

Can exercise help reduce methamphetamine use?

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The abuse of amphetamine type psychomotor stimulants remains a critical legal and public health problem in the US. In California, 27% of substance abuse treatment admissions are for amphetamines; high treatment-admission rates for amphetamines are also reported for other Western States such as Idaho (25%), Nevada (25%), Arizona (18%), Oregon (16%) and Washington (14%). Additional data show that 36% of the people arrested in San Diego CA, and 23% of men arrested in Portland OR, had methamphetamine in their system upon arrest. A 2009 study by the RAND Corporation estimated the total US costs for methamphetamine at \$23.4 billion.

Researchers from The Scripps Research Institute (TSRI) have found that [physical exercise](#) may be a useful technique to reduce methamphetamine use. Drs. Shawn M. Aarde and Michael A. Taffe used a preclinical model in which male rats are trained to press a lever to obtain intravenous infusions of methamphetamine. Prior work had shown that an extended interval (6 weeks) of voluntary activity on a running wheel could reduce cocaine self-administration in [laboratory rats](#). The investigators now report that running wheel access in only the 22 hours prior to the test session is sufficient to significantly reduce the amount of methamphetamine self-administered. Thus, this study shows that it may not require 6 weeks of chronic activity to produce a beneficial effect on drug use.

The finding has important implications for using exercise as an adjunct to human drug cessation therapy because an extended interval of

continual physical activity may not be required; effects may be seen immediately. An additional study presented by the team shows that rats' self-administration of the drug known as "Ecstasy" or "Molly" (\pm 3,4-methylenedioxymethamphetamine, MDMA) is also decreased in animals who have access to a wheel in their home cages.

More information: Dr. Taffe presented the findings during the Experimental Biology 2014 meeting on Sunday, April 27 at the Stimulants poster session in Exhibit Halls A-D (Poster #B292) at the San Diego Convention Center.

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