Passive smoking risk proves a family affair

The risk that a nonsmoking woman will develop lung cancer may depend in part on whether her husband smokes, but not on her childhood exposure to a smoking parent. However, a mother's smoking may sometimes boost a child's risk of developing asthma, a respiratory illness characterized by breathing difficulties. Those conclusions, derived from two new scientific reports, add grim details on the hazards of living in a smoke-filled home.

Previous studies of nonsmokers have suggested a lung-cancer link to passive smoking – the inhalation of smoke from another's cigarettes (SN: 7/7/90, p.4). However, owing to their small number of participants, those studies lacked statistical strength and reliability. In the largest study of lung cancer in nonsmoking women, epidemiologist Elizabeth T. H. Fontham of the Louisiana State University Medical Center in New Orleans and her colleagues confirm those earlier findings.

Described in the just-released November/December 1991 CANCER EPIDEMIOLOGY, BIOMARKERS & PREVENTION, the study involved 1,551 female volunteers: 780 women from the general population, 420 with lung cancer and another 351 with colon cancer. (The researchers included the colon cancer recruits to ensure that a diagnosis of cancer didn't affect the ability to recall smoke exposure.)

Each participant described herself as a lifetime nonsmoker. To help verify that claim, the researchers tested each woman's urine for cotinine, a breakdown product of nicotine. The team also surveyed the women about their exposure to smoke from cigarettes, cigars or pipes.

Women with lung cancer were more likely to live with a spouse who smoked than were women in either of the other groups. From these data, Fontham's team now estimates that living with a smoking husband increases a nonsmoker's lung-cancer risk by 30 percent. This group of women also faces a 50 percent greater threat of adenocarcinoma, the most common lung cancer in women.

One particularly intriguing finding: The team discovered no link between lung cancer risk and childhood exposure to a parent's smoking.

Although a smaller study by Dwight T. Janerich of Yale University and his coworkers reported finding just the opposite in 1990 – no link to a spouse's smoking and a small, increased cancer risk from exposure to parental smoking – that study showed "no clear dose-response relationship." By contrast, Fontham's group did observe a pronounced dose-response relationship: Those women facing the greatest exposure to passive smoke also incurred the greatest risk of lung cancer. "That certainly suggests that it's a real effect," Fontham says.

However, Fontham and other researchers charge, a smoky home may still harm children. And a new report in the January PEDIATRICS by pediatrician Fernando D. Martinez and his colleagues at the University of Arizona College of Medicine in Tucson supports that claim.

Starting in 1972, the researchers recruited 786 children, aged 5 or younger, and then interviewed the parents extensively about their smoking habits and level of education, one measure of socioeconomic status. Over the next seven years, Martinez' team tracked the development of asthma in those youngsters. Among children of women who had completed 12 or fewer years of schooling, those whose mothers smoked more than 10 cigarettes daily proved 2.5 times more likely to develop asthma than did children whose mothers did not smoke.

However, the team observed no link between smoking and asthma among children of women with more than 12 years of education. The finding suggests these women may expose their children to less second-hand smoke, perhaps by confining their smoking to a specific room in the home. Less-educated smokers may not have the luxury of a smoking room, Martinez notes, especially if their home consists of one room.

Secondhand smoke can irritate the airways, a process that can cause asthma attacks, Martinez says. Indeed, he speculates, the rise in smoking among less-educated young mothers may in part account for the growing incidence of childhood asthma. By his calculation, passive smoking may cause up to 100,000 new cases of pediatric asthma in the United States each year. "That's an enormous burden on our health care system and on our kids," he says.

His team's data revealed no connection between a father's smoking and a child's risk of asthma. However, Martinez speculates, that may reflect the fact that children tend to spend more time with their mothers. *– K.A. Fackelmann*

Mandatory retirement: Public safety hazard

Forced retirement of police officers, fire fighters and correctional officials based solely on age, currently allowed under federal law, fails to increase public safety and probably does more harm than good, according to a Congressionally mandated study.

"You can't use chronological age to predict who can best protect the public," asserts psychologist Frank J. Landy of Pennsylvania State University in University Park, director of the 16-month, $1-million project. "It may be that public safety is enhanced by allowing experience to accrue in these occupations."

In 1986, federal lawmakers passed a bill eliminating mandatory retirement before age 70 for all workers except tenured college faculty and public safety officers, a category consisting of police officers, fire fighters and correctional officials. Airline pilots now also face age limits in employment. Mandatory retirement ages vary from one employer to another, but usually fall within the range of 60 to 65 years old.

Congress will review these exemptions in 1993. The 1986 bill authorized the funding of studies examining the effects of mandatory retirement ages for college and public safety employees. Another panel recommended last year that Congress remove age barriers to employment for college faculty.

Available data indicate that age proves a poor predictor of job performance among police, fire and correctional workers, according to Landy's 21-member scientific team. Instead, physical fitness and mental abilities – which vary greatly from one person to another, regardless of age – show the strongest link with the performance of public safety duties, concludes the report. Landy described its findings last week at a seminar held by the American Psychological Association in Washington, D.C.

He and his colleagues reviewed more than 2,000 published studies on various aspects of aging. They then gathered data on current and retired employees from 182 police departments, 165 fire departments and 102 correctional facilities throughout the United States. The researchers also used national data bases charting deaths, injuries and medical illnesses among public safety officers.

The investigation reveals a "vanishingly small" rate of medical emergencies among public safety workers carrying out critical safety tasks, even those aged 65 to 70. In fact, workers in their early 60s display greater average physical fitness than employees as much as 20 years younger, Landy says. Measures of mental abilities, such as memory and reasoning, remain roughly equal for all age groups. Average reaction times to new stimuli dip slightly for older workers, but the averages obscure the fact that many individuals aged 60 or older retain fast reaction times, Landy contends.

Moreover, older public safety workers often move into supervisory positions where their accumulated knowledge aids younger workers on the front lines, Landy maintains.

The new report recommends that police, fire and correctional departments adopt available physical and psychological tests for retirement evaluations.

– B. Bower