

Teenagers Speeding To Disaster

New research on rats suggests that teenage use of amphetamines, including the drug known as speed, can prime the brain so that addiction is more likely if the drug is reused in adulthood. Other biological effects of drug-taking among adolescent rats includes the possibility of increased risk of cardiovascular complications if these drugs are reused later in life.

Dr Andrew Lawrence of the Howard Florey Institute says that the findings match what we know about human addiction patterns. "Although many teenagers experiment with drugs, most don't become regular users but may try the drug later again as adults," he said.

"A teenager's early experimentation might be minor, but it could still have a damaging (and long-term) effect on their developing brain. We found that when a teenage rat is given amphetamines, and then after abstinence has the drug again as an adult, they have a sensitised (or more exaggerated) reaction to the drug, opening the door for addiction."

Previous research has focused primarily on either adolescent or adult drug use rather than considering combined impacts. The findings are to be published in the *International Journal of Neuropsychopharmacology*.

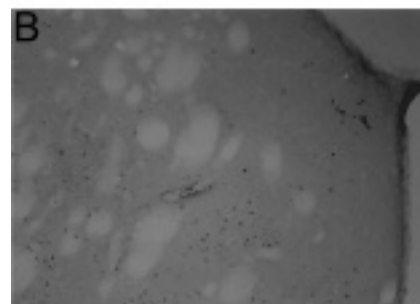
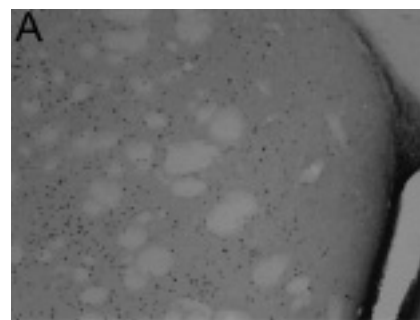
Amphetamine was given daily for a period of 10 days throughout early and mid-adolescence in both low and high doses. Disturbingly, the rats given the low doses showed the same sensitisation pattern as those given higher doses, suggesting that even occasional use among teenagers may predispose them to long-term consequences.

There was a substantial gap between the rat's adolescent exposure and being reintroduced to the drug as an adult, ruling out an original addiction or withdrawal response.

Lawrence is concerned that teenage exposure may have other unexpected implications for adult users. "As well as activating the brain's reward system, which is involved in addiction, amphetamines also affect brain regions that control heartbeat, blood pressure and temperature," he says. This could raise the risk of heart attacks if drug use re-occurs.

However, research suggests that these dangers are only raised if prior users return to the drug, and that teenage use of amphetamines should not raise the risk of heart attacks if use is not repeated.

Drugs prescribed for attention deficit disorder, such as Ritalin, are closely



Comparison of the brain of a rat given (a) a high dose of amphetamine as an adolescent and then reintroduced to the drug as an adult with (b) a rat given a lower initial dose.

related to amphetamines, and Lawrence admits to concern that these drugs may be having a sensitising effect on those taking them. However, he stresses: "Epidemiological studies show that taking Ritalin as a child has a preventative effect against subsequently using drugs. But there could still be a problem where the minority who do subsequently use drugs may have an exaggerated response."

Morrison Wins Inaugural Science Award

Respected science writer Dr Rob Morrison has won the Inaugural South Australian Premier's Science Award for Science Communication Excellence.

Morrison, who is a copy editor for *Australasian Science* and occasional contributor of articles to the magazine, has worked in science communication for 35 years, including many years on *The Curiosity Show*. During that time he has written 38 books. Morrison is now an Associate Professor at Flinders University School of Education.

Two other awards went to father and son Tony and Peter Rathjen. Dr Tony Rathjen's South Australian Cereal Breeding team at the University of Adelaide won the Excellence in Research for Commercial Outcomes Award, while Prof Peter Rathjen won the Research Leadership award for his work on stem cells.

Full Access to Evidence on CSIRO in Pockley's Right-of-Reply

The Office of the Senate has advised that Peter Pockley's comprehensive 46-page Right-of-Reply to CSIRO management's attacks on him and *Australasian Science* in Senate Estimates and Questions on Notice has been tabled and is available for open access at www.aph.gov.au/Senate/committee/eet_ctte/estimates/bud_0506/dest/att1.pdf

References to CSIRO's undocumented assertions in the Hansard transcripts and CSIRO's Answers to Questions on Notice are at www.aph.gov.au/Senate/committee/eet_ctte/estimates/bud_0506/index.htm

In addition, all the relevant articles in *Australasian Science* can be found at australasianscience.com.au

Inquiries to the Senate Office regarding precedents for this Right-of-Reply from the media have not produced any instances so far, making this an unusual tabling under Parliamentary privilege. CSIRO has not commented so far.