**Speed and other recreational stimulants are tied to heart damage**

By Lisa Rapaport February 18

Middle-aged adults who use recreational amphetamines such as speed, ecstasy or ice may develop a prematurely aging heart and experience health problems normally associated with older people, a recent study suggests.

People may crave the euphoric feelings produced by amphetamines, but these drugs have long been linked to heart attack, stroke, artery wall damage, bleeding in the brain, abnormal heart rhythm and sudden cardiac death, said lead study author Stuart Reece of the University of Western Australia.

“It makes sense that all these different issues are linked by an underlying acceleration of the aging effect,” Reece said by email. “We found that the effect was very considerable indeed.”

Amphetamines are a stimulant, and they send what’s known as the “fight or flight” hormone adrenaline into overdrive. Previous research has linked these drugs to premature aging of the skin; the Australian research suggests amphetamines might also prematurely age the heart.

For the study, researchers measured blood flow through a main artery in the upper arm and forearm for 713 people in their 30s and 40s at a clinic for substance misuse. Arteries harden with age.

Each patient was asked about drug use and placed in one of four groups: nonsmokers, smokers, amphetamine users and methadone users. (Methadone is given to people trying to overcome addiction to heroin.)

Researchers used a blood pressure cuff and monitoring system to calculate what they described as biological vascular age by matching the extent of hardening in the arteries with the participants’ chronological age, gender and height.

The number of amphetamine users in the study was relatively small — 55. Almost all of them said they had used these stimulants within the previous week, and about half had used the drugs in the day before being tested with the blood pressure cuffs.

Even after accounting for several risk factors for cardiovascular disease such as weight, cholesterol levels and inflammation, amphetamine use was still independently associated with an “advancement” of cardiovascular age, researchers report in the journal Heart Asia.

The accelerated aging seen with amphetamines appeared to be even more pronounced than that seen with tobacco use, and it was equivalent to about a 25 percent increase over chronological age, Reece said — in other words, giving an otherwise average 40-year-old a cardiovascular age of around 50.

Beyond the small number of amphetamine users in the study, another limitation is the lack of data on how much of the stimulants people used, the authors note.

Stimulants such as Adderall, Ritalin and Concerta are often prescribed to children and adults diagnosed with attention-deficit/hyperactivity disorder in doses that are not associated with cardiovascular problems.

“At therapeutic doses, stimulant medications have been shown to be safe,” said Jose Martinez-Raga, a researcher at Spain’s University of Valencia, who wasn’t involved in the study.

“Amphetamine abuse implies using these stimulant drugs over long periods of time and generally with much larger doses than those commonly prescribed for medical reasons,” Martinez-Raga added by email.

All stimulants work by increasing the amount of dopamine in the brain. Dopamine is a chemical linked to pleasure, movement and attention.

People who take amphetamines in doses higher than is typically prescribed can experience a rapid surge of dopamine that can trigger euphoria and increase the risk of addiction.

“No medical patient smokes or shoots their pills,” Reece said. “These high levels are very addictive, they are very damaging, and they produce great spikes in blood pressure and heart rate which are straining and damaging both for the heart itself and for the blood vessels.”