

## HIGHLIGHTS

- Carolus Linnaeus named the cocoa tree *Theobroma cacao* which means food of the gods
- Cacao drinks were consumed by Aztec elites
- The Aztecs of South America, used cacao beans as currency
- Cravings can be associated with certain pathologies
- Chocolate may be as addictive as cocaine
- Women tend to crave chocolate more than men
- Women seem to experience more chocolate cravings during the premenstrual phase and luteal phase of their menstrual cycles
- Chocolate unnaturally stimulates the release of dopamine in the brain

# CHOCOHOLICS

## WHY CHOCOLATE IS NOT SO SWEET

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### CHOCOLATE

According to the National Confectioners Association, Carolus Linnaeus named the cocoa tree *Theobroma cacao* which means food of the gods. This fruit tree produces cacao seeds used to make chocolate. Cacao, when processed for consumption, was considered the drink of the elite. The Aztecs of South America, even used cacao beans as currency. As we delve deep into the not so delicious science of chocolate, we will see a much darker side of the much favored commodity. Let's take a closer look at the sweet delicious treat...chocolate.

### CHOCOLATE CRAVINGS

Cravings can be associated with certain pathologies. There are sexual disorders where people crave pornography, social disorders where people experience increased or decreased desire for material goods or something else, and eating disorders where people crave certain foods. In a double blind study, chocolate exhibited significant psychopharmacological activity. There is also evidence from rodent studies that chocolate may be as addictive as cocaine. Women tend to crave chocolate more than men. Some women experience food cravings near or during the time of menstruation. Women seem to experience more chocolate cravings during the premenstrual phase and luteal phase of their menstrual cycles.

### WHY HAVE CRAVINGS?

Chocolate seems to stimulate the reward centers of our brains. Chocolate unnaturally stimulates the release of dopamine in the brain because of the addictive substances found in the chocolate such as caffeine and nicotine. Dopamine is a neurotransmitter that makes us feel pleasure. When we consume chocolate, we feel great pleasure. By repeatedly consuming chocolate, we develop addictive behavior and experience chocolate cravings. As noted before, women experience chocolate cravings more than men, and women seem to crave chocolate more during their menstrual cycles. This has to do with the interplay between hormones and possible mineral deficiencies.



- Cacao seeds are covered with a fibrous whitish pulp that must be fermented off before the seeds can be roasted and processed
- The seeds are all collected together in large trays, boxes, tanks or in piles covered by banana leaves and left outside for two to twelve days
- Fermentation does not kill all pathogens
- Acetic acid bacteria still survive the fermentation process
- The high fat and high sugar or salt environment of chocolate provides a favorable environment for Salmonella
- 60 insect fragments per 100 grams of chocolate is allowed in the U.S.A

## HARVESTING & PROCESSING

Cacao beans are usually harvested by hand. The pods in which the cacao beans are stored are broken open. The pulp and seeds are removed from the fruit. Cacao seeds are covered with a fibrous whitish pulp that must be fermented off before the seeds can be roasted and processed. The seeds are all collected together in large trays, boxes, tanks or in piles covered by banana leaves and left outside for two to twelve days. Storing and fermenting the seeds in such a way as this presents an issue for food safety and cleanliness because insects, rats, mice, dogs, cats and other animals can easily contaminate the seeds with their urine and feces. Also, the fermentation process does not kill all pathogens. Acetic acid bacteria still survive the process.

## FOODBORNE ILLNESS & CONTAMINANTS

Back in the 1970's, outbreaks of Salmonella food poisoning occurred via the consumption of contaminated chocolate. Salmonella can cause significant illness with only a low infective dose to produce severe food poisoning symptoms. During chocolate production, cocoa is roasted and later combined with other ingredients further along in the chocolate manufacturing process. The high fat and high sugar environment of chocolate provides favorable survival conditions for Salmonella. This environment helps the bacteria to avoid damage from heat processing. In order to destroy bacteria, some countries have started treating cacao beans with radiation. Moreover, contaminants such as rodent hair, feces, urine and insect body parts are allowed in chocolate. For example, 60 insect fragments per 100 grams of chocolate is allowed in the U.S.A.

## FERMENTATION & ALCOHOL

Cacao seeds are fermented in order to remove the whitish pulp. The process of fermentation produces alcohol. When consumed, this poisonous liquid makes the body more susceptible to infections, damages the heart and liver, promotes cancer and contributes to dangerous health conditions. These awful health conditions include atherosclerosis, trauma, stroke, asthma, hyperoxia, arthritis, heart attack, age pigments, dermatitis, cataractogenesis, retinal damage, hepatitis, and periodontitis.

To learn more about alcohol visit: <https://chainoftruth.org/alcohol/>



- In chocolate, we will find caffeine, nicotine, myosmine and other compounds
- Caffeine, theobromine and theophylline are methylxanthines
- All methylxanthines stimulate catecholamine release
- Catecholamines are related to the development of syndromes and cancers
- Carob is a good cacao/cocoa alternative

## THE CAFFEINE CONNECTION

In chocolate, we will find caffeine, nicotine, myosmine and other compounds. Caffeine is a stimulant and is not good for our health. Moreover, caffeine is a methylated xanthine. To understand more about caffeine, we have to know what methylxanthines do.

## METHYLXANTHINES: THE CANCER CONNECTION

In standard portions of chocolate, methylxanthines are found. Caffeine, theobromine and theophylline are methylxanthines. All methylxanthines stimulate catecholamine release. Catecholamines are very much related to the development of syndromes and cancers. For example, neuroblastoma is an extracranial solid tumor that occurs most frequently in early childhood. In preclinical stages, neuroblastoma can be identified by the detection of catecholamines in the urine. Cocoa, which forms the basis of many chocolates, is known to contain over 300 volatile chemicals and carcinogenic compounds. Theobromine is the active principle in cocoa or chocolate. Theobromine is closely related to theine. When given in ordinary doses, this chemical stimulates the heart and kidneys and increases the elimination of carbonic acid through the lungs. In large doses, theine can cause nausea, vertigo and even death.

## CAROB: THE CHOCOLATE ALTERNATIVE

A good alternative for cacao or cocoa is carob. It tastes much like chocolate and can be used for making all those delicious desserts that we are so accustomed to. Carob is a much healthier option, and it is not addictive like the “food of the gods” is. Humanity has all too often made food their god. However, God has directed His people saying “Thou shalt have no other gods before me.” (Exodus 20:3). Considering all the bad news about chocolate, perhaps it is best to leave the “food of the gods” alone and choose carob in order to supply our chocoholic cravings.

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