

Caffeine: Boon or Bane?

These days, we are inundated with messages about the supposed benefits of caffeine, the world's most popular stimulant: more energy; better, more intense workouts; better elimination; quicker weight loss. However, a closer look reveals a far different picture.

The coffee and soft drink industries, the world's two largest producers of caffeine-laden products, have invested billions of dollars in the continued production and consumption of their products. In fact, coffee is today the second most widely cultivated crop in the world! Likewise, the diet product industry invests huge sums of money in the manufacture and promotion of its products. Small wonder that we hear so little about the detrimental effects of caffeine from these industries.

Given all of the above, how can we tell if caffeine is really good for us? An analysis of the body's reactions to caffeine tells the true story.

We should emphasize at the outset that caffeine is a drug¹. A member of the methylxanthine family, caffeine attaches to the same cell receptor sites as heroin and cocaine. The supposed "energy boost" one feels after ingesting caffeine is actually the tension felt by the body as it deals with caffeine. The reaction of the body to caffeine can be summed up as: Caffeine = Stress.

When it arrives in the stomach, caffeine starts a reaction as if the stomach had just received a large portion of protein, causing the secretion of both hydrochloric acid and protein digesting enzymes². If there is nothing for this acid-enzyme combination to react with, the combination can eventually damage the stomach itself. That is why so many caffeine abusers develop stomach problems such as ulcers³. As it continues into the digestive tract, caffeine kills the intestinal flora (e.g., acidophilus) needed by the body for proper food processing⁴. This sets the stage for long term digestive problems. Without the proper balance of intestinal flora in the digestive tract, any food passing through will not be properly broken down and can putrefy, causing a major increase in the body's toxic load.

Entering the bloodstream, caffeine completely depletes Vitamins B and C, and many important minerals such as potassium⁵. The B vitamins allow the body to deal effectively with various forms of stress, the very thing most caffeine users cite when they justify their own caffeine use. Ironically, the consumption of caffeine actually makes the body LESS able to deal with stress. It causes the body to enter the "fight or flight" response mode, as if it were facing a physical threat to its survival.

As part of this response, caffeine overstimulates the adrenal glands, causing the rapid heart rate associated with the "caffeine rush." Over time, chronic usage can actually exhaust the adrenal glands, causing fatigue, hampered immune response, and heartbeat irregularities. The secretion of adrenalin and its subsequent absence is why many chronic caffeine users feel more tired after caffeine consumption than before ingestion, thus needing more caffeine to remain "energized." At the same time, caffeine dramatically increases the body's secretion of

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cortisol, a hormone the body uses to deal with stress. The ultimate result of these processes is premature aging and increased susceptibility to disease. Caffeine has also recently been implicated in the onset of several serious chronic diseases, such as fibrocystic breast disease, several different types of cancer, heart disease and osteoporosis ^{7,8}.

Caffeine also accelerates destruction of glucosamine in the body's cartilage. When our bodies are younger, this does not have an immediate impact because the body is still able to manufacture its own glucosamine. Starting at around age 40, however, the body stops manufacturing glucosamine. Any cartilage destroyed by caffeine at this time is permanently lost unless replaced by nutritional supplementation.

Additionally, long term studies show that continued caffeine usage decreases bone mineral density in women, who are at higher risk for osteoporosis as they age. (These studies only looked at women, but the results are equally applicable to men!) ⁹. Caffeine is also a powerful diuretic, causing the body to excrete twice as much water by volume as the amount of caffeine consumed ¹⁰. Since most people do not consume enough water as it is, this adds dramatically to the problem of dehydration, currently experienced by 60% of the American population ¹¹.

Finally, when caffeine crosses the blood-brain barrier, it attacks the choline in the brain ¹². Choline is intimately tied to the brain's memory retention processes. Long term use of caffeine has been shown to detrimentally impact memory. Many habitual caffeine users cite the feeling of alertness and focus caffeine gives them as justification for continued use. In reality, extensive research has revealed that the "fight or flight" reflex stimulated by caffeine significantly degrades function of the creative, judgmental and decision making portions of the brain. Recent research has also shown that when caffeine enters the brain it causes the release of stress hormones which decrease insulin sensitivity in the body ¹³. When insulin sensitivity decreases, blood sugar is less available to the cells of the body for producing energy. This is particularly detrimental to people with diabetes.

Given all the above, it is definitely in one's best interest to discontinue caffeine use as soon as possible. A program to wean oneself from dependence on caffeine involves many factors, such as age, blood type, health history, degree of dependence, etc. We can help design a program specifically for your needs.

(This information has been derived from a large number of medical and naturopathic research sources. These sources are available on request.)

REFERENCES

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2. "Caffeine Effects," Erowid Web Site, Downloaded August 10, 2002.
3. "Caffeine Free," Judyth Reichenberg-Ullman, N.D., M.S.W., DHNAP, from the Health World Web Site, Downloaded August 10, 2002.
4. Trinity College of Natural Health Iridology Seminar, Thomas Anstett, N.D., April 13-14, 2002, Louisville, KY
5. "Nutritional Program for Caffeine Detoxification," Elson M. Haas, M.D. (Excerpted from *Staying Healthy with Nutrition: The Complete Guide to Diet and Nutritional Medicine*), from the Health World Web Site, Downloaded August 10, 2002.
6. "Tired of Being Tired," by Jesse Lynn Hanley, M.D. and Nancy Deville, G. P. Putnam's Sons, New York, 2001. p. 173.
7. "The Detox Solution," Dr. Patricia Fitzgerald, Illumination Press, Santa Monica, CA, 2001, p. 78.
8. Haas, Health World Web Site, August 10, 2002.
9. Journal of the American Medical Association (JAMA), January 26, 1994, p. 280-3.
10. Fitzgerald, p. 142.
11. Trinity College of Natural Health Iridology Seminar, Thomas Anstett, N.D., April 13-14, 2002, Louisville, KY
12. "The Ultimate Healing System," Donald Lepore, N.D., 1985, p. 337.
13. "Caffeine Disturbs Blood Sugar Hormone," Michael Smith, M.D., February 6, 2002, on WebMD Web Site

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RESEARCH NOTES

From “The Ultimate Healing System” by Donald Lepore, N.D., p. 337

“We have found that coffee contains properties which destroy Choline in the brain, therefore making one forgetful. The reason many people need a cup of coffee in the morning is that it has the ability to raise the Sodium level in the body, thereby temporarily alleviating all allergies so that the breakfast can be consumed.”

From “The Detox Solution” by Dr. Patricia Fitzgerald, p. 37

(From a Table titled “The Broader Picture”): “Caffeine . . . drains energy”

From “The Detox Solution” by Dr. Patricia Fitzgerald, p. 78

“Coffee and some teas are also potent sources of caffeine. While caffeine is a naturally occurring substance in plants, it has been associated with cardiovascular disease, fibrocystic breast disease, cancer, and behavioral problems in humans. Coffee itself has been linked with ulcers and heartburn.”

From “The Detox Solution” by Dr. Patricia Fitzgerald, p. 142

“Many people drink caffeinated beverages, which are actually dehydrating to the intestines. Add two glasses of water for every cup of caffeinated beverage you drink.”

From “The Detox Solution” by Dr. Patricia Fitzgerald, p. 157

“Caffeinated beverages and alcohol dehydrate your body”

From “The Detox Solution” by Dr. Patricia Fitzgerald, p. 185

(From the table “Lymphatic System Stressors”): Caffeine

From “The Detox Solution” by Dr. Patricia Fitzgerald, p. 187

(From the table “Dermal (Skin) System Stressors”): Caffeine

From “The Detox Solution” by Dr. Patricia Fitzgerald, p. 190

(From the table “Urinary System Stressors”): Caffeine

From “The Detox Solution” by Dr. Patricia Fitzgerald, p. 210

“. . . it’s best to avoid caffeine-laden drinks as much as possible. This includes coffees, teas, and sodas. Caffeine has a disastrous effect on the immune system due to its overstimulation of the adrenal glands. Over time, chronic caffeine consumption weakens the adrenals. This can lead to a vicious fatigue cycle in which you are drawn to drink even more caffeine-containing drinks to stay alert or even wake. Also, caffeine can cause blood sugar mechanisms to over-react, resulting in low blood sugar. In addition, the diuretic aspect of caffeine leads to a loss of bodily fluid and nutrients.”

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From “Prescription for Nutritional Healing” by Phyllis A. Balch, CNC and James F. Balch, M.D., p. 8

“Too much coffee and/or caffeinated soft drinks can interfere with calcium metabolism.”

From “Prescription for Nutritional Healing” by Phyllis A. Balch, CNC and James F. Balch, M.D., p. 124

(From the Table “Acid- and Alkaline-Forming Foods”) Coffee and soft drinks are acid forming foods.

From “Prescription for Nutritional Healing” by Phyllis A. Balch, CNC and James F. Balch, M.D., p. 130

“Avoid ... caffeine ... as [this] substance is highly toxic to the adrenal glands.”

From “Prescription for Nutritional Healing” by Phyllis A. Balch, CNC and James F. Balch, M.D., p. 336

(From the Table “Substances that Rob the Body of Nutrients”): Caffeine [robs the body of] Biotin, inositol, potassium, vitamin B1 (thiamine), zinc. Diuretics, general [rob the body of] calcium, iodine, magnesium, potassium, vitamins B2 (riboflavin) and C, zinc.

From “Prescription for Nutritional Healing” by Phyllis A. Balch, CNC and James F. Balch, M.D., p. 552

“Caffeine has been linked to calcium loss. In one study, adults given 300 milligrams of caffeine excreted more than the normal amount of calcium in their urine. Another study revealed that caffeine is associated with decreased bone minerals in women.”

From Trinity College of Natural Health Nutrition Seminar, Elaine Newkirk, N.D., March 23-24, 2002, Philadelphia, PA

“Caffeine wastes B vitamins; coffee depletes choline; calcium depleters include soft drinks and chocolate.

From Trinity College of Natural Health Iridology Seminar, Thomas Anstett, N.D., April 13-14, 2002, Louisville, KY

“60% of Americans are dehydrated; good bacteria killed by coffee”

“Caffeine Disturbs Blood Sugar Hormone,” Michael Smith, M.D., February 6, 2002, on WebMD Web Site

“... now researchers have found that caffeine affects how well insulin – the hormone that regulates blood sugar – works in the body.

“Caffeine is able to enter the brain and directly increase blood pressure and stimulate the release of stress hormones. These hormones are known to affect insulin and blood sugar in the body.

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“When insulin sensitivity goes down, this indicates that your body is less able to take blood sugar into the cells to be used for energy.

“Caffeine decreased insulin sensitivity by 15%, a significant decline compared to placebo. Plus, stress hormone levels in the blood increased with caffeine.

It’s important to keep in mind that these were healthy people. The question of whether caffeine might decrease insulin sensitivity and thus raise blood sugar in someone with diabetes is still unanswered.”

“Caffeine: Friend or Foe?” from the Health World Web Site, August 11, 2002.

“. . . drinking any caffeine-based drink is . . . taking a toll on your adrenal glands.

“. . . most researchers question any long-term benefits to the body and feel that there is more damage that will show up down the road.”

“Caffeine,” George E. Meinig, D.D.S., FACD, from the Price-Pottenger Nutrition Foundation Web Site, August 10, 2002

“Caffeine has a detrimental effect on one’s calcium-phosphorus balance and one’s blood sugar.

“Ernie Banks . . . was . . . drinking tea in huge quantities. [This] caused a severe calcium-phosphorus which is common to rheumatoid arthritis.

“Ernie’s knees were well in 60 days with the switch to water instead of tea.

“Along with the detrimental effects to the calcium balance is a lowering of blood sugar. Also the University Of Hawaii Nutrition Department found a serious depletion of Vitamin B1 in tea and coffee consumers.

“Sugar . . . compounds the calcium-phosphorus problem.”

“Caffeine Free,” Judyth Reichenberg-Ullman, N.D., M.S.W., DHNAP, from the Health World Web Site, August 10, 2002.

“As the dosage increases, you may also experience nervousness, restlessness, insomnia, tremors, and overall heightened sensitivity.

“Blood pressure becomes elevated within 2 hours after caffeine ingestion and remains high for up to 3 hours.

“Several studies have found that people who drink 6 or more cups of coffee a day are nearly twice as likely to suffer from a heart attack and those drinking 1 to 5 cups a day increase their risk by a factor of 1.6.

“. . . caffeine ingestion may cause or aggravate ulcers and the accompanying symptoms of heart burn and acid indigestion.

“In 1979 two studies by Minton described impressive improvement in breast pain, tenderness, and swelling when women eliminated all caffeine from their diets from 1 to 6 months.

“Coffee has been implicated in kidney, bladder, pancreatic, breast, ovarian and colon cancer.

“. . . the oils in the coffee antidote (deactivate) homeopathic remedies. This is true of caffeinated and water-processed decaf.”

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“Nutritional Program for Caffeine Detoxification,” Elson M. Haas, M.D. (Excerpted from *Staying Healthy with Nutrition: The Complete Guide to Diet and Nutritional Medicine*), from the Health World Web Site, August 10, 2002.

“There are several areas of concern . . . a major one . . . is the toxic chemicals used in the many stages of growing and marketing coffee. . . . TCE (trichlorethylene) or methylene chloride used in the chemical-processing may be contained as residues in the decaf coffee.

“Caffeine, like sugar, overstimulates the adrenals and then weakens them with persistent or chronic use. First, sugar stimulates and weakens the adrenals, which creates fatigue. Then we use caffeine to keep us aware and awake, further depleting our adrenals, to which many respond by drinking more caffeine with sugar.

“Caffeine, one of the class of methylxanthine[s], is present in coffee and many other drinks and products. . . . theophylline, is found in black teas; . . . Theobromine, . . . is found in cocoa.

“Initially, caffeine may lower blood sugar, leading to increased hunger or craving for sweets. After the adrenal stimulation, the blood sugar rises again.

“The amount needed to produce the wake-up[and stimulation effect increases with regular use.

“A nutritional concern of most caffeine products is that they do not contain any of the nutrients . . . needed to support the increased activity that they cause. Also, the diuretic effect of caffeine leads to the urinary loss of many nutrients.

“Allergy type addiction is also fairly common, especially with coffee, but also with tea, chocolate and cola.

“Although it may improve muscular work and short-term performance in both physical and mental athletes, it creates depletion by its diuretic ingredients . . .

“Possible negative effects from caffeine use and abuse include the following:

“ . . . excess nervousness, irritability, insomnia, ‘restless legs,’ dizziness, and subsequent fatigue . . . headaches [and] ‘heartburn.’

“An acid irritant to the gastrointestinal tract and liver, caffeine directly increases stomach hydrochloric acid production, so it is clearly bad for people with or prone to ulcers or gastritis . . . increases the likelihood of peptic ulcer disease.

“Caffeine’s diuretic effect causes loss of potassium, magnesium, zinc and other minerals, and B vitamins, especially thiamine B1. Caffeine also washes out vitamin C.

“ . . . reduces absorption of iron and calcium, especially when it is drunk around mealtime. Osteoporosis and anemia are thus more common with regular [caffeine] use.

“ . . . negative cardiovascular effects . . . raises the blood pressure . . . increases cholesterol and triglyceride blood levels . . . heart disturbances [and] arrhythmias . . . increases norepinephrine secretion, which causes some vasoconstriction.

“Fibrocystic breast disease (FBD) may also be a consequence of caffeine use.

“Birth defects have been noted with higher levels of caffeine use during pregnancy . . . caffeine crosses the placenta and affects the fetus . . . It is wise to limit or completely avoid the use of caffeine during pregnancy. Caffeine also gets into the breast milk . . .

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“The incidence of certain cancers is increased with caffeine use. Bladder cancer . . . ovarian cancer . . . pancreatic cancer . . . prostate enlargement and cancer . . .

“Caffeine may also be correlated with kidney stones . . .

“The adrenal exhaustion/stress/fatigue/hypoglycemia syndrome is tied to caffeine use as well. Caffeine has an overall effect of increasing blood sugar (especially when it is sweetened), as it stimulates the adrenals. Both stress and sugar use tend to pressure and weaken the adrenal function. Recovery from the resulting fatigue requires rest, stress reduction, and sugar avoidance, but caffeine can override this fatigue and restimulate the adrenals. This process can eventually lead to chronic fatigue, adrenal exhaustion, and subsequent inability to handle stress and sugar intake. Caffeine will then be of little help.

(From article section: “What to do – Detox”)

“An alkaline diet . . . a decrease in acid foods . . . (avoiding sugar may really help minimize caffeine withdrawal) . . . drinking at least six to eight glasses of filtered water . .

“Vitamin C supplementation . . . several grams or more of vitamin C . . . along with certain minerals such as potassium, calcium, magnesium, and zinc . . . B complex vitamins with extra Pantothenic acid.

“. . . support the commonly depleted nutrients . . . B1 . . . B2 . . . B6, vitamin C, potassium, magnesium, and probably zinc, calcium, and the trace minerals. Water intake and additional fiber, even on top of a high fiber diet, will help support the bowel function, which can slow down during caffeine withdrawal.”

“Caffeine,” Geraldine Moses, B. Pharm., Queensland Medication Hotline, Mater Pharmacy Services, Mater Misericordiae Hospitals, Brisbane, Australia, August 10, 2002.

(From list “Risks of Caffeine Consumption”)

“. . . increased blood pressure and rapid pulse . . . aggressive mood . . . insomnia . . . dehydration . . . decreased bone density . . . increase[d] incidence of kidney stones

“. . . coffee may contribute to pancreatic or bladder cancer.

“. . . people with a heart condition or blood pressure should limit or avoid caffeine consumption.”

“Caffeine Blocks Insulin,” Gabe Mirkin, M.D., transcript from “The Dr. Gabe Mirkin Show,” downloaded from web site August 10, 2002.

“. . . A recent report from the Netherlands shows that caffeine in coffee raises blood sugar levels.

“. . . caffeine raises blood sugar levels by causing the body to put out large amounts of adrenalin that makes cells less responsive to insulin.”

“Caffeine,” University of Texas Web Health Department Site, downloaded August 10, 2002.

“. . . your body will try to disable or remove the drug as soon as possible with as few adverse side effects as possible. The main defense you have in this initial is your liver. It starts working overtime to destroy or pacify this molecule called caffeine.

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“. . . brain activity remains at its excited state and can even increase in activity. This is because adenosine is unable to slow the brain activity . . . caffeine does not directly increase brain activity, instead it keeps the brain from controlling its own activity.

“What ever the function of the binding of adenosine was, caffeine inhibits that function.

“The adenosine receptors function in the kidneys to control blood flow and the amount of urine excreted. When caffeine blocks the receptors, the blood vessels in the kidneys dilate, and thus more urine is created. So, when we drink substances that contain caffeine, we are likely to urinate more frequently.

“. . . combined with caffeine’s diuretic effect, an increased level of exercise can lead an athlete to dehydration.”

“Caffeine, Sugar and Bone Loss,” Noel Peterson, N.D., Health World Naturopathic Medicine Page, Health World Web Site, Downloaded August 10, 2002.

“What this study tells us is that, while it is important to have adequate calcium in our diets, it is just as important not to overeat foods that cause calcium loss.”

“Caffeine Effects,” by Erowid. Erowid Web Site, Downloaded August 10, 2002.

“The physiological effects of caffeine can begin as early as 15-45 minutes after ingestion. Its maximum central nervous system effects are reached in about 30-60 minutes. Caffeine increases heartbeat, respiration, basal metabolic rate, and the production of stomach acid and urine; and it relaxes smooth muscles, notably the bronchial muscle.

“Studies have also shown that caffeine decreases reaction time to both visual and auditory stimuli . . .

“The time required for the body to eliminate one-half of the total amount of caffeine consumed . . . for the average non-smoking adult is about 5-7 hours.

“The half life of caffeine in a pregnant woman is 18-20 hours.

“HEARTBURN . . . coffee has been shown to relax the sphincter muscles at the lower end of the esophagus, allowing the stomach contents to “back up” into the esophagus; this is called heartburn.

“ULCERS . . . Caffeine can increase the secretion of both acid and pepsin in the stomach.

FIBROCYSTIC BREAST DISEASE . . . several well-publicized studies linked caffeine consumption with benign fibrocystic breast disease (FBD).

HEART PROBLEMS . . . Caffeine has been shown to cause cardiac arrhythmias . . . in certain individuals.”

“How Caffeine Works,” by Marshall Brain, from the How Stuff Works Web Site, Downloaded August 10, 2002.

“Caffeine is an addictive drug.

“If you feel like you cannot function without it and must consume it every day, then you are addicted to caffeine.

“Two mugs of coffee or a mug of coffee and a couple of Cokes during the day are all you need to get you there.

“The binding of adenosine causes drowsiness by slowing down nerve cell activity.

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“To a nerve cell, caffeine looks like adenosine. Caffeine therefore binds to the adenosine receptor. However, it doesn’t slow down the cell’s activity like adenosine would.
“ . . . instead of slowing down because of the adenosine level, the cells speed up.
“So now you have increased neuron firing in the brain. The pituitary gland sees all of the activity and thinks some sort of emergency must be occurring, so it releases hormones that tell the adrenal glands to produce adrenalin (epinephrine).
“Caffeine also increases dopamine levels in the same way that amphetamines do (heroin and cocaine also manipulate dopamine levels by slowing down the rate of dopamine re-uptake).
“Obviously caffeine’s effect is much lower than heroin’s, but it is the same mechanism. It is suspected that the dopamine connection contributes to caffeine addiction.”

Journal of the American Medical Association (JAMA), January 26, 1994, p. 280-3.

“There was a significant association between (drinking more) caffeinated coffee and decreasing bone mineral density at both the hip and the spine, independent of age, obesity, years since menopause, and the use of tobacco, estrogen, alcohol, thiazides, and calcium supplements [in women].”

“Tired of Being Tired,” by Jesse Lynn Hanley, M.D. and Nancy Deville, G. P. Putnam’s Sons, New York, 2001.

“Regular caffeine intake increases cortisol levels and lowers DHEA levels, which eventually depletes your adrenal reserve.” p. 173

“ . . . using stimulants such as caffeine keeps your body too acidic and in a constant state of sympathetic dominance.” P. 198

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