

Secondhand smoke in cars, bars impairs breathing within 20 minutes

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Heavy concentrations of secondhand smoke, such as those found in smoke-filled bars and cars, can lead to airway restriction for bystanders within minutes of exposure. The study, presented at CHEST 2012, the annual meeting of the American College of Chest Physicians, showed that after 20 minutes of exposure to highly concentrated secondhand smoke, participants experienced near immediate physiologic changes, including airway resistance and impedance.

"Bars and cars are places where high concentrations of fine particles usually occur because of smoking. Nonsmokers are then forced to inhale extreme amounts of particulates directly into their lungs," said Panagiotis Behrakis, MD, FCCP, of the University of Athens, Greece. "The observed short-term effects of secondhand smoke tell us that even a short exposure is indeed harmful for normal airways."

In order to test the effects of short-term [secondhand smoke exposure](#), Dr. Behrakis and colleagues from the University of Athens and the Hellenic Cancer Society in Greece, and the Harvard School of Public Health, exposed 15 healthy participants to air heavily concentrated with smoke particulates within an exposure chamber—simulating a bar or moving car—for 20 minutes. During this time, researchers measured participants' total respiratory impedance, resistance, and reactance with the use of an impulse oscillometry, a noninvasive way of measuring the physical properties of respiratory movement during quiet breathing.

Results showed that short-term exposure to concentrated secondhand

smoke significantly and immediately impacted participants' airways, invoking such physiologic changes as increased airway impedance and resistance. Participants showed no clinical signs or feelings of discomfort during the test.

Although exposure to secondhand smoke appears to be slightly less harmful than direct smoking, Dr. Behrakis believes secondhand smoking should be recognized as a global health issue. "Secondhand smoking is the most widespread form of violence exerted on children and workers on a global level. The whole issue of secondhand smoke needs to be recognized as a global problem of human rights violation."

"Research has shown that exposure to [secondhand smoke](#) can have short and long-term effects on our health, especially in children," said ACCP President-Elect Darcy D. Marciniuk, MD, FCCP. "Although select states and cities have taken steps to eliminate smoking in restaurants, bars, and other public areas, more state and local governments need to acknowledge the dangers of secondhand smoking and follow suit."

Provided by American College of Chest Physicians

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