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Young Adults Who Occasionally Use Cocaine or Amphetamines Show Brain Changes

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Young adults who occasionally use stimulants including cocaine, amphetamines or prescription drugs such as Adderall show brain changes on scans, according to researchers at the University of California, San Diego.

Researchers tested the reaction times of college students ages 18 to 24.

One group had never taken stimulants, while the other group had taken stimulants an average of 12 to 15 times, UPI reports.

The brains of study participants were scanned as they were shown either an X or an O on a screen. They were told to press, as quickly as they could, a left button if they saw an X, or a right button if they saw an O. If they heard a tone, they were told not to press a button.

In the *Journal of Neuroscience*, the researchers reported occasional stimulant users had slightly faster reaction times, which suggested a tendency toward impulsivity.

Occasional users made more mistakes when they heard a tone, compared with nonusers.

The researchers say it may be possible one day to use a person's brain activity patterns to identify at-risk youth before they show outward signs of addictive behaviors.

Dr. Martin Paulus said the differences they saw in participants' brains represent an internal hard wiring that may make some people more prone to drug addiction when they are older. "If you show me 100 college students and tell me which ones have taken stimulants a dozen times, I can tell you those students' brains are different," Paulus said in a statement. "Our study is telling us, it's not 'this is your brain on drugs,' it's 'this is the brain that does drugs.'"