

# Performance-enhancing drugs may increase risk of teen cocaine abuse, impair fertility

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Performance-enhancing steroid use could increase the risk of cocaine use and addiction in teens, according to a new rodent study. The combination of these drugs could also impair fertility in young women. The research will be presented today at the American Physiological Society's (APS) annual meeting at Experimental Biology 2019 in Orlando, Fla.

Athletes sometimes use anabolic [steroids](#) to boost performance. In addition to building muscle, performance-enhancing drugs have been found to affect mood and behavior, including risk-taking behavior. Previous research has shown that approximately one-third of young adults who use anabolic steroids also use [cocaine](#). This rate is substantially higher than the roughly 5 percent of young adults who use cocaine but do not take anabolic steroids. Although there appears to be a link between anabolic steroid use and the tendency to use other addiction-forming drugs in adults, it has not been well-studied in adolescents.

Researchers from the University of Puerto Rico studied female rats, half of which were exposed to nandrolone, one of the anabolic steroids most commonly used by [young adults](#). After 10 days of steroid exposure, the animals were divided into four groups:

- One group was exposed to nandrolone only.
- One group was exposed to nandrolone and cocaine.
- One group was exposed to cocaine only.
- A [control group](#) was exposed to neither nandrolone nor cocaine.

The researchers observed that the group exposed to nandrolone showed increased sensitivity to cocaine —called locomotor sensitization—than the other groups. The researchers also saw a reduction in ovary weight and the development of ovarian cysts—which can compromise fertility—in the nandrolone groups. The animals exposed to cocaine alone did not show the same level of drug-induced locomotor sensitization.

Exposure to androgens during adolescence "modifies the brain circuitry that regulates addictive behaviors, increasing the psychoactive properties of cocaine," the researchers wrote. In addition, [anabolic steroids](#) are also detrimental to the female reproductive system and may reduce fertility. A similar outcome in humans could significantly increase the risk of cocaine addiction and negatively affect fertility in teen athletes who use performance-enhancing steroids.

**More information:** Carlos Rivero, a graduate student at the University of Puerto Rico, Medical Sciences Campus, will present the poster "Nandrolone use during adolescence increases cocaine sensitization and impairs reproductive function in adult female rats" on Monday, April 8, in the Exhibit Hall-West of the Orlando County Convention Center.

Provided by American Physiological Society

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