

Study: Even occasional smoking can impair arteries

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Even occasional cigarette smoking can impair the functioning of your arteries, according to a new University of Georgia study that used ultrasound to measure how the arteries of young, healthy adults respond to changes in blood flow.

"Most people know that if they have a cigarette or two over the weekend that it's not good for their arteries," said study co-author Kevin McCully, a professor of kinesiology in the UGA College of Education, "but what they may not be aware of—and what our study shows—is that the decrease in function persists into the next week, if not longer."

Previous studies have shown reductions in the arterial health of people who smoke regularly, McCully said, but what's surprising about his finding is that the study subjects were occasional smokers (less than a pack a week) who had not smoked for at least two days before their ultrasound. The study, which appears in the early online edition of the journal *Ultrasound in Medicine and Biology*, found that the arteries of occasional smokers were 36 percent less responsive to changes in blood flow than non-smokers.

McCully explained that the healthier an artery is, the more responsive it is to changes in blood flow. A reduction in responsiveness, known as impaired flow-mediated dilation, is an early sign of arterial damage that often foreshadows cardiovascular disease. The researchers recruited 18 college students for their study, half of whom were non-smokers. The other half smoked less than a pack a week and had not smoked for at

least two days before undergoing testing. The researchers measured the responsiveness of the participants' arteries by inflating a blood pressure cuff around their non-dominant arm to reduce blood flow to the forearm for various durations up to 10 minutes. The researchers then rapidly deflated the cuff and measured how well the main artery in the forearm responded to the sudden increase in blood flow.

"We wanted to determine whether occasional smoking can impair flow-mediated dilation and found that repeated bouts of cigarette smoking—even if classified as occasional—appear to increase the risk for developing cardiovascular disease in otherwise healthy, young people," said lead author Lee Stoner, a former UGA doctoral student and now a researcher at Christchurch Hospital in New Zealand.

After the occasional smokers underwent their initial test, they smoked two cigarettes and had their arteries re-examined. The researchers found that smoking dropped their arterial responsiveness by another 24 percent compared to before they smoked.

McCully acknowledged that the study used a relatively small sample size and said that further research is needed to determine if the impaired arterial function is a relatively short-term phenomenon or causes long-term damage. But he said that in light of his findings, people shouldn't assume that smoking occasionally allows them to avoid the harmful effects of tobacco.

"We saw a definite effect of cigarettes on the arteries, even in young people who you would expect to be healthy," he said.

Source: University of Georgia

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