

# Caffeine and Athletic Performance

## How does caffeine affect athletic performance?

Many people like caffeine because it makes them feel more alert, gives them more energy, improves their mood, and makes them more productive. Athletes often use caffeine to help them perform better, both in routine workouts and in competition.

Like other drugs, caffeine can provide some benefits but too much can lead to problems. While one or two cups of coffee may give you short-term bursts of energy or improvement in concentration, it usually takes very high levels of caffeine to produce a real improvement in athletic performance. And at those high levels you can experience sleeplessness, anxiety, stomach upset, headache, and a wired or jittery feeling.

Caffeine does not help everyone. Some people are very sensitive and have side effects that include nausea, muscle tremors, and headaches. Too much caffeine can cause you to produce more urine and lose more water, especially in hot weather. You could become dehydrated and hurt your performance.

Caffeine works by stimulating your central nervous system. In the past, researchers thought that caffeine improved endurance performance by stimulating a greater use of fat for energy so that less of the stored energy in your muscles (glycogen) was burned. However, more recent caffeine studies don't support this theory. When caffeine improves endurance, it does so by acting as a stimulant.

## Is there a limit on how much caffeine I can have?

Too much caffeine can not only produce ill effects but can deprive an athlete of the chance to compete.

The current list of drugs banned by the International Olympic Committee (IOC) contains more than 40 different stimulants, including caffeine over a certain limit. Coffee, tea, chocolate, and colas, as well as NO DOZ and some nonprescription painkillers contain caffeine. Because caffeine is a common ingredient in foods and drinks, the IOC allows

an upper limit of 12 mcg/mL of urine tested.

Over a 2- to 3-hour period, a dose of 100 mg of caffeine results in a urine concentration of 1.5 mg/mL. So, for example, if in a 3-hour period you consumed 800 mg of caffeine (5 to 6 cups of strong coffee or a couple of espresso drinks), you could exceed the legal dose.

To improve your endurance by saving the energy in your muscles, you would have to take in so much caffeine that you would come close to exceeding the legal limit.

## What are the sources of caffeine?

The table below lists items that contain caffeine and the urine levels they produce.

## What should I keep in mind?

1. Be aware of the caffeine in your food, drinks, and medication, including nonprescription drugs.
2. Know how much caffeine you consume during the course of a day.
3. Listen to your body. Know how caffeine affects you. If you have ill effects from caffeine, cut back.
4. Don't try using caffeine to give you a boost during competition if you haven't used caffeine before.
5. If you feel like coffee improves your performance, be sure you don't consume so much that you exceed the legal limit.

**MODERATION** - Use caffeine carefully. Too much caffeine may be bad for you and could cause you to be disqualified from competition.

Product	Amount /Dose	Equivalent in urine within 2 to 3 hours
1 cup of coffee	100 mg	1.50 mcg/mL
1 Coke, Diet Coke	45.6 mg	0.68 mcg/mL
1 NO DOZ	100 mg	1.50 mcg/mL
1 Anacin	32 mg	0.48 mcg/mL
1 Excedrin	65 mg	0.97 mcg/