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**TOUR DE FRAUD?
PUZZLE: Experts curious why a
cyclist would even use testosterone in
the middle of a race**

- [Lance Williams, Chronicle Staff Writer](#)

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Cycling's drug cheats have beaten the system for years with blood doping, the endurance-booster EPO and the substance human growth hormone.

And so it puzzled doping experts Thursday when they learned that Tour de France champion Floyd Landis had tested positive for illegally high levels of testosterone -- a result suggesting he had used a muscle-building drug in the middle of a race.

"The result is a bit of a mystery because testosterone is not the drug of choice for cyclists," said Oregon doping expert Steven Ungerleider. "Typically, testosterone derivatives are used in a long-term cycle -- you use them off and on to build lean muscle mass."

It would be illogical for a cyclist to use testosterone during a race, agreed Charles Yesalis, a retired Pennsylvania State University professor and a consultant on sports doping issues.

"EPO can help you on the bike, as can blood doping," he said. "Testosterone can help you recover, but I don't think it could make a meaningful difference in a week."

If the test results are verified, the experts said that could mean Landis had used a quick-acting form of testosterone in hopes of getting a quick "pop" during the grueling race -- or perhaps to combat the pain of his degenerative hip condition.

The test that Landis failed seeks to determine whether an athlete is using drugs to supplement the testosterone that is naturally produced by his body. The human body produces testosterone and another substance, epitestosterone, in a ratio of roughly 1 to 1, scientific studies have shown.

Under international doping rules, if the test shows that an athlete's urine has a ratio of more than four parts of testosterone to one part of epitestosterone, he or she is presumed to have been cheating.

Testosterone can build muscles and help athletes recover from workout-related injuries. But some baseball players and track stars have used quick-acting forms of the drug in an effort to get a short-term benefit.

In the BALCO steroids case, court records show that athletes were given a product called "Mexican beans" -- a fast-acting testosterone derivative in pill form that was thought to



clear the system within a few days.

Kelsey Nakanelua, an Olympic sprinter from American Samoa who has studied the chemistry of performance-enhancing drugs, said athletes experience a "spike" in their testosterone levels soon after ingesting some forms of the substance.

Athletes "can get a quick pop" of improved performance, said Nakanelua, a graduate student at the University of Hawaii.

Ungerleider, the Oregon expert, speculated that Landis might have sought drugs for hip pain.

"He has been competing at a high level with a terrible hip problem," he said. "It's possible they gave him something that sent his ratio out of whack."

Page A - 1

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