

New designer drug, 'bath salts,' may confer additional risk for adolescents

April 23 2013

Use and abuse of "bath salts," a new group of designer drugs, have been increasing in recent years, particularly among teenagers. Poison control centers received over 2,000 calls last year for patients with delusions, hallucinations and paranoia following "bath salt" use. Although the synthetic compounds found in "bath salts" are routinely changing in order to circumvent laws on banned substances, federal legislation recently added MDPV, a common constituent in "bath salts," to the list of Schedule 1 drugs – a list that includes cocaine, methamphetamine, ecstasy and other stimulants similar to MDPV.

Andrew Merluzzi, an undergraduate researcher at American University's Psychopharmacology Laboratory in Washington, DC, uses animal models to study how vulnerability to drug use and abuse differs between adolescents and adults.

Although drug abuse research commonly focuses on reward, there is also another affective property of the drug, its aversive effect, which might limit drug intake. By pairing ingestion of a sweet solution with an injection of a drug over several conditioning trials, researchers are able to measure this aversive effect. Previous research has shown that adolescent rats typically find drugs less aversive than their adult counterparts, possibly indicating an increased vulnerability to use and abuse.

With help from Zachary Hurwitz, a graduate student at American University, Merluzzi's latest study examined how adolescent and <u>adult</u>



rats differ in their response to the aversive effects of MDPV "<u>bath salts</u>" as well as MDPV's effect on <u>core body temperature</u> and brain monoamine neurotransmitter levels. Their findings will be presented April 23, 2013 at 12:30 pm during the Experimental Biology 2013 in Boston, MA.

Paralleling previous drug abuse literature, Merluzzi found that adolescents are less sensitive to the aversive effects of MDPV. Additionally, while adults exhibit increased body temperature following MDPV administration, adolescents exhibit a decrease. Further, neurotransmitter levels of dopamine, norepinephrine and serotonin are lower in adolescents. These data indicate that there are true behavioral, physiological and neurochemical differences between adolescents and adults in response to MDPV, possibly making adolescents more vulnerable to its use and abuse.

Provided by Federation of American Societies for Experimental Biology

Citation: New designer drug, 'bath salts,' may confer additional risk for adolescents (2013, April 23) retrieved 27 April 2024 from <u>https://medicalxpress.com/news/2013-04-drug-salts-confer-additional-adolescents.html</u>

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