# The Cocoa Romance

By John Glenn Clark, M.D. www.NorthernLightsHealthEducation.com

## Low on love?

Chocolate is a key romance ingredient in many of Michael Webb's recommendations in his book: 101 Romantic Ideas.<sup>1</sup>, Owner of the website TheRomantic.com, Michael devotes a whole page to romantic chocolate ideas.<sup>2</sup> And why shouldn't he? Isn't chocolate



the most craved food by females?<sup>3</sup> Indeed, 45% of American women regularly crave chocolate.<sup>4</sup> Thanks to Phenethylamine (PEA),<sup>5</sup> the "love hormone", and

other psychoactive substances, cocoa is a powerful stimulator of the sexual pleasure center of the brain<sup>6</sup> and is a driver of erotic behavior.<sup>7</sup> As could be expected, women indulging in more cocoa products score higher points on the Female Sexual Function Index.<sup>8</sup>

# Food of the Gods

Is chocolate's addictive power limited to its role as icon of America's love affair with sex or does it have a magic all its own? The most active ingredient in chocolate is theobromine; its name is taken from the Greek name of the plant from which this product is derived Theobroma Cocoa, which literally means, "cocoa—food of the gods". Complemented, as it is in chocolate, with caffeine, theobromine is responsible for much of the addictive power of your favorite cocoa product. This "food of the gods" maybe more addictive than you bargained for. 12,13

## **Heroine or Heroin**

Studies show that chocolate trumps hot chili pepper on food, people's favorite alcoholic beverage, video games, coffee, tea, cola beverages, gambling, and even cigarettes in its addictive power. People with a lack of control around chocolate are called "Chocoholics". Could chocoholics really be closet heroin addicts? That may be stretching it a bit, but humans and animals given a drug which blocks their body's opioid receptors (receptors activated by drugs such as heroin, morphine and opium) virtually lose their addictive attraction to chocolate. Thus, chocolate's addictive power lies in its ability to stimulate the same opioid receptors in the brain as morphine. Maybe this explains the pervasiveness of this annual \$17 billion, 3.5 million ton industry from which the average American obtains around 22 pounds of cocoa per year. And why isn't morphine allowed as

an ingredient in candy? Narcotics enfeeble and degrade the intellect, lower the morals and cause a person to lose the power to resist temptation.

### Mary Jane on the Brain

But what of the euphoria well known to chocolate devotees? While you won't turn positive for cannabinoids on a urine drug screen, chocolate is like Marijuana. There are three substances in chocolate that activate cannabinoid receptors in the brain and mimic the psychoactive effects of marijuana.<sup>19</sup> Is it any wonder that chocolate is widely believed to enhance the effect of marijuana.<sup>20</sup> SPECT scan studies of the brains of cannabis users reveal an appalling lack of neural activity in the frontal lobes. The frontal lobes are where your conscience is located—where you discriminate between right and wrong and make important moral decisions. Paul declares, "All things are lawful unto me, but all things are not expedient: all things are lawful for me, but I will not be brought under the power of any." 1Corinthians 6:12 A Christian should never use a product that will bring them under its power. "Know ye not, that to whom ye yield yourselves servants to obey, his servants ye are to whom ye obey; whether of sin unto death, or of obedience unto righteousness?" Romans

## If You Like It, Why Not Claim It's Healthy?

In her article published in the journal *Dimensions of Critical Care Nursing*, "Chocolate: the health food", Vickie A. Miracle states, "Then there are times I believe I was born too early. I have been

proclaiming chocolate as a health food since I was 6 years old! I do confess to being a chocoholic and proud of it. Now science has caught up with my theory. Chocolate does have health benefits. These benefits have been reported in the literature for more than 10 years. While the history of the cacao plant and chocolate is very interesting, it is not the intent of this



editorial to discuss this. Rather, this editorial will explain why chocolate may have health benefits, some of its benefits, its disadvantages, and current recommendations for those who

enjoy eating chocolate."21 I have no grumble with the trend in our society to elevate the value of health to an all time high. And maybe we should be happy that this author does not live in a culture where some practices offensive to our thinking reigns supreme, else we might be obliged to read editorials touting chocolate as just the thing to make primitives better head hunters, Eskimos better whalers, and French better.... You get the idea. This elevating of substances of questionable nutritional value includes such delicacies as rotten apples sold as "organic apple cider vinegar", inebriating red wine touted as good for your heart, medicinal marijuana—the legalization of a brain destroyer and formerly discarded whey powder as good to build your muscles. It seems that chocolate is so subtly destructive to your intellect and morals as to make its promulgation as a health product seem plausible. If you like it, why not just claim you like it, why purport to have discovered medicinal properties for it?

## Weight Loss Wonder

With obesity at an all time high and the existence of a \$60 billion per year weight loss market why not sponsor a weight loss study? According to Carol E. O'Neil, Victor L. Fulgoni III and Theresa A. Nicklas, in their article of June 2011, which appeared in *Food & Nutrition Research*, "Total, chocolate, and sugar candy consumption was not associated with weight/adiposity variables

and candy
consumers were
less likely to be
overweight or
obese than noncandy consumers."
"Current levels of
candy consumption
were not associated
with adverse health
parameters in
children or
adolescents." One is
called to wonder
how these things



can be so. Doesn't this go against conventional wisdom? But further investigation reveals that under the heading "Conflict of interest and funding" it is admitted, "Partial support was also received from the National Confectioners Association."<sup>22</sup> Research has become merely a line item in an advertizing budget. Many of these commercial enterprises have research funding that far exceed the entire yearly budget of the National Institute of Health. Imagine the economic value of a scientific discovery. "Science" discovers that chocolate cures some disease, news agencies spread the story, and people opt for one more scoop of chocolate ice cream at the dairy stand.

# Hair On Bald Heads And Feeling In Peg Legs

The list of medicinal properties for chocolate is growing. Researchers reach for the dark, flavonoid rich vial marked cocoa and test subjects turn up healthier.<sup>23</sup> But where did this nasty

tasting laboratory version of the common candy bar come from? These specially prepared cocoa samples are not the same as the readily available commercial products people buy in the store.<sup>24</sup> The street variety tends to be loaded with fat and sugar and only overthrows a persons resistance to indulgence of appetite.<sup>25</sup> Indeed, up to 98% of calories in chocolate preparations comes from fat and sugar.<sup>26</sup>,<sup>27</sup> Sugar, by itself, is a drug of addiction. The addictive nature of sugar generates phenomenally high levels of obesity.<sup>28</sup> Sugar surpasses cocaine in its ability to elevate the addiction hormone dopamine in the brain making sugar more addictive than some street drugs.<sup>29</sup> And why all the fat in this product? The sensory experience of tasting fat overpowers selfcontrol and increases food intake even in people who are usually restrained eaters.<sup>30</sup> Taken in combination, fat and sugar work to weaken food satisfaction signals to the brain and activate hunger signals driving excessive food consumption.31,32

## Easter Bunny or Trojan Horse?

Taste good? Yes! But not all chocolate's effects generate good health:

- The amount of cocoa contained in one half ounce of milk chocolate when taken daily is enough to double the risk of prostate cancer.<sup>33</sup>
- Daily chocolate consumption lowers bone density and strength,<sup>34</sup> due in part to increasing the volume of precious bone calcium lost in the urine.<sup>35</sup>
- Sweet tooth? Will your teeth appreciate cocoa suspended in creamy milk? No, dental cavities multiply with such concoctions.<sup>36</sup>
- That burn in the chest, is it heart troubles? Not likely, chocolate is billed as heart healthy.<sup>37</sup> Try heartburn!<sup>38</sup> Chocolate relaxes the lower esophageal sphincter causing reflux and pain symptoms.<sup>39</sup>,<sup>40</sup>
- Romantic dreams or nightmares? A disorder that gives people nightmares and makes them move violently in their sleep could be aggravated by eating chocolate. 41
- Constipation complicates the treatment of hospital patients on morphine. Chocolate is perceived by many people as a constipating food, possibly by the same opioid receptor stimulating mechanism as morphine.<sup>42</sup>
- Chocolate on the brain? Foods more commonly reported as headache triggers include: alcoholic drinks, chocolate and cheese.<sup>43</sup>,<sup>44</sup>,<sup>45</sup>

And why does chocolate share disease triggering properties with cheese? Both are fermented products! Fermentation, like the rotting of apples to make vinegar, contaminates products with toxins known to cause illnesses. What happens to a box of good apples when you throw a rotten one in the batch? They all rot.

What happens when you eat rotten foods? You rot—otherwise known as oxidative stress, free radical formation, and lipid peroxidation. People consuming aged, rotted, fermented, spoiled foods suffer the consequences. Maybe this is why chocolate is a huge red flag for autoimmune inflammatory conditions.

- Inflammation is the key ingredient in inflammatory bowel disease. Cocoa products increase the risk of ulcerative colitis and Crohn's disease by a whopping 150%.<sup>46</sup>,<sup>47</sup>
- And what of rheumatoid arthritis? Chocolate aggravates the symptoms of inflammatory arthritis making it harder to bear. 48,49
- Are worms the only instigator of an itchy anus? Think chocolate. Cocoa products are among the top 6 foods causing "Pruritus Ani"50
- Chocolate increases the risk of acne by 40% in teenage boys.<sup>51</sup>
- The psychoactive components of chocolate are concentrated in breast milk,<sup>52</sup> and infants breastfeeding on mothers eating chocolate are more likely to experience allergic dermatitis.<sup>53</sup>

Don't be fooled, not everything made out to be pure gold is really gold at all.

#### **Dark Chocolate**

"Hey Clark, your going to love this one," David was animate, "they (the TV) just exposed the west Africa slave trade in the production of half the world's chocolate. Teenagers are stolen from places like Togo and taken to Ivory Coast chocolate plantations where they are literally worked to death in 4 years." Shocking, I thought, but at the time, not being a TV watcher and having no way to verify the account, I shuffled the information to the back of my mind. Then, when conducting this current chocolate investigation I decided to explore the story. Factual beyond controversy, it's now all over the internet. Let Chocolate, due to its addictive nature, is one of those products, along with sugar, opium and other drugs, coffee, tea, tobacco, and other cash crops that have helped create the poverty-stricken third world. Man's insatiable desire for something stimulating, and the greed

## References:

<sup>1</sup> Michael Webb (Author), Bill Vincent (Illustrator). 101 Romantic Ideas, Publisher: Fraser Keith Johnson. http://www.theromantic.com/

of the empires, have synergized to plunder the economies and ecologies of the poorer agrarian nations.<sup>55</sup>

An older Jamaican related to me his experience on the coffee plantations of their island nation. The English started Jamaica growing cash crops, then pitted them against Guyana, who they had also started growing these crops. When the English traders lowered the price they offered for coffee to the point that the Jamaicans would lose money, the president of Jamaica was forced to plead with them to raise the going price. The English just stated that they could get the coffee cheaper from Guyana. My Jamaican friend was still incensed that the president of his country should be so humiliated. Such are the atrocities that reduced stable agricultural based nations to poverty, subservience, and near starvation.

## **Home to Roost**

How many weeks would you be willing to have one of your family members go and labor on a chocolate plantation to obtain your



precious "food of the gods"? It would be a most memorable experience. They'd lose weight; have scars all over their backs in testimony to the appreciation they were shown, and perhaps be grateful to just escape with their lives. Next time you sink your teeth into a luscious bar of rich tasty chocolate pause to consider how many teenage Africans gave their lives for your excess.

# The Biggest Losers

Who are the greatest slaves here, the unpaid child laborers who have no say in the matter, the greedy unscrupulous plantation owners who organize such crimes against humanity, or the addicted product users who for a moment of pleasure are willing to brush over their accountability in this whole drama? There is no more subtle form of slavery than when the captives will their own captivity.

<sup>&</sup>lt;sup>2</sup> http://www.theromantic.com/stories/chocolate/main.htm

 $<sup>^3</sup>$  Rozin P, Levine E, Stoess C. Chocolate craving and liking. Appetite. 1991 Dec;17(3):199-212.

<sup>&</sup>lt;sup>4</sup> Hormes JM, Timko CA. All cravings are not created equal. Correlates of menstrual versus non-cyclic chocolate craving. Appetite. 2011 Aug;57(1):1-5.

<sup>&</sup>lt;sup>5</sup> Ziegleder G, Stojacic E, Stumpf B. Occurrence of beta-phenylethylamine and its derivatives in cocoa and cocoa products. Z Lebensm Unters Forsch. 1992 Sep;195(3):235-8.

<sup>&</sup>lt;sup>6</sup> Schroeder BE, Binzak JM, Kelley AE. A common profile of prefrontal cortical activation following exposure to nicotine- or chocolate-associated contextual cues. Neuroscience. 2001;105(3):535-45.

<sup>&</sup>lt;sup>7</sup> Segal M, Shohami E, Jacobowitz DM. Phenylethylamine, norepinephrine and mounting behavior in the male rat. Pharmacol Biochem Behav. 1984 Jan;20(1):133-5.

<sup>&</sup>lt;sup>8</sup> Salonia A, Fabbri F, Zanni G, Scavini M, Fantini GV, Briganti A, Naspro R, Parazzini F, Gori E, Rigatti P, Montorsi F. Chocolate and women's sexual health: An intriguing correlation. J Sex Med. 2006 May;3(3):476-82.

 $^9$  Lima LJ, Almeida MH, Nout MJ, Zwietering MH. Theobroma cacao L., "The food of the Gods": quality determinants of commercial cocoa beans, with particular reference to the impact of fermentation. Crit Rev Food Sci Nutr. 2011 Sep;51(8):731-61.

- Stark T, Bareuther S, Hofmann T. Molecular definition of the taste of roasted cocoa nibs (Theobroma cacao) by means of quantitative studies and sensory experiments. J Agric Food Chem. 2006 Jul 26;54(15):5530-9.
   Smit HJ, Blackburn RJ. Reinforcing effects of caffeine and theobromine as found in chocolate. Psychopharmacology (Berl). 2005 Aug;181(1):101-6.
- <sup>12</sup> Tuomisto T, Hetherington MM, Morris MF, Tuomisto MT, Turjanmaa V, Lappalainen R. Psychological and physiological characteristics of sweet food "addiction". Int J Eat Disord. 1999 Mar;25(2):169-75.
- $^{\rm 13}$  Heyne A, Kiesselbach C, Sahún I, McDonald J, Gaiffi M, Dierssen M, Wolffgramm J. An animal model of compulsive food-taking behaviour. Addict Biol. 2009 Sep;14(4):373-83.
- $^{14}$  Rozin P, Stoess C. Is there a general tendency to become addicted? Addict Behav. 1993 Jan-Feb;18(1):81-7.
- <sup>15</sup> Hetherington MM, MacDiarmid JI. "Chocolate addiction": a preliminary study of its description and its relationship to problem eating. Appetite. 1993 Dec;21(3):233-46.
- <sup>16</sup> Drewnowski A, Krahn DD, Demitrack MA, Nairn K, Gosnell BA. Taste responses and preferences for sweet high-fat foods: evidence for opioid involvement. Physiol Behav. 1992 Feb;51(2):371-9.
- <sup>17</sup> Biggs TA, Myers RD. Naltrexone and amperozide modify chocolate and saccharin drinking in high alcohol-preferring P rats. Pharmacol Biochem Behav. 1998 Jun;60(2):407-13.
- <sup>18</sup> McShea A, Ramiro-Puig E, Munro SB, Casadesus G, Castell M, Smith MA. Clinical benefit and preservation of flavonols in dark chocolate manufacturing. Nutr Rev. 2008 Nov;66(11):630-41.
- $^{19}$  di Tomaso E, Beltramo M, Piomelli D. Brain cannabinoids in chocolate. Nature. 1996 Aug 22;382(6593):677-8.
- $^{20}$  James JS. Marijuana and chocolate. AIDS Treat News. 1996 Oct 18;(No 257):3-4.
- $^{21}$  Miracle VA. Chocolate: the health food. Dimens Crit Care Nurs. 2010 Mar-Apr;29(2):108-9.
- <sup>22</sup> O'Neil CE, Fulgoni VL 3rd, Nicklas TA. Association of candy consumption with body weight measures, other health risk factors for cardiovascular disease, and diet quality in US children and adolescents: NHANES 1999-2004. Food Nutr Res. 2011;55. doi: 10.3402/fnr.v55i0.5794.
- <sup>23</sup> Hamed MS, Gambert S, Bliden KP, Bailon O, Singla A, Antonino MJ, Hamed F, Tantry US, Gurbel PA. Dark chocolate effect on platelet activity, C-reactive protein and lipid profile: a pilot study. South Med J. 2008 Dec;101(12):1203-8.
- <sup>24</sup> Alonso A, de la Fuente C, Beunza JJ, Sánchez-Villegas A, Martínez-González MA. Chocolate consumption and incidence of hypertension. Hypertension. 2005 Dec;46(6):e21-2;
- <sup>25</sup> Bertéus Forslund H, Torgerson JS, Sjöström L, Lindroos AK. Snacking frequency in relation to energy intake and food choices in obese men and women compared to a reference population. Int J Obes (Lond). 2005 Jun;29(6):711-9.
- <sup>26</sup> Pennington JAT. Bowes and Church's food values of portions cornmonly used. New York: Lippincott & Co. 1994.
- <sup>27</sup> Drewnowski A. Changes in mood after carbohydrate consumption. Am J Clin Nutr. 1987 Oct;46(4):703-5.
- <sup>28</sup> Avena NM. Examining the addictive-like properties of binge eating using an animal model of sugar dependence. Exp Clin Psychopharmacol. 2007 Oct;15(5):481-91.
- <sup>29</sup> Lenoir M, Serre F, Cantin L, Ahmed SH. Intense sweetness surpasses cocaine reward. PLoS One. 2007 Aug 1;2(8):e698.
- <sup>30</sup> Crystal SR, Teff KL. Tasting fat: cephalic phase hormonal responses and food intake in restrained and unrestrained eaters. Physiol Behav. 2006 Sep 30;89(2):213-20.
- <sup>31</sup> Erlanson-Albertsson C. Appetite regulation and energy balance. Acta Paediatr Suppl. 2005 Jun;94(448):40-1.
- <sup>32</sup> Erlanson-Albertsson C. How palatable food disrupts appetite regulation. Basic Clin Pharmacol Toxicol. 2005 Aug;97(2):61-73.

- <sup>33</sup> Slattery ML, West DW. Smoking, alcohol, coffee, tea, caffeine, and theobromine: risk of prostate cancer in Utah (United States). Cancer Causes Control. 1993 Nov;4(6):559-63.
- <sup>34</sup> Hodgson JM, Devine A, Burke V, Dick IM, Prince RL. Chocolate consumption and bone density in older women. Am J Clin Nutr. 2008 Jan;87(1):175-80.
- <sup>35</sup> Nguyen NU, Henriet MT, Dumoulin G, Widmer A, Regnard J. Increase in calciuria and oxaluria after a single chocolate bar load. Horm Metab Res. 1994 Aug;26(8):383-6.
- <sup>36</sup> Dunning JM, Hodge AT. Influence of cocoa and sugar in milk on dental caries incidence. J Dent Res. 1971 Jul-Aug;50(4):854-9.
- <sup>37</sup> Khawaja O, Gaziano JM, Djoussé L. Chocolate and coronary heart disease: a systematic review. Curr Atheroscler Rep. 2011 Dec;13(6):447-52.
- <sup>38</sup> Murphy DW, Castell DO. Chocolate and heartburn: evidence of increased esophageal acid exposure after chocolate ingestion. Am J Gastroenterol. 1988 Jun;83(6):633-6.
- <sup>39</sup> Castell DO. Physiology and pathophysiology of the lower esophageal sphincter. Ann Otol Rhinol Laryngol. 1975 Sep-Oct;84(5 Pt 1):569-75.
- <sup>40</sup> Wright LE, Castell DO. The adverse effect of chocolate on lower esophageal sphincter pressure. Am J Dig Dis. 1975 Aug;20(8):703-7.
- <sup>41</sup> Vorona RD, Ware JC. Exacerbation of REM sleep behavior disorder by chocolate ingestion: a case report. Sleep Med. 2002 Jul;3(4):365-7.
- <sup>42</sup> Müller-Lissner SA, Kaatz V, Brandt W, Keller J, Layer P. The perceived effect of various foods and beverages on stool consistency. Eur J Gastroenterol Hepatol. 2005 Jan;17(1):109-12.
- <sup>43</sup> Fukui PT, Gonçalves TR, Strabelli CG, Lucchino NM, Matos FC, Santos JP, Zukerman E, Zukerman-Guendler V, Mercante JP, Masruha MR, Vieira DS, Peres MF. Trigger factors in migraine patients. Arq Neuropsiquiatr. 2008 Sep;66(3A):494-9.
- <sup>44</sup> Millichap JG, Yee MM. The diet factor in pediatric and adolescent migraine. Pediatr Neurol. 2003 Jan;28(1):9-15.
- <sup>45</sup> Savi L, Rainero I, Valfrè W, Gentile S, Lo Giudice R, Pinessi L. Food and headache attacks. A comparison of patients with migraine and tension-type headache. Panminerva Med. 2002 Mar;44(1):27-31.
- <sup>46</sup> Russel MG, Engels LG, Muris JW, Limonard CB, Volovics A, Brummer RJ, Stockbrügger RW. Modern life' in the epidemiology of inflammatory bowel disease: a case-control study with special emphasis on nutritional factors. Eur J Gastroenterol Hepatol. 1998 Mar;10(3):243-9.
- <sup>47</sup> Joachim G. The relationship between habits of food consumption and reported reactions to food in people with inflammatory bowel disease-testing the limits. Nutr Health. 1999;13(2):69-83.
- $^{48}$  Martin RH. The role of nutrition and diet in rheumatoid arthritis. Proc Nutr Soc. 1998 May;57(2):231-4.
- <sup>49</sup> Garrett SL, Kennedy LG, Calin A. Patients' perceptions of disease modulation by diet in inflammatory (rheumatoid arthritis/ankylosing spondylitis) and degenerative arthropathies. Br J Rheumatol 1993;32(suppl. 2):43.
- <sup>50</sup> Friend WG. The cause and treatment of idiopathic pruritus ani. Dis Colon Rectum. 1977 Jan-Feb;20(1):40-2.
- <sup>51</sup> Halvorsen JA, Dalgard F, Thoresen M, Bjertness E, Lien L. Is the association between acne and mental distress influenced by diet? Results from a cross-sectional population study among 3775 late adolescents in Oslo, Norway. BMC Public Health. 2009 Sep 16;9:340.
- Resman BH, Blumenthal P, Jusko WJ. Breast milk distribution of theobromine from chocolate. J Pediatr. 1977 Sep;91(3):477-80.
- <sup>53</sup> Uenishi T, Sugiura H, Tanaka T, Uehara M. Aggravation of atopic dermatitis in breast-fed infants by tree nut-related foods and fermented foods in breast milk. J Dermatol. 2011 Feb;38(2):140-5. doi: 10.1111/j.1346-8138.2010.00968.x.
- $^{54}\ http://www.johnrobbins.info/blog/is-there-slavery-in-your-chocolate/$

http://www1.american.edu/ted/chocolate-slave.htm http://en.wikipedia.org/wiki/Children\_in\_cocoa\_production 55 Mike Davis, Late Victorian Holocausts: El Niño Famines and the Making of the Third World (London and New York: Verso, 2001)

\_