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Coffee and Caffeine, a Morning Herbal Remedy of Choice

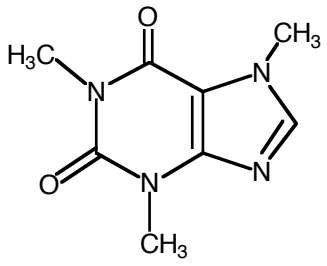
Coffee is the best-known source of caffeine - a chemical known for its ability to perk up the sleepy and the mentally inert. Although different types of coffee and different methods of brewing, as well as different sizes of cups and mugs, make the morning dose of caffeine extremely variable, it is pretty standard to consider that coffee contains *about* 100 mg of caffeine per "cup" of coffee. This hypothetical cup is a little larger than the old-fashioned teacup, a little smaller than the standard mug, and a lot smaller than the super-sized cup or mug you might actually be using. If you are curious, 100 mg. of a dry crystalline power is about the size of 1/50th of a 5 gram packet of sugar.

Caffeine content of coffee, tea, chocolate, colas, and No-Doz:

Coffee			**Tea**		
Double espresso	(2oz)	45-100 mg	Black	(8 oz)	45 –70 mg
Brewed	(8 oz)	60-120 mg	Green	(8 oz)	20 - 45 mg
Instant	(8 oz)	~ 70 mg	White	(8 oz)	15 – 20 mg
Decaf	(8 oz)	~ 1-5 mg			
			Chocolate		
Other sources			Dark chocolate	(1 oz)	20 mg
Coca or Pepsi Cola	(12 oz)	~ 35	Milk chocolate	(1 oz)	6 mg
No-Doz (per tablet)		100/200 mg	Chocolate milk	(8 oz)	4 mg

Since caffeine is water soluble, one method of making decaf is to treat beans with water, which dissolves the caffeine but leaves behind the other coffee compounds, or at least, some of them. A quickie way to decaffeinate tea is to soak a regular tea bag for a minute in hot water, pour the very strong tea and caffeine solution down the sink, and then make the tea from the (mostly) decaffeinated tea bag.

Some people consider caffeine to be one of the four major food groups, along with chocolate (see next month for more on chocolate), sugar, and salt. And of course - "everyone knows" that caffeine and especially its major source, coffee, is really, really bad for your health. Is it?



Caffeine

Well, it depends. People have been trying to demonstrate coffee's detrimental effects on health for as long as health studies have been around, but the case never seems to get made in the long run.

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One of my favorite examples of how much we want to believe that coffee is bad for our health were two studies on coffee consumption and pancreatic cancer. The first, a small pilot study, suggested that there was a link, the more coffee one drank, the higher the risk, although the report ended with the usual caveat that more work needed to be done. More work was done. All the pointers from the small study disappeared. Coffee drinking was not, after, linked to increased incidence of pancreatic cancer. These results were less widely reported in the media than the initial and more sensational pilot study.

Because of its water solubility, caffeine spreads throughout the body quickly. It is metabolized in the liver, where the methyl groups are knocked off one by one, forming theobromine (present in chocolate) and theophylline (present in tea). Other metabolites are formed also. The half-life of caffeine in the human body is 3 – 4 hours. Women metabolize caffeine faster than men.

Caffeine has a mildly stimulating short-term effect on the central nervous system, and recent evidence (take it for what you may) seems to show that it is mildly protecting for diabetes and liver cancer. We all know that too much coffee may cause the jitters but it is close to impossible to die from an overdose, although it has been done. Toxic doses can only be estimated from isolated human cases or lab studies on rats., and it comes out to be somewhere in the range of 50 – 200 cups of coffee. As in all cases of chemicals in food, there is a tiny percentage of the population that is unusually sensitive to caffeine.

Two interesting additional factoids about coffee:

- Since caffeine is a bronchodilator, coffee has been recommended as an emergency treatment for asthma.
- In spite of years of warning that coffee was not a good rehydrating drink because caffeine is a mild diuretic, recent research has shown that coffee, tea, and even soda pop does rehydrate the body.

Conclusion: For the average user who is in reasonably good health and who does not mind developing a mild habit or addiction, coffee seems to be okay; it might even be beneficial, for your health!

There are lots of good resources on coffee; here is a partial bibliography:

http://www.health.harvard.edu/press_releases/coffee_health_risk.htm
http://www.ricocoffee.com/health_&_coffee.htm
http://coffeetea.about.com/library/blcaffeine.htm:
http://www.chm.bris.ac.uk/webprojects2001/tilling/xanthines.htm
http://coffeefaq.com/site/node/25
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http://content.nejm.org/cgi/content/abstract/304/11/630
http://cebp.aacrjournals.org/cgi/content/full/10/5/429
Grandjean, AC, Reimers KJ, Bannick KE, and Haven MC. The effect of caffeinated, non-caffeinated, caloric and non-caloric beverages on hydration. *J Am Coll Nutr* 19: 591-600, 2000.