

But First, Caffeine

And Athletic Performance



Myth	Fact
Caffeine is only in coffee, tea, energy drinks, and soda.	Caffeine is not only in drinks, but can be present in foods as well. These include sports bars, ice cream, chocolate, and candy bars.
Energy drinks (Monster, Rockstar, Redbull, etcetera) are healthy and harmless caffeinated drinks.	Although these drinks have been shown to have beneficial effects on performance, they have the potential to cause adverse health problems. Adverse effects in cardiovascular, psychological, neurological, renal, gastrointestinal, and metabolic systems have been shown as a result of energy drink consumption. In addition, the amount of sugar in these drinks may lead to dental erosion and weight gain.
Having multiple cups of coffee per day is safe.	Having more than 400mg of caffeine a day (equivalent to 4 cups of coffee) can cause health problems. These include insomnia, anxiety, dehydration, headaches, dizziness, rapid or abnormal heartbeat, restlessness or shakiness, and dependency. Dependency means that you must consume more to feel the same results. Caffeine dependence may also lead to withdrawal symptoms when you suddenly stop your normal intake.

Caffeine, Sleep, Exercise and Nutrition



Earlier this week, we discussed the importance of sleep hygiene and how it impacts athletic performance, academic performance, mood, energy, nutrition status and overall health. Okay, okay, so maybe you could use a little more sleep - but that's what caffeine is for, right? Unfortunately, lack of sleep and caffeine creates a vicious cycle. The less sleep you get, the more tired you feel, the more caffeine you consume, the harder it is to fall asleep or get to bed early. That's because caffeine is a central nervous system stimulant and makes us feel more alert by blocking sleep-inducing chemicals in the brain while increasing adrenaline production (stress hormone). This is why caffeine makes it harder to relax, fall asleep, causes sleep disturbances and further prevents you from getting proper sleep.

Caffeine is the most socially and frequently used drug in the world. It exists naturally in tea and in some plants like the cocoa bean and coffee bean. However it can also be an additive in energy drinks, soft drinks, supplements, powders, gels, bars, and other processed foods. Moderate amounts of caffeine per day (~two 8-ounce cups of brewed coffee, 200-300 mgs) in the form of beverage and food is considered socially acceptable and safe, but college students commonly consume more than this level. However, side effects such as anxiety, upset stomach decreased appetite and difficulty sleeping can be experienced with any amount of caffeine. Caffeine can also negatively impact your nutrition and gastrointestinal tract health. It can decrease the absorption of nutrients, cause heartburn, constipation or diarrhea, decrease gut motility, dehydration, exacerbate symptoms of irritable bowel syndrome (IBS) and over time, can cause leaky gut syndrome (damage to the structure of the gut wall).

Caffeine is also known as an *ergogenic aid*- a substance that is taken to enhance or benefit athletic performance. Be aware that caffeine is a banned substance by the NCAA (see chart below). Although there are benefits of caffeine for mental and cognitive performance, it is important to carefully consider factors such as your current caffeine use, the form of caffeine consumed, timing of consumption and amount consumed.

Potential Benefits of Caffeine	Potential Risks of Caffeine
<ul style="list-style-type: none"> Improved performance in endurance and sustained high-intensity training or competitions with consecutive high-intensity bouts lasting longer than 90 seconds Increased ability to focus, concentrate and body coordination Decreased perception of fatigue and pain, allowing you to sustain high training intensity Engage in longer strength training sessions due to decreased perceived exertion during submaximal resistance training 	<ul style="list-style-type: none"> Caffeine is a banned substance by the NCAA. A positive urinary drug test consists of 15 micrograms per milliliter of caffeine (6-8 cups brewed coffee, 2-3 hours before competition) Other banned stimulants such as <i>synephrine</i> can be found in energy drinks, sports performance enhancers and pills are often unlabeled or have unclear amounts. Serious health consequences, including death can result when added to unknown amounts of caffeine Caffeine is an addictive substance when consumed regularly in amounts as low as 100 mg/day (1 cup brewed coffee). Withdrawal symptoms include insomnia, fatigue, depression, headache, irritability, increased blood pressure and increased or irregular heart rate Thermal regulation can be negatively impacted for athletes training in hot environments when caffeine is consumed without adequate fluids Caffeine consumed at very high levels, (6-9 milligrams of caffeine per kilograms of body weight) can cause overstimulation to your nervous system and gastrointestinal tract- causing digestive issues, decreased appetite, shaking, nausea, impact sleep, performance and training

https://www.sportsrd.org/wp-content/uploads/2018/11/Caffeine_and_Athletic_Performance_WEB.pdf

Considerations for Caffeine Use:

- ★ **Food first.** Successful athletic performance depends on an individual nutrition plan that meets your energy and nutrient needs through food. Caffeine does not replace the actual energy that is provided from food.
- ★ **Usual habits.** Individuals who regularly consume ~two 8-ounce coffees per day (200-300 mg) may no longer feel performance improvements. Abstaining from caffeine or decreasing intake for 7-10 days may be necessary for maximal benefits.
- ★ **Form.** Be sure to read labels of energy drink, sodas, bars, gels, drinks, and medications to know how much you are consuming
- ★ **Amount and timing.** For performance-enhancing effects, consume 1-3 mg of brewed coffee (2-6 mg) of caffeine per kilogram of body weight. Consume one hour before cardiovascular endurance training or up to 20 minutes if high-intensity training. Effects may last up to 4 hours.

HOW MUCH CAFFEINE ARE YOU CONSUMING?

Caffeine-Containing Food Product	Amount of Caffeine (mg)
8 ounces of home-brewed drip coffee	80-100
8 ounces of instant coffee	65-100
2 ounces of espresso (latte, cappuccino, Americano)	100
8 ounces of decaffeinated coffee	5
8 ounces of brewed tea	50
12 ounces of caffeine-containing soft drinks	35-55
8 ounces of energy drink	80
Energy bar with caffeine	50 or 100
1.5 ounces of dark chocolate	30
2 caplets of Excedrin	130
1 caffeine tablet	200

NOTE: Exact amounts may vary between product brand and types. Approximately 10 grams, or 80-100 8-ounce cups of coffee, is considered the lethal dose of caffeine.



BOOSTING YOUR ENERGY LEVELS NATURALLY

Caffeine can cause unwanted affects on the body, especially when consuming in high amounts. Looking for a way to cut down or cut out the caffeine? Try some of these tips to boost your energy naturally.

MANAGE YOUR STRESS



Stress and anxiety can take up a lot of extra energy. Manage these unwanted emotions by prioritizing your to-do list, creating a study schedule, and staying organized. Don't forget to leave some time for yourself to do something fun or relaxing!

DRINK LOTS OF WATER



When your body is short of fluids, you will feel fatigue and sleepiness. Drinking water and staying hydrated is one of the most beneficial things you can do to enhance your performance. Try drinking 1-2 cups+ of water and wait about 20 minutes to see if you feel more alert before grabbing a desired caffeine fix.

EAT FOR ENERGY



Eat small, frequent meals throughout the day to keep a steady supply of nutrients to your brain.

PRIORITIZE A GOOD NIGHTS SLEEP



Sleep deprivation and caffeine have a vicious cycle. A good night's rest is the best strategy for feeling re-energized for the next day.

COOK MEALS : EAT IN AND NOT OUT



Try to do this as much as possible. Most breakfast places, fast-foods, and processed foods tend to have choices that are low in fiber, high-saturated fat, high in sodium, and high in refined carbohydrates (and not from whole grain sources).

EAT FOODS WITH A LOW GLYCEMIC INDEX



Look for whole foods from non-processed sources. Other foods that have a low glycemic index include fibrous foods such as vegetables, fruits, and nuts. Proteins and healthy fats typically have low glycemic indexes.

INCLUDE A WHOLE GRAIN IN YOUR BREAKFAST ROUTINE



Whole grains are perfect sources for healthy, complex carbohydrates and are rich in a variety of nutrients that are important for energy production. There are a variety of whole grains that are gluten-free such as quinoa, oats, buckwheat, amaranth, teff, corn and brown rice.

QUICK TIPS FOR CONSUMING CAFFINE

- Do not use caffeine to replace breakfast
- Read labels and be cautious of how much caffeine you are consuming. Do not consume more than 400mg per day
- Caffeine can also negatively impact your nutrition and gastrointestinal tract health

Energy-Boosting Breakfast Recipe

This balanced breakfast is a great way to start off the day with a nutritious energy-boost. It's quick, easy and budget-friendly. Swap out different vegetables or add your favorites to your liking. Make it a balanced meal and serve with a slice of whole-grain toast/waffle with some nut butter and a small side of your favorite fruit for some extra satiety and energy.

Garden Veggie Scramble

Prep time: 10 minutes

Cook time: 10 minutes

Serves: 1

Ingredients:

- 2-3 eggs
- ¼ cup of water or milk
- 1 tbsp olive oil or butter
- ¼ onion, diced
- ¼ zucchini, diced
- ¼ bell pepper, diced
- 4 mushrooms, sliced
- Small handful of chopped kale or spinach (or your favorite green leafy vegetable)
- *Optional toppings:* cheese, green onions, bacon, tomatoes, or fresh herbs (dill, cilantro or basil)

Directions:

1. Wash all vegetables prior to chopping.
2. In a small bowl, crack the desired amount of eggs and add ¼ cup of water. Use a whisk or fork to mix egg mixture until yolks are broken and the eggs are fully mixed.
3. Heat olive oil or butter in a skillet or frying pan over medium-high heat. Add onions and mushrooms for about 2-3 minutes until they are translucent.
4. Add zucchini and bell pepper. Sauté for about 3 minutes. Then add kale/spinach.
5. Pour in the egg mixture into the skillet or frying pan with vegetables.
6. Cook until eggs are set. Remove from skillet to plate. Add desired additional toppings.
7. Serve with a slice of whole-grain toast/waffle with nut butter and a side of your favorite fresh fruit. Enjoy!

This recipe was adapted from: <https://www.allrecipes.com/recipe/24579/extreme-veggie-scrambled-eggs/>