

Green tea could cloud Olympic doping tests

April 5 2012, By MARIA CHENG , AP Medical Writer

(AP) -- Olympic doping officials are considering whether to tweak their tests after a recent British study showed green tea might hide testosterone from the standard test used to spot it.

The study was a test in a lab dish so scientists aren't sure if the effects will be the same in people. But some experts say the results are intriguing enough that Olympic testing could be updated to include that possibility.

"It's interesting that something as common as tea could have a significant influence on the steroid profile," said Olivier Rabin, scientific director of the World Anti-Doping Agency, or WADA. He said other foods and beverages, such as alcohol, are also known to muddle [test results](#).

"We may need to adjust our steroid (test) to allow us to exclude whether a test is modified by food or training or disease, before we can say that it's doping," Rabin said. He said they might have to raise their normal threshold for what is considered a legal amount of testosterone to allow for any such interference.

In the study, researchers added green and white tea extracts - or catechins - to testosterone and tested whether the enzyme that usually detects testosterone in the body could still identify it. Tea seemed to reduce the testosterone concentration by up to 30 percent and appeared to work best when testosterone was only slightly higher than normal. Similar results have been found in [rodent](#) studies, Rabin said.

Experts say athletes taking testosterone for doping purposes typically have 200 to 300 percent more in their bodies than normal.

WADA has tight controls on other commonly consumed substances like caffeine. It bans diuretics that could mask drug use and warns athletes about taking [nutritional supplements](#), which could be spiked with banned drugs.

The researchers said it was too early to tell what the effect of [green tea](#) might be in humans, but said other beverages or foods likely produced similar effects.

"There's no reason to think we just happened to pick the only food in the world that does this," said Declan Naughton of Kingston University, who published the green tea research with colleagues in the journal, *Steroids*.

Naughton said the green tea contains catechins, also found in [white tea](#), which seem to stop an enzyme involved in detecting testosterone. By preventing that enzyme from working, testosterone largely goes unnoticed in the body and doesn't get passed into the urine - where officials usually test for the hormone.

Charles Yesalis, a doping expert at Pennsylvania State University, said officials needed to react quickly.

"Athletes will not wait for the clinical trials," he said. "I'll bet there are already lots of athletes out there drinking loads of green tea," he added.

Yesalis said many scientists were aware of foods that could skew drug tests but would not talk publicly about them. "There's no sense helping out the doping athletes by telling them what to eat," he said.

Yesalis was unconvinced that new tests could solve the problem. "There's

too much scientific uncertainty that can cloud the results," he said.

WADA's Rabin said all atypical results from doping tests involved an expert analysis, not just a lab result. "There's a human interpretation of the data," he said, explaining that officials regularly accounted for potentially troublesome results by considering things like intense exercise, jetlag and diet.

Rabin also said it might be possible to test for testosterone in blood rather than the standard urine test.

Some experts said the limited effects of foods like green tea on masking illegal [drug use](#) would be too small to help doping athletes. "You would probably need to drink the tea continuously to get any sustained but minor effect," said Andrew Kicman, head of research and development at the Drug Control Centre at King's College London, which is providing the anti-doping laboratory for the upcoming Olympics.

"It would be a very foolish athlete who's thinking of [doping](#) with [testosterone](#) and thinks he could drink white or green tea to beat a drug test," he said. "And I personally wouldn't want to drink nine cups of tea on the day of a race."

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