



Caffeine, Beverages and Energy Drinks

What is Caffeine?

Caffeine is a chemical that is produced naturally in many plants. It is also artificially made and added to some foods. Caffeine is defined as a drug because it stimulates the central nervous system, causing increased alertness. Caffeine gives most people a temporary energy boost and elevates mood. Caffeine is in tea, coffee, chocolate, many soft drinks, and pain relievers. In its natural form, caffeine tastes very bitter though most caffeinated drinks are able to camouflage the bitterness. Caffeine is not stored in the body but can stay in the body for up to six to eight hours.

Many people feel that caffeine increases their mental alertness. Higher doses of caffeine can cause anxiety, dizziness, and headaches. Caffeine can also interfere with normal sleep since it can remain in the body for up to six hours. Caffeine sensitivity varies from person to person. On average, the smaller the person, the less caffeine needed to produce side effects. Caffeine sensitivity is most affected by the amount of caffeine a person has daily. People who regularly take in a lot of caffeine soon develop less sensitivity to it. This means they may need more caffeine to achieve the same effects.

Potential Problems

Caffeine is a diuretic, meaning it causes a person to use the restroom more. This may increase the risk of dehydration. To be safe, it's probably a good idea to stay away from too much caffeine in hot weather or intense activity. Caffeine may also cause the body to lose calcium, and that can lead to bone loss over time. Drinking soft drinks and coffee instead of milk may have an even greater impact on bone density and the risk of developing osteoporosis. Caffeine can aggravate certain heart problems. It may also interact with some medications or supplements. Caffeine may also increase stress or anxiety. Caffeine is sometimes used to treat migraine headaches though for some people it may make headaches worse. Caffeine can also be a factor in heartburn or reflux. Caffeine can make it easier for reflux to occur as it can weaken one of the muscles that tries to prevent reflux. Combine that affect with the carbonation of soda and you have a powerful combination. So stopping all caffeine and soda is a recommended step for anyone suffering from reflux disease or heartburn.

Moderation Is the Key

Caffeine is usually thought to be safe in moderate amounts. Experts consider 200–300 mg of caffeine a day to be a moderate amount for adults. But consuming as little as 100 mg of caffeine a day can lead a person to become "dependent" on caffeine. This means that someone may develop withdrawal symptoms (like tiredness, irritability, and headaches) if he or she quits caffeine suddenly. Teens usually get most of their caffeine from soft drinks and energy drinks. (In addition to caffeine, these also can have added sugar and artificial flavors.) Teens should try to limit caffeine consumption to no more than 100 mg of caffeine daily, and kids should get even less.

If you're taking in too much caffeine, you may want to cut back. The best way is to cut back slowly. Otherwise you could get headaches and feel tired, irritable, or just plain lousy. Try cutting your intake by replacing caffeinated sodas and coffee with caffeine-free drinks, including water, caffeine-free sodas, and caffeine-free teas. You can try substituting one caffeinated drink per day with a caffeine-free alternative to help reduce your intake.

Feeling tired as you cut back may be your body telling you to get more sleep, not more caffeine. You may find that you sleep better as you cut back on caffeine, especially later in the day.

More than Just Caffeine – The Energy Drink Connection

There are additional risks with energy drinks beyond caffeine. Many of these drinks contain a blend of vitamin, mineral and herbal supplements. Including these supplements in energy drinks may be beneficial, may do nothing or may even be potentially harmful. The issue at hand is that very few drinks list the exact amount of any of these supplements included in their product. Secondly if they do include the amount it is still difficult to say how much of the active ingredient in that product is available to the body. In fact many of these drinks are labeled as containing a proprietary (secret) blend of supplements, legalese for ... we're not telling.

Many energy drinks and shots contain a blend of various vitamins especially focusing on the B-vitamins. These may include B6, B12, niacin and folic acid. These vitamins and others in the same class do not provide any energy on their own. They are involved in releasing the energy contained in the food we eat. However if someone is drinking an energy drink and skipping meals they may actually end up with less real energy and more action from the stimulants in that drink. In addition the relatively high levels (in some cases 500-8000% of the RDA) of these vitamins in some products may lead to toxicity with regular use or especially with overuse.

Carnitine and taurine are often a staple of energy drinks. Carnitine is a naturally occurring substance in the body that is involved in burning fat for energy during exercise and exertion. It has long been sold as both a weight loss and muscle-building supplement. Studies have shown mixed or absent results with the only real benefit for those individuals who may be may not have enough in carnitine in their diet. Taurine is promoted as a supplement that can improve endurance, improve memory, protect body organs and increase alertness. While there is little direct evidence that taurine may be harmful, some information may point to an increased risk while using taurine-supplemented energy drinks during high intensity exercise. There is a risk of increased dehydration and the problems that go with it.

Guarana contains a high amount of guaranine, a chemical with the same characteristics as caffeine. Guarana is used in South American beverages the way caffeine is used in the United States. This makes guarana a stimulant similar to coffee. A dependency similar to caffeine can develop with guarana use. Glucuronolactone is another naturally occurring compound in the human body. It is produced by breaking down glucose (blood sugar) in the liver. It is often included in many energy drinks because of it supposedly fights fatigue, provides a sense of well-being, and reduces sleepiness. There are few studies documenting use of glucuronolactone or any potential dangers.

Summary

Overall, there appears to be good evidence that moderation in the use of caffeine and energy drinks is wise. There is increased competition for sales driving manufacturers to increase the amounts of stimulants and other compounds further raising the risk of harm. Some energy drinks now contain over 500 mg of caffeine while energy shots may provide as much as 170 mg of caffeine in a single ounce of drink. Caution is even more important in children and adolescents as the effects of high levels of caffeine have not been studied well (in these groups), not to mention companies are aggressively marketing to them. The bottom line – know what you AND your children are drinking.