."

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RESPIRATORY THERAPISTS TWICE AS LIKELY TO HAVE ASTHMA THAN OTHER THERAPISTS

Exposure to Patient Treatments May Increase Therapists' Asthma Risk

(NORTHBROOK, IL, October 11, 2004) – Respiratory therapists are at an increased risk of developing asthma and asthma-related symptoms due to their involvement in the diagnosis and treatment of patients with respiratory conditions. A new study in the October issue of *CHEST*, the peer-reviewed journal of the American College of Chest Physicians (ACCP), showed that respiratory therapists have an elevated prevalence of asthma diagnosis after they enter into the profession and, when compared to physiotherapists, are more than twice as likely to develop respiratory symptoms. The study also found that the administration of specific aerosolized medications and the use of certain diagnostic equipment were associated with an increased risk of asthma.

"Respiratory therapists play a significant role in the diagnosis and treatment of respiratory conditions in patients. However, routine monitoring and care of patients can expose therapists to trace amounts of airborne agents that can trigger respiratory symptoms and cause exacerbations of acute asthma," said lead author Helen Dimich-Ward, PhD, University of British Columbia, Vancouver, British Columbia, Canada. "Although long-term use of protective masks may not be practical in undertaking certain procedures, their use and the use of other personal protection items are essential when caring for patients who are infectious."

Researchers from the University of British Columbia examined the link between asthma diagnosis and prevalence of respiratory symptoms in respiratory therapists based on their work-related risk factors. Researchers compared personal and work characteristics between 275 respiratory therapists and a control group of 628 physiotherapists (also known as physical

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therapists). After adjusting for age, gender, childhood asthma, and smoking status, results showed that respiratory therapists were twice as likely as physiotherapists to have reported asthma and respiratory symptoms of wheeze, dyspnea, and asthma attacks. Respiratory therapists who administered aerosolized ribavirin, compared to those who did not, were more than twice as likely to have an asthma attack in the last 12 months and to receive an asthma diagnosis since they began their profession. Respiratory therapists who used an oxygen tent or hood were eight times more likely to have asthma and over three times more likely to have experienced an asthma attack in the past year than those who did not use the equipment. Respiratory therapists who reported sterilizing instruments with glutaraldehyde-based solutions once a month or more, in comparison to those who did not, showed a higher prevalence of wheezing, waking by cough, and reported asthma. In addition, respiratory therapists who perceived their workplace to have inadequate ventilation had an increased risk of waking by cough or by shortness of breath.

Working more than 35 hours per week also was associated with the prevalence of wheeze and waking by cough. Although the majority of respiratory therapists worked at night or on rotating shifts, there was no association of respiratory symptoms or reported asthma with working a graveyard shift or rotating shifts or with treating children less than six years of age at least once a week. Personal protective equipment was worn by 67 percent of respiratory therapists, with nearly 50 percent wearing latex gloves and 36 percent using glasses or goggles.

"It is important for respiratory therapists and other medical professionals to recognize and understand the possible respiratory effects related to the administration of aerosolized substances and take appropriate steps to minimize their exposures to these medications during patient diagnostic procedures and treatments," said Richard S. Irwin, MD, FCCP, President of the American College of Chest Physicians.

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SMOKING CESSATION CAN IMPROVE SURVIVAL AMONG PATIENTS WITH SEVERE COPD

Smoking Intensity and Current Smoking Status Strong Predictors of Mortality

(NORTHBROOK, IL, November 8, 2004) – Patients with severe chronic obstructive pulmonary disease (COPD) who stop smoking may be able to improve their rate of survival, despite the severity of their lung disease. A new study in the November issue of *CHEST*, the peer-reviewed journal of the American College of Chest Physicians (ACCP), showed that patients with severe, early-onset COPD who continued to smoke had a risk of mortality that was almost three times that of patients who stopped smoking. The study also reported that greater smoking intensity increased the risk of mortality among COPD patients, with patients who had the greatest smoking intensity having the highest risk of mortality.

"Lifetime smoking intensity and current smoking status independently increased mortality in our patients with severe COPD," said Craig P. Hersh, MD, Channing Laboratory, Department of Medicine, Brigham and Women's Hospital, Boston, MA. "However, patients who continued smoking significantly reduced their survival rate, which confirms the importance of smoking cessation even in patients with the most advanced stages of lung disease."

Dr. Hersh and colleagues utilized data from the Boston Early-Onset COPD Study to determine the natural history of severe, early onset COPD and the survival rates of patients under age 53 during a follow-up period of 2 months to 8 years. Of the 139 patients (72.7 percent women) studied, 37 patients died within the study period, with the majority of deaths due to cardiorespiratory illness. Overall survival rates were 85 percent at 3 years and 72 percent at 5 years. Patients who smoked during the study period had a risk of mortality that was almost three times that

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of patients who stopped smoking. In addition, greater smoking intensity was associated with decreased survival, and the risk of mortality increased by 20 percent for each 10 pack-years of smoking.

"As age increases, so does the risk of mortality in patients with COPD," added Dr. Hersh. "Yet, the relatively young patients in our study had a high rate of mortality, despite their young age."

Although women made up the majority of patients in the study, both groups had similar rates of survival. In addition to age and gender, symptoms of chronic bronchitis, bronchodilator responsiveness, underweight, home oxygen use, pulmonary rehabilitation, and lung volume reduction surgery were not significant predictors of survival.

"The large number of female patients with severe, early-onset COPD has been an interesting finding of our study that we have not yet been able to explain fully," said Edwin K. Silverman, MD, PhD, the Principal Investigator of the Boston Early-Onset COPD Study and senior author of this manuscript. "It is possible that women are more susceptible to the harmful effects of cigarette smoke and that this increased susceptibility has not been appreciated due to the historically higher rates of smoking among men."

COPD is the fourth leading cause of death in the United States, with mortality rates significantly increasing among women each year. COPD is currently diagnosed in at least 10 million Americans, and the majority of cases are attributed to long-term cigarette smoking.

"As seen in this study and many others, the most effective treatment for COPD is smoking cessation," said Paul A. Kvale, MD, FCCP, President of the American College of Chest Physicians. "Regardless of a patient's age or disease severity, physicians should ask all patients about smoking status. Physicians also should encourage smoking cessation in all patients who smoke and continue to motivate their patients throughout the cessation process."

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RACE MAY AFFECT WEIGHT AND FITNESS LEVEL
African-Americans More Obese and Less Fit Than Caucasians

(NORTHBROOK, IL, December 13, 2004) – Race may play an important role in determining a person's obesity and fitness levels, shows a new study in the December issue of *CHEST*, the peer-reviewed journal of the American College of Chest Physicians (ACCP). The study found that African-American patients had a higher level of obesity and a lower exercise capacity compared to Caucasian patients, with the most pronounced difference found between African-American and Caucasian males.

"There is a popular belief among the lay public and by many clinicians that African-Americans are more fit than Caucasian patients. However, our findings suggest this is not the case," said Carl J. Lavie, MD, Ochsner Clinic Foundation, New Orleans, LA. "Despite being older, Caucasian patients in our study had significantly higher exercise capacities and lower obesity levels than African-Americans, suggesting that some races may be more susceptible to increases in weight and decreases in fitness levels."

Researchers from the Ochsner Heart and Vascular Institute at the Ochsner Clinic Foundation compared obesity status and exercise capacity among African-American and Caucasian men and women in order to determine if race was an independent predictor of fitness. Dr. Lavie and colleagues studied 4,428 Caucasian and 641 African-American patients, ages 52 to 74, who were referred for an exercise stress test for the detection of coronary artery disease (CAD). Exercise capacity was determined using a standard treadmill test, and obesity status was determined by body mass index (BMI). Results showed that within the entire cohort, African-

Americans had a 7 percent lower exercise capacity compared to Caucasians. In regard to gender, African-American men were, on average, 3 years younger, had a higher baseline BMI, a higher prevalence of obesity and severe obesity, and an exercise capacity that was 7 percent lower than their Caucasian counterparts. Compared to Caucasian women, African-American women were, on average, 4 years younger, had considerably higher BMIs, and a significantly higher prevalence of obesity and severe obesity. African-American women also had a slightly lower exercise capacity than Caucasian women, although the difference was not significant. Overall, Caucasian race, younger age, male gender, and lower BMI were all independent predictors of higher exercise capacity. The prevalence and severity of CAD were similar in both races.

"Our society is known for high-calorie, high-fat, and high-sugar diets, lack of exercise, and sky-rocketing prevalence of obesity and diabetes, all of which have been associated with an increased risk in cardiovascular disease," said Dr. Lavie. "With CAD being a significant health threat among African-Americans, a greater effort is needed to direct health and exercise programs toward this population."

"Obesity and physical inactivity have become major health concerns in the United States, being linked to cardiovascular disease, respiratory and sleep disorders, diabetes, and many other medical conditions," said Paul A. Kvale, MD, FCCP, President of the American College of Chest Physicians. "Although African-American patients may be particularly at risk for obesity and lower exercise capacity, it is important for physicians to encourage all patients to maintain a healthy weight and lifestyle in order to avoid serious health complications in the future."

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AMERICAN COLLEGE OF CHEST PHYSICIANS INDUCTS NEW PRESIDENT

Paul A. Kvale of Henry Ford Health System To Lead ACCP 'Pro Bono' Initiative

(NORTHBROOK, IL, December 17, 2004) – Paul A. Kvale, MD, FCCP, was inducted as President of the American College of Chest Physicians (ACCP) at CHEST 2004, the College's 70th annual international scientific assembly, held October 23-28, in Seattle, WA. Dr. Kvale is a pulmonologist at Henry Ford Health System in Detroit, MI, and is Professor of Medicine at Case Western Reserve University School of Medicine in Detroit. In his new role as ACCP President, Dr. Kvale plans to emphasize the need for pro bono work by ACCP membership while also recognizing the current pro bono activities of ACCP members and The CHEST Foundation, the philanthropic arm of the ACCP.

"Pro bono activities and the mission of The CHEST Foundation are two important components in the total assurance of fulfilling our patients' needs," said Dr. Kvale. "We have been given a tremendous legacy by all of the ACCP leaders who have preceded me. These leaders, who have volunteered their time and resources, have set the stage for an expansion of pro bono activities by all ACCP members."

As an active Fellow of the ACCP for nearly 30 years, Dr. Kvale has served as ACCP Governor for Michigan; a Regent-at-Large; a *CHEST* Department Editor and member of the *CHEST* Editorial Board; and a member of numerous ACCP Committees and NetWork Steering Committees.

Dr. Kvale attended medical school at the Medical College of Virginia and moved to Michigan for his postdoctoral training. He has continued to work as a pulmonologist at Henry Ford Health System for his entire professional career. Dr. Kvale's primary interests are bronchoscopy,

interventional procedures, lung cancer, and occupational lung diseases. He is currently the principal investigator for two National Cancer Institute-sponsored cancer detection studies, the Prostate, Lung, Colon and Ovarian [PLCO] and National Lung Screening Trial [NLST]. He has published over 100 peer-reviewed articles and more than 15 book chapters.

"With more than 16,000 members, ACCP is the largest organization of chest physicians in the world. ACCP members, who represent all disciplines involved in caring for patients with chest disease, are uniquely positioned to make inroads for optimal care of patients in the United States and worldwide," said Dr. Kvale. "With just a few hours a month donated by ACCP members, we could accomplish a great deal in addressing the needs of patients."

Dr. Kvale and his wife Susan live in St. Clair Shores, MI. Susan Kvale became chair of The CHEST Foundation Ambassadors Group at CHEST 2004. The Ambassadors Group comprises ACCP spouses and other interested individuals who serve as emissaries to help the ACCP and The CHEST Foundation improve patient care and lung health through education.

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