Education on the Dangers of Passive Smoking: A Cessation Strategy Past Due
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Passive smoking causes approximately 50,000 deaths annually in the United States, with the vast majority of these deaths due to heart disease. The effects of secondhand smoke on many pathophysiological mediators of coronary artery disease are nearly as large as those of active smoking, including impaired platelet function, damage to vascular endothelium and its associated repair mechanisms, a rise in inflammatory molecules, and dysfunctional lipid metabolism. The large literature on passive smoking is not limited to cardiovascular disease. Passive smoking causes lung cancer, head and neck cancers, respiratory infections, and obstructive lung disease (chronic obstructive pulmonary disease, asthma) and has been linked with breast cancer in younger women. Although as of 2008, more than half of the United States was covered by legislation that limits tobacco use in public places and workplaces, the Centers for Disease Control and Prevention found that nearly one half of US nonsmokers continue to be exposed to secondhand smoke.

The cross-sectional study by He et al of a large population of Chinese nonsmoking women who were exposed to secondhand smoke at home and in the workplace found that their risk of developing PAOD was nearly twice that of nonexposed, nonsmoking Chinese women ([OR 1.87, 95% CI 1.30 to 2.68] defined by presence of intermittent claudication and [OR 1.67, 95% CI 1.23 to 2.16] defined by intermittent claudication and measurements of ankle-brachial index). They arrived at these results even after accounting for 13 recognized risk factors for vascular disease, including age, daily level of exercise, body mass index, alcohol consumption, hypertension, hyperlipidemia, diabetes mellitus, and a family medical history of illness.

Two of the more highly publicized risk factors for vascular disease that He et al account for include diet and exercise habits, issues that are particularly relevant to American culture. While US citizens, including North American Chinese, struggle with obesity, which makes them more vulnerable to heart, vascular, and other disease, people in China consume less fat, have lower rates of obesity, and maintain higher exercise levels. Chinese in China consume 22% of their daily calories from fat compared with 35% for North American Chinese. Chinese in China also spend more time in vigorous physical activity and fewer hours sitting than Chinese in North America. Overall, Chinese in China weigh less and are leaner than North American Chinese. These differences are significant when considering the implications of the findings by He et al for Americans, because Chinese in China minimize 2 known risk factors for vascular disease and yet still have an increased risk of PAOD due to high rates of active and passive smoking.

Although diet and exercise are clearly important variables in the equation for development of vascular disease, smoking must be recognized as one of the most important modifiable causes of PAOD. Current smokers have 5 times the odds of developing PAOD compared with nonsmokers (OR 4.46, 95% CI 2.25 to 8.84). Compared with other recognized risk factors for vascular conditions, cigarette smoking exceeds hypertension (OR 1.75, 95% CI 0.97 to 3.15, P>0.05), diabetes (OR 2.71, 95% CI 1.03 to 7.12), hyperlipidemia (OR 1.68, 95% CI 1.09 to 2.57), and depressed kidney function (OR 2.00, 95% CI 1.08 to 3.70) as a risk factor for PAOD. With the present study by He et al, passive smoking is added as an important risk factor for PAOD, with effects that are as large as the other established risk factors.

He et al further show that Chinese nonsmoking women exposed to secondhand smoke are nearly 60% more likely to have an ischemic stroke than nonexposed, nonsmoking women. This study is similar to the 2005 analysis by Zhang et al of stroke risk among nonsmoking Chinese women exposed to spouses who smoke. They showed a clear dose-response relationship between degree of exposure and stroke risk after controlling for potential confounding variables such as age, body mass index, medical history, and level of activity. He et al similarly showed a clear dose-response
ongoing need to educate physicians and patients on the dangers associated with secondhand smoke. With increasing information on the adverse health effects of active and passive smoking, the healthcare community must realize that counseling patients against tobacco use involves addressing more than the risks to the active smoker; healthcare providers must also stress to their patients and their families the harm their cigarette smoke can cause others.

Furthermore, therapeutic interventions designed to promote cessation should extend to family and friends, who must learn ways to protect parents and grandparents. The study by He et al\(^6\) focuses on an older population of nonsmoking, nonexposed Chinese women who are at greater risk for development of vascular disease and other comorbid conditions. As individuals age, the prevalence of chronic disease and disability increases.

In America, for many families, nursing homes and assisted-living facilities become new sources of extended home and health care. Current labor laws\(^14\) often exempt nursing facilities from smokefree policies so that smokers can consume tobacco in either indoor or outdoor designated areas, thereby serving as another source of exposure for everyone else. The frail and elderly are often not in a position to advocate for smokefree homes. Clearly, minimizing exposures that may compromise health in an already weakened population is an important way to reduce premature morbidity and mortality.

Although clinician and patient education is needed to encourage complete cessation, public health policies that support smokefree homes (including nursing homes and assisted-living facilities) and workplaces are important, not only to minimize the burden of disease, including cardiovascular mortality, but to create an environment that motivates and helps smokers quit.\(^15\) The combination of patient and physician education coupled with public health activism can reduce active and passive smoking, resulting in immediate health benefits, particularly with regard to cardiovascular disease.\(^16,17\)

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**References**


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