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Cycling Nutrition with Monique Ryan: Caffeine and coffee – VeloNews.com

Monique Ryan March 31, 2004

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One January 1, 2004, caffeine was removed from the World Anti-Doping Agency prohibited list, after being a “controlled to restricted drug” in the world of athletic performance for years, and moved to the “monitoring list.”

Prior to this change caffeine urine levels of greater than 12 micrograms per millimeter were considered illegal. The reason for this change, notes WADA, is really very practical. This old limit has always given caffeine a unique position as a “potentially” performance-enhancing drug, implying that higher doses of caffeine are required to improve performance. However, this is simply not true. This column summarizes the current research on the performance enhancing effects of caffeine and important considerations of caffeine use in view of its new legal status.

Caffeine is a drug that enjoys widespread use and a high level of social acceptance. Caffeine containing foods commonly consumed are coffee, tea, cola drinks and chocolate. Cyclists can also obtain caffeine from sports gels and the new “energy drinks.” Many cyclists would never miss their daily cup of java to jump-start their day, however, most cyclists who regularly

consume caffeine beverages in their daily diet and prior to exercise, would never come close to hitting the old legal limit for caffeine in a urine test.

Research in well-trained athletes indicates that caffeine provides a small enhancement to exercise endurance. Most importantly, the dose of caffeine required to affect performance is relatively low, making higher amounts unnecessary. Notes Lawrence Spriet, Ph.D., who has conducted several caffeine studies with colleagues at the University of Guelph in Ontario,

“The lowest dose reported to increase performance during endurance running and cycling is 3 milligrams/kg body mass or 210 mg for a 70 kg person when taken an hour before exercise.”

One strong 10 to 12-ounce cup of coffee could contain this much caffeine. Other caffeine sources include eight ounces of tea (25 to 50 mg of caffeine), twelve ounces of cola (50 mg), and chocolate (15 to 50 mg). In fact the amount of caffeine that you normally consume in your daily diet maybe all that you really need to improve performance.

Currently there is no evidence that higher amounts consumed before exercise provides an even greater performance benefit. Some research protocols had previously used doses of 400 to 600 mg of caffeine, but athletes may experience adverse side effects with these amounts. “Most people will feel little at 3 mg per kg if they do take caffeine sometimes, and more effects at 5 mg per kg, but side effects get problematic at 9 mg per kg body mass,” said Spriet.

Side effects may include gastrointestinal disturbances, jitters, headaches, rapid heartbeat, and sleep disturbances. Essentially, cyclists never really needed to practice “controlled doping” in which they consumed the highest dose of caffeine possible, while

attempting to stay within the legal limits prior to the 2004 ban lift.

More recent data also indicates that an even lower dose of 1 to 1.5mg per kg of body mass taken during exercise can improve performance. This data mimics the cycling practice of taking flat coke late in a race. Some of the “energy drinks” on the market may provide up to 80 mg of caffeine (though they are too concentrated in carbohydrate to be consumed during exercise), and caffeinated gels range from 20 to 50 mg of caffeine perserving.

Metabolic clearance of caffeine varies widely between different athletes, and can also vary for the same athletes at different times. Female cyclists should also be aware that since they have higher estrogen levels than men, they probably do not metabolize caffeine as quickly as men and ingestion will have a more prolonged impact. But remember, from a practical viewpoint, there really is no longer a distinction between social caffeine doses and those that enhance performance.

In small amounts, caffeine poses no health disadvantages. Hopefully the fact that caffeine is no longer on the banned list will drive home the message that large amounts of caffeine provide no additional performance advantages to doses consumed in the everyday diet. Previous “doping” levels (whether legal or not) are not necessary and could have negative side effects. Notes Spriet, “The most important information is that caffeine will not work for everyone and must be tried before competition.” Studies do indicate that there are responders and non-responders to caffeine. You should also keep in mind that the performance benefits of caffeine are still not as high in magnitude to the beneficial effects of consuming fluid during exercise to minimize dehydration.

