

Caffeine

Background:

- Caffeine is a drug found naturally in different resources, such as plant leaves and seeds. It can be artificially produced and added to different products like soft drinks, cold medicines, and candies. Caffeine is classified as a stimulant because it gets the central nervous system going quickly and increases a person's awareness to different aspects of life around them. (Nemours Foundation)
- Certain people are more sensitive to the drug than others, for example, pregnant women, people with heart disease, or eating disorders should not use substances with caffeine in them. Too much caffeine can cause sleeping disorders, make people short-tempered, and cause withdrawal symptoms when not adequately supplied each day. (MedlinePlus)
- Different people have different sensitivities to caffeinated substances. Sensitivity is different for every person; these aspects all play a role in how a person is affected: body mass, history of caffeine use, stressors in daily life, age, and health habits. (Mayoclinic)
- But how much caffeine is really too much? 9 out of 10 Americans rely on a dose of caffeine to get their day started; about 200-300 mg of caffeine a day is considered average. More than 500-600 mg of caffeine a day is considered too much, a person who takes this much caffeine can experience symptoms such as sleeplessness, abnormal heart rhythms, muscle spasms, and severe anxiety. (Mayoclinic)
- Athletes have been known to consume caffeine; studies done at Iowa State University have shown that athletes who take up to 3-13 mg of caffeine one hour before exercise can increase their success in a workout because they can extend their endurance before they feel completely exhausted. However, even with all of its benefits, because caffeine is a diuretic it can cause dehydration, leading to decreased athletic performance. (iastate 2004)
- Contrary to popular belief, caffeine does not sober up someone who is intoxicated. (Cool Nurse)
- Here are some products that show the different levels of added and natural caffeine: (Nemours Foundation)

SoBe No Fear	8 ounces	83 mg
Monster energy Drink	16 ounces	160 mg
Rockstar energy drink	8 ounces	80 mg
Redbull energy drink	8.3 ounces	80 mg
Jolt Cola	12 ounces	72 mg
Mountain Dew	12 ounces	55 mg
Coke	12 ounces	35 mg
Diet Coke	12 ounces	45 mg
Pepsi	12 ounces	38 mg
7-up	12 ounces	0 mg
Brewed Coffee	5 ounces	115 mg
Iced Tea	12 ounces	70 mg
Chocolate Milk	8 ounces	5 mg
Dark Chocolate	1 ounce	20 mg
Milk Chocolate	1 ounce	6 mg
Jolt Gum	1 stick	35 mg
Cold Medicine	1 pill	30 mg
Vivarin	1 tablet	200 mg
Hot Cocoa	5 ounces	4 mg
Excedrin Extra Strength	2 pills	130 mg

Statement of the Issue:

- While Healthy People 2010 aims to increase the proportion of adolescents who perceive a great risk involved with substance abuse, the Web site does not directly state anything about excessive caffeine consumption. However, they do aim to increase awareness about the dangers of drug abuse; considering caffeine is a drug classified as a stimulant, the title does fit. (Healthy People 2010)
- Healthy People 2010 directly states that, “The percentage of adolescents aged 12 to 17 years who perceive great risk associated with substance abuse is on the decline.” Kids today cannot appreciate the risk associated with substance abuse if they see their parents consuming large amounts of caffeine, and are encouraged by hefty loads of homework to use whatever means available (like energy drinks and coffees) to stay awake to get the job done. (Healthy People 2010)
- Studies have been done by the American Heart Association to see if there is direct link between caffeine consumption and coronary heart disease. The results stated that drinking one to two cups of coffee per day does not negatively affect heart health. (AHA)

- Caffeine consumption can lead to a decrease of calcium in one's body; drinking only water and soft drinks instead of milk can decrease bone density and lead to osteoporosis. (Nemours Foundation)

Epidemiologic Statement of the Problem:

- Medline plus states that “In a small group of 10 diabetics, glucose levels rose by 8 percent when participants took pills filled with the level of caffeine found in four cups of coffee.” Diabetics are prone to the negative effects of caffeine consumption. (MedlinePlus)
- Caffeine is a great risk to women who are pregnant or nursing, because the caffeine passes through the placenta to the baby. While 60 to 70% of miscarriages are due to genetic abnormalities, large amount of caffeine consumed during a pregnancy that is over 200mg can contribute to a miscarriage. “What we found was that if women have heavy caffeine intake -- greater than 200 milligrams a day -- they have double the risk of miscarriage than women that don't have any caffeine," said one of the study's authors, Dr. De-Kun Li, a reproductive and perinatal epidemiologist in the division of research at Kaiser Permanente in Oakland, Calif.”
- People who do not regularly consume caffeine can experience a sharp rise in blood pressure. Why this happens, researchers are uncertain, but MayoClinic suggests that, “Caffeine narrows blood vessels by blocking the effects of adenosine, a hormone that helps keep them widened. Caffeine may also stimulate the adrenal gland to release more cortisol and adrenaline, which cause your blood pressure to increase.” (Mayoclinic)
- People who consume over 750mg a day are subject to a tolerance with caffeine. This tolerance is especially noticeable in working adults and teens in heavy-stress school settings. Long uses of caffeine are known to deplete tolerance levels completely, which makes people subject to the alteration of daily habits such as sleep and regular cognition. (Johns Hopkins)
- While caffeine consumption is bad for pregnant women, recent studies have shown that caffeine can actually help raise immunity for ovarian cancer. (MedlinePlus)
- Caffeine consumption in children does not stunt growth. (Nemours Foundation)

- In young children, the effects of caffeine are magnified, and link to other problem such as tooth decay, obesity, and high blood pressure. (Nemours Foundation)

Solutions to the problem:

Women to Women: <http://www.womentowomen.com/fatigueandstress/effectsofcaffeine.aspx>

Women to women, a self-help Web site suggests many solutions to the problem of excessive caffeine consumption. They recommend people recognize that caffeine is not a placeholder for food or fluids, people should go to bed earlier, drink more water, and slowly limit consumption to less than 200 mg per day, which is the healthy level for proper nutrition. With these suggestions and steps, people can safely curb their caffeine habits and learn to function without a ton of the substance.

Kicking the Habit: <http://ezinearticles.com/?Caffeine-Addiction---Kicking-the-Habit&id=280214>

To kick the caffeine habit, Ezine recommends trying to straight forward eliminate caffeine, have healthy replacements on hand; like decaffeinated tea, or hot water and lemon, take tyrosine for heavy addictions, and eliminate settings where slip ups can take place, like office work settings or morning coffee runs for other people.

Programs for curbing addiction: <http://coffee.lifetips.com/cat/64619/coffee-health/index.html>

At Johns Hopkins Medical Center, Dr. Roland Griffins, professor of psychiatry and neuroscience, runs a program to help clients curb their caffeine and coffee addictions. The university runs what is known as a caffeine therapy program, which teaches people to substitute their caffeinated addictions with other healthy options, and gradually reduce caffeine consumption over time. The program has a large success rate and is widely recommended by the university.

Internet Resources:

Medline Plus. *Caffeine*. <http://www.nlm.nih.gov/medlineplus/caffeine.html#cat1>

Nemours Foundation. *Caffeine and its Effects*. <http://www.kidshealth.org>

American Heart Association. *Caffeine*. <http://www.americanheart.org/presenter.jhtml?identifier=4445>

Cool Nurse. *What is Caffeine?*. <http://www.coolnurse.com/caffeine.htm>

Bibliography:

Healthy People 2010. (n.d.). Retrieved on March 8, 2008, from <http://www.healthypeople.gov>.

Iowa State University. *Caffeine for Athletes*. Retrieved March 8, 2008 from <http://www.extension.iastate.edu/nutrition/supplements/caffeine.php>

Johns Hopkins University. *Caffeine*. Retrieved March 10, 2008, from http://www.caffeinedependence.org/caffeine_dependence.html#addiction

MayoClinic. *Caffeine and Blood Pressure*. Retrieved March 6, 2008, from <http://www.mayoclinic.com/print/blood-pressure/AN00792/METHOD=print>

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Caffeine (Class Handout)

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