

Daily Life with Christ-71: Understanding brain addictions (10). Psychoactive drugs: how caffeine changes the brain.

PROS AND CONS OF COFFEE CONSUMPTION

COFFEE CONTAINS ANTIOXIDANTS, VITAMINS AND MINERALS AND A FEW DIETARY PROTEINS.

Research shows coffee consumption has reduced the risk of some diseases and ailments, including:

- Parkinson's
- Alzheimer's
- Type 2 diabetes
- Gallstones
- Cancer - oral, esophageal and pharyngeal
- Asthma attacks
- Heart rhythm problems
- Strokes
- Cirrhosis of the liver
- Caffeine increases the effectiveness of certain types of painkillers; act as a stimulant

GOOD FOR THE GARDEN: Used coffee grounds benefit many plants, adding nitrogen to the soil.



WOMEN who drank at least 5 cups a day were 57% less likely to have estrogen receptor-negative cancers than those who drank less than a cup a day. Heavy coffee drinkers had 20% less risks of contracting any kind of breast cancer when age was taken into account.



MEN who drank at least 6 cups a day were 60% less likely than non-coffee drinkers to develop the most lethal form of prostate cancer. They were 20% less likely to develop any form of the disease. Men who drank 1-3 cups per day were 30% less likely to develop the deadliest form of prostate cancer.



EVEN THOUGH CAFFEINE CAN HAVE POSITIVE EFFECTS, OVERCONSUMPTION MAY CAUSE NEGATIVE RESULTS.

Negative effects may include:

- Changes in sleep pattern
- May cause auditory hallucinations
- Hampers absorption of some minerals and vitamins, such as magnesium, zinc and iron
- Can raise blood pressure
- Mild diuretic could lead to dehydration and a loss of vitamins B and C as well as calcium, iron and zinc
- Can stain teeth
- Acids can aggravate heartburn

ROASTING THE BEANS: Coffee contains hundreds of compounds, some brought out during the roasting process; some of the carcinogens produced by the high heat of roasting include cresole, pyrimidine, tars and polycyclic aromatic hydrocarbons.

Coffee is among crops most heavily sprayed with pesticides.



AVERAGE CAFFEINE CONTENT PER CUP (IN MG):

Drip coffee	115-175
Espresso	100
Brewed	80-135
Instant	65-100
Decaf, brewed	3-4
Decaf, instant	2-3

POSSIBLE WEIGHT GAIN (CAL.):

Whipped cream (4 oz.)	77
Mocha, caramel (per pump)	25
Sugar packet	15
Flavored creamer (1 Tbsp.)	15-35
Whole milk (2 Tbsp.)	18
Nonfat milk (2 Tbsp.)	11
Soy milk (2 Tbsp.)	17

SOURCES: Harvard School of Public Health, e-importz.com, National Coffee Association, The Specialty Coffee Association of America, Stroke: Journal of the American Heart Association.

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Coffee and the Brain



Every new year seems to bring renewed commitments to New Year's resolutions to finally break a bad habit, an addiction, a vice. These renewed commitments usually last for a month or so until a person's will finally gives up, and the person returns to what he "wishes" (on the lower level) he would not do (on the higher level). When a person does something he really does not want to do (e.g., from his higher self, his conscience), he is fragmented, divided in himself, and thus is incapable of enjoying true freedom as a human being.

A distinction needs to be made between the contemporary view of freedom and the classical view of freedom. The former tends to define freedom as doing what one wants. The latter defines freedom as fulfilling one's highest and truest nature in the good of its highest nature. In the former, an alcoholic would be considered free because he drinks all that he wants. In the latter, the alcoholic would not be considered free because being an alcoholic is not fulfilling his highest and true self—the true self is enslaved by his lower self's addictions. In other words, his brain addiction in his lower material self has taken captive his higher spiritual, immaterial self. The lower sense appetites end up controlling the spiritual nature of the person.

These lower sense appetites that become addictions are a result of a change of brain chemistry, which is why they have a very powerful influence on our lives. Understanding these changes in the brain enables one to understand these powerful addictive influences. The goal of this series is to help people understand the physical changes in the brain that make resolutions so difficult to keep. Moreover, to understand the physical causes of addictive cravings enables the believer to have more sympathy for addicts. It is not just a matter of sheer brute force, brute resolve, of the immaterial will—for the will is tied to the material and thus to physical cravings.

On the nature of drugs, recall that I said that any substance introduced into the body that changes a biological function in a person's body is classified as a drug. This means that an antacid is a drug. Recall also that when a substance makes a change in the brain, then it is a psychoactive drug. An antacid is a drug, but it is not a psychoactive drug—it does not change brain chemistry.

Let us start with the most prevalent and most innocuous psychoactive drug, namely, caffeine. We so love our coffee—Eighty to ninety percent of Americans drink coffee or other caffeinated drinks every day. A typical adult consumes 200 to 400 milligrams of caffeine every day on average. Except in severe cases, consuming caffeine on a regular basis does not pose a health risk. In fact, moderate caffeine has a number of health benefits, e.g., reducing the risk of Parkinson's disease and type 2 diabetes. The psychoactive nature of this drug also increases alertness and improves concentration. However, because it is a psychoactive drug it works in ways that are similar to other more dangerous psychoactive drugs.

Regular use of caffeine can and does lead to physical dependence, and the associated symptoms of tolerance and withdrawal, just like the regular use of other dangerous drugs do. Many readily agree that they cannot function in the morning until they have had their java. How does caffeine change the chemistry of the brain? Caffeine is what is known as an adenosine receptor antagonist. This means that it prevents the brain chemical adenosine from turning on receptors in the brain. Adenosine is an inhibitory brain chemical, which means that it tends to reduce neural activity. The reduced neural activity is related to sleep-wake cycle. Caffeine blocks the effect of

adenosine and therefore fools the brain into thinking that it has not been awake for as long as it has. Caffeine also stimulates dopamine production, but not nearly as much as the dangerous psychoactive drugs.

Caffeine is different than dangerous psychoactive drugs in that it does not significantly charge or boost the reward circuit (nucleus accumbens, ventral tegmental area). In other words, it has a much weaker effect on the brain's reward circuit. People do not generally drink caffeine because of cravings so strong as to lead to unhealthy and even life-threatening behavior.

Instead of the desire to drink coffee due to intense cravings from the human brain's reward system, most people drink coffee to avoid the negative withdrawal symptoms of fatigue or irritability. In other words, caffeine is more associated with negative consequences than positive consequences. For these reasons, caffeine is not considered to be a drug of abuse. However, repeated use does lead to changes in the brain and ultimately physical dependence. But this dependence does not lead to the significant negative consequences like other drugs that we will be examining in the next few articles.

Thank God for the pleasure and blessings of caffeine/coffee. However, let us not so abuse this gift that we become dependent on it and thereby fail to enjoy a full and robust freedom--to thrive as a human being and a son of the Living God without the need for drug stimulation. We should not need caffeine because we have so abused it, and with that abuse compromise our otherwise healthy and normal functioning brain.

John 8:32, "And you shall know the truth, and the truth shall make you free."

Pastor Don Hargrove