

Recreational cocaine use linked to conditions that cause heart attack

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People who regularly use cocaine socially have stiffer arteries, higher blood pressure and thicker heart wall muscle than non-users, according to research presented at the American Heart Association's Scientific Sessions 2012.

Australian researchers used [magnetic resonance imaging](#) (MRI) to measure the effects of cocaine in 20 otherwise healthy adults who chronically used the illegal substance. Compared with 20 non-users, cocaine users had higher rates of multiple factors associated with higher risks of heart attack and stroke:

- 30 percent to 35 percent increase in aortic stiffening;
- 8 mm Hg higher systolic blood pressure; and
- 18 percent greater thickness of the heart's left ventricle wall.

"It's so sad," said Gemma Figtree, M.B.B.S., D.Phil., lead researcher of the study. "We are repeatedly seeing young, otherwise fit individuals suffering massive heart attacks related to [cocaine use](#). Despite being well-educated professionals, they have no knowledge of the [health consequences](#) of regularly using cocaine."

"It's the perfect heart attack drug," she said.

The combined effects of greater blood clotting, increased [heart stress](#) and more blood vessel constriction put users at high risk of a spontaneous heart attack, said Figtree, an associate professor of medicine at Sydney Medical School at the University of Sydney in Australia.

A surge of cocaine-related infarcts at Sydney's Royal North Shore Hospital led the team to study the incidence of [cardiovascular abnormalities](#) in apparently healthy, regular cocaine users.

Researchers recruited recreational cocaine users (17 men, 3 women, average age 37) who reported using cocaine at least once a month for the last year. They completed questionnaires about their drug use, [cardiovascular risk factors](#) and socioeconomic status. At least 48 hours after their last cocaine use, volunteers had their blood pressure taken and then underwent cardiac MRIs to assess heart mass and levels of heart and aortic functioning. Researchers performed direct comparisons with similar aged non-users, taking into account history of diabetes, smoking and other drug use.

In the study, investigators observed higher systolic blood pressure and increased arterial stiffness, in association with heart wall thickening.

"Stiffer vessels are known to be associated with elevated [systolic blood pressure](#). As a result, the heart is required to work harder, and its walls become hypertrophied or thicker," Figtree said.

Researchers didn't find evidence of earlier silent heart attacks among cocaine users, contrary to previous studies.

The study is the first to document persistent hypertension and vascular stiffness in cocaine users, long after the acute effects have worn off. Previous studies have shown the immediate effects of cocaine on the heart, and primarily among cocaine addicts—not social users.

Although it is currently unclear how repeated social cocaine use causes blood vessels to stiffen, researchers are investigating a signaling pathway that might be activated to cause such a response.

The study outcomes underscore the need for education about the short- and long-term effects of [cocaine](#) use to help prevent heart attack and stroke, Figtree said.

Provided by American Heart Association

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