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Energy drinks: do they really give you wings?

In the past 10 years there has been a significant increase in the consumption of energy drinks, particularly by young people. There has also been considerable debate about the contents of energy drinks and whether consumption of them is safe. This fact sheet provides information on caffeinated energy drinks and their effects, including when they are mixed with alcohol.

What are energy drinks?

Energy drinks are beverages that contain varying amounts of caffeine, taurine, guarana, amino acids, vitamins and sugar. Energy drinks are promoted as being beneficial in increasing stamina, and improving physical performance, endurance and concentration.

What are the ingredients of energy drinks?

Energy drinks typically contain a mixture of:

- › **caffeine**—a stimulant that acts on the central nervous system to speed up the messages to and from the brain. Caffeine is the main active ingredient in energy drinks
- › **guarana**—an extract from a plant that contains about twice the amount of caffeine as coffee beans
- › **theobromine**—from the cacao plant. It has a similar effect to caffeine and is found in chocolate and many other foods
- › **theophylline**—a drug used for the treatment of respiratory diseases and asthma, marketed under a variety of brand names. It is structurally similar to caffeine. It is also naturally found in tea at very small levels
- › **taurine**—occurs naturally in food, especially in seafood and meat, and is necessary for normal skeletal muscle functioning
- › **ginseng**—a substance that comes from a variety of plants and is believed to have medicinal properties, but has been found to interact with a number of prescription and herbal drugs.

Source: Gunja, N & Brown, J. 2012 Energy drinks: health risks and toxicity, Medical Journal of Australia available at <https://www.mja.com.au/journal/2012/196/1/energy-drinks-health-risks-and-toxicity>

Caffeine content of some popular energy drinks and soft drinks

Drink/product	Size/amount	Caffeine content
Mother energy drink	500 ml can	160 mg
Red Bull	250 ml can	80 mg
V energy drink	250 ml can	50 mg
Pulse: Vodka, soda & guarana (alcoholic)	300 ml can	21 mg
Cola soft drink	375 ml can	40–50 mg
Diet cola soft drink	375ml can	48 mg

Effects of energy drinks

Short-term effects

- › feeling more alert and active
- › need to urinate more frequently
- › rise in body temperature
- › increased heart rate
- › stimulation of the brain and nervous system.

Higher doses

Serious injury or death from caffeine overdose can occur. The Australian Medical Journal has reported an increase in energy drink related reports to the Poisons Information Service in NSW, and they assume that this increase would be reflected in national statistics.

Some of the adverse health effects associated with excessive energy drink consumption are:

- › insomnia
- › nervousness
- › headaches
- › nausea
- › vomiting
- › rapid heart rate
- › heart-palpitations.

In small children, caffeine poisoning can occur through much smaller doses—up to 1 gram of caffeine (equal to around 12 energy drinks).

For more information on caffeine and its effects, see:

www.druginfo.adf.org.au/index.php?option=com_content&view=article&id=36&Itemid=47

Who should avoid energy drinks?

Children and young people

There is no reported evidence that energy drinks are of any nutritional value. Research has found that children and young people who consume energy drinks may suffer sleep problems, bed-wetting and anxiety.

Pregnant or breastfeeding women

Women who are pregnant or breastfeeding are advised to avoid energy drinks, as high amounts of caffeine can increase the risk of miscarriage, difficult birth and delivery of low-weight babies. Caffeine crosses the placenta, so breastfeeding mothers are also advised to avoid energy drinks.

Sportsmen and women

People who play sport are advised to avoid caffeinated energy drinks as caffeine can cause dehydration. The combination of dehydration and exercise can be dangerous.

Caffeine sensitive people

Some people are more sensitive to caffeine than others. If you are susceptible to the effects of caffeine, just small amounts—even one energy drink—may prompt unwanted effects, such as restlessness and sleep problems.

Combining energy drinks with alcohol

Health professionals have expressed concern about the consumption of energy drinks containing alcohol and the combining of energy drinks with 'shots' of alcohol. Drinking energy drinks with alcohol places the body under great stress and can mask some of the effects of the alcohol. For example, if a person combines energy drinks with alcohol they will still be affected by the alcohol but may not feel as relaxed or sleepy. They may feel more confident, take more risks and increase the chances of experiencing alcohol-related harm such as drinking too much or being injured in a fight or accident. It is therefore recommended that the consumption of alcoholic energy drinks be avoided.

Preventing and reducing harm

It has been suggested that the actual caffeine content of energy drinks is under-reported, meaning a person may be drinking more caffeine than the label on the drink states. Energy drinks should be avoided by anyone who feels negative effects after consuming them.

The consumption of energy drinks by young people, pregnant and breastfeeding women as well as people with 'caffeine sensitivity' should be avoided.

Mixing energy drinks with alcohol should be avoided due to the masking effects of the caffeine, meaning the person doesn't feel as drunk as they actually are and so there is more risk of alcohol-related harm.

More information

For more information on alcohol and other drugs, and drug prevention, contact DrugInfo on tel 1300 85 85 84 or email druginfo@adf.org.au.

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