

The Truth behind the “Big Lies” about Chocolate

by Dr. Steven E. Warren, M.D., D.PA.
“Dr. Chocolate”

I'm so happy you downloaded this ebook from my Healthy Chocolate website!

Healthy Chocolate has made such a difference in my own life that I want to share the message with everyone who wants to learn more.

Dr. Steven Warren, also known to us as "Dr. Chocolate," is one of the world's leading experts on nutrition and fitness in improving quality of life. He has done extensive research on chocolate and its effect on the human body.

The goal of this ebook is to put to rest the tremendous number of misconceptions and outright falsehoods about chocolate.

In fact, chocolate was used as a health food thousands of years before companies like He***ey's, Ne**le, and M**s started producing "candy" chocolates stuffed full of sugars and harmful fats.

Today, research is showing how healthy, dark chocolate is really one of nature's super foods, helping relieve an amazing number of different health problems.

Please read through *The Truth behind the "Big Lies" about Chocolate* and learn the little-known "secrets" about healthy chocolate.

I know there are some "big words" in this book. Dr. Warren wanted to be as accurate as possible in using scientifically recognized terms related to the benefits of healthy chocolate. If you have any questions, be sure to send me an email or call me. I'll be happy to talk with you.

Your friend,

Chocolate: Separating Fact and Fiction

The following are commonly held beliefs regarding chocolate. See which are true, which are false and which are somewhere in-between.

Statement: Chocolate is largely an “empty-calorie” food that is unhealthy and has little to offer in the way of nutrition.

Answer: False. While chocolate does provide calories, they certainly are not empty. Chocolate also provides a variety of other essential vitamins, minerals and other substances (simply read the rest of this booklet to find out why chocolate is a healthful food.)

Statement: Chocolate causes acne.

Answer: False. This one is big. For decades, teenagers have been told to avoid the chocolate ice cream if they didn't want zits and blackheads. Most research, as well as various professional organizations, states that acne is principally a result of hormone imbalance—specifically testosterone. Diet is considered to make a very minor contribution—if any at all—to the formation of acne.

Statement: Chocolate is addictive.

Answer: Maybe. There is much debate over this topic. While it is true that chocolate does contain (or contribute to the production of) several compounds active in the brain and central nervous system, the opinions are very mixed among researchers as to the notion that chocolate can actually be addicting. While these compounds do produce other feelings and sensations, at least one study recently found that cocoa-filled capsules containing all the active ingredients did not satisfy the cravings in the same way that chocolate did. This would suggest that the pleasant sensory experience of eating (smelling, tasting, etc.) the chocolate is at least partly necessary to satisfy chocolate cravings or “addictions.”

Statement: Chocolate causes allergies.

Answer: Unlikely. First of all, very few people have true food allergies. Rather, they suffer from a food intolerance, which is less severe than an

allergy. Those with food allergies can suffer severe symptoms, such as swollen eyes and throat, extreme itchiness in the mouth, and so on. Those with an intolerance usually have trouble digesting a particular food, and experience more mild gastrointestinal symptoms. This is one reason that chocolate as an allergy trigger is highly unlikely. Second, and allergy or intolerance symptoms associated with the consumption of chocolate are more likely the result of an associated food or ingredient, such as nuts or milk, both of which have far higher allergy/intolerance rates. The research on chocolate suggests that intolerance to chocolate is comparatively rare, and no more prevalent than most other foods.

Healthy Chocolate User Testimonial

"I have suffered from severe allergies for 14 years. In fact, I tried immunotherapy (allergy shots once a week for five years) with limited results. I was taking multiple allergy pills a day and the side effects were debilitating (drowsiness and dryness). It was a daily balancing act that I hated.

I have had four corneal transplants and more than a dozen subsequent reparative eye surgeries over the last 10 years due to complications with a corneal disease. Having severe allergies and an eye disease definitely do not mix. My allergies attack the weakest parts of my body: my eyes. If you have had corneal transplants, rubbing your eyes is not a good idea because of the sutures that still remain. The pain and discomfort is torture. The steroids I put in my eyes several times daily do not necessarily help control the symptoms. The only real solution was complete avoidance of the elements.

Since I started drinking healthy dark chocolate with acai, I have not taken an allergy pill or had an allergy attack. I can breathe and function normally most days. My eyes are not suffering, and for some unexplained reason my vision is getting better. I do not have joint pain like I used to. The only thing I have done differently is consume these potent antioxidants.”

--Adam G.

Statement: Chocolate has no fiber.

Answer: Maybe. Processed chocolate has no fiber; the unprocessed cocoa is a good source of insoluble fiber and soluble fiber. Both types of fiber can add to an improved cardiovascular health and improved colon function.

Statement: Chocolate is a big contributor to cavities.

Answer: Not really. This one seems obvious, right? How can chocolate not cause cavities? Well, the answer is a bit more complex than most people would like to believe. The reason that chocolate has been linked to tooth cavities for so long is because sugar has been a prevalent ingredient in most chocolate products. And yes, sugar does contribute to cavities.

Truthfully, though, it is certain bacteria in the mouth that actually cause the cavities. They use simple carbohydrates (such as sugar) to create acid, and also contribute to plaque, both of which help break down the enamel of the tooth to eventually create a cavity. The bacteria can use just about any simple carbohydrate to do this. Sugar is one of these, but there are many sources of simple carbs that have the same effect. In fact, what scientists are finding is that simple carbs that take longer to clear the mouth because they stick in between teeth—such as cookies, bread, rice and so on—are more likely to contribute to cavities than—surprise!—chocolate or even soda.

To top it off, research has shown that chocolate isn't a contributor to cavities any more than most foods. And at least one study shows that it can inhibit the bacteria that are responsible for tooth decay. This doesn't mean that you should go eat all the chocolate you want and never brush your teeth. Just know that chocolate (especially a high-quality dark product) can actually help protect your teeth. And remember to always brush and floss—the two best proven ways to avoid tooth decay.

Healthy Chocolate User Testimonial

"I have exciting news to share with you. I am still shocked and so happy! I just got home from my Periodontist (dental surgeon) today. I will tell you the story:

"A little over a month ago after I went to the dentist for check up and cleaning. The dentist saw that I had bone loss in one of my teeth and recommended me to see a Periodontist to check it out. I thought to myself, 'Oh no, something serious is happening to my oral hygiene.'

"I went to see a periodontist in Rancho Mirage, he said I had to have one tooth pulled out, implanted and other five teeth bone grafted for over \$7,000.00. I said, 'Wow! Is my oral hygiene that serious? I feel no pain, just little discomfort on one tooth.' I wanted to get 2nd opinion to make sure that was true and went to another periodontist, he said I did not need to have the tooth pulled, no implant, no bone grafts, only incision and scrape out plaque from down deep into my gum pockets for \$760.00. I thought that was so much better! He gave me an appointment to have it done two weeks later and said to brush my teeth more often and take care of them. So I brushed my teeth twice a day, ate more healthy dark chocolate daily (sucked on them to let it soak into my gums).

"I was nervous about the surgery the whole time. When I went today, he explained to me the procedure of the surgery and was going to give me a shot to numb my gums. When he checked on my gums and was surprised, gave me a big smile and said, 'This is a miracle, you did a good job taking better care of your teeth, you have no plaque, it is all gone. I do not need to give you surgery!' I was so surprised and so happy, no surgery! I told

him about healthy dark chocolate and he was interested. Wow! Healthy dark chocolate has been shown to be excellent for oral hygiene.

"I told my best friend about this, she then told me her story and the same thing had happened to her, her dentist told her she would have to go back to periodontist because her gums were inflamed again. Instead of going to see periodontist, she wanted to try healthy dark chocolate for 3 months and when she went for her next cleaning and check up, the dentist asked her, 'What did you do? Did you change toothpaste or toothbrush or what? Your gums are healthy!'" My friend was so happy and told him how healthy dark chocolate took care of her. He, too, was very interested.

"There have been many dental stories about healthy dark chocolate improving patients' oral hygiene. I am so thankful and so happy. We also saved \$\$\$\$\$. Isn't that wonderful? I DO NOT NEED DENTAL SURGERY!"

-Valerie A.

Statement: Chocolate causes migraine headaches.

Answer: False. A study by Moffett looked at twenty-five patients who felt that chocolate caused their headaches. He concluded after a double-blind study that "chocolate on its own is rarely a precipitant of migraines."

Statement: Chocolate makes you fat.

Answer: False. Unless you eat half a chocolate cake every day, chocolate won't make you gain weight. But it's not really the chocolate that makes you fat. It's the other ingredients—sugar, flour, fats, etc.—that add up to gross amounts of calories and are most responsible for any weight gain associated with "chocolate."

In fact, if you eat healthy dark chocolate, not only will you not gain weight, it may actually help you lose weight, will improve your cardiovascular health, and possibly enhance your mood and brain function. So don't be afraid of chocolate—just be afraid of eating enormous amounts of calories that often accompany unhealthy

chocolate products.

Chocolate Questions and Answers

As scientific data continues to mount regarding the health benefits, I have received hundreds of questions over the years from patients and readers just like you. The following represent some of the most asked questions, as well as answers that hopefully will help you understand what role cocoa and chocolate foods can play in achieving optimal health.

Q. Where does chocolate come from?

A: The answer to this question is crucial to understanding why chocolate has health benefits. Because of the association of chocolate with desserts and sweets, it is often difficult for people to believe that chocolate can actually be good for you. In fact, chocolate has plant origins, and like other plants, has nutritional value.

The cocoa bean is actually an almond-shaped seed from the large fruit pods—about a foot long—of the flowering cacao tree. These seeds, which are the basic ingredient to any chocolate product, are nutritional powerhouses. The average tree can hold between 20 and 35 pods at any given time, and the pods take an average of 4 to 6 months to mature.

The cocoa bean is then generally broken into nibs and ground into a paste. The paste is then pressed, and its liquid cocoa butter is drained off and cake-like cocoa powder remains. About 10 pods (totaling between 300 and 6700 seeds) produce two pounds of cocoa paste.

Most of the world's chocolate now comes from the Ivory Coast, with Ghana and Indonesia following close behind. Brazil, Nigeria and Cameroon are also cocoa producers, though on a much smaller scale.

Q. Has chocolate been used historically either as a medicine or healthful food staple?

A. Although you may think of chocolate as having a relatively short history, its origins date back thousands of years ago to ancient Mesoamerica, constituting what today is known as southern Mexico, Belize, Guatemala, Honduras, and part of El Salvador.

Among the earliest people to discover the health benefits of chocolate were the Maya and their predecessors, the Olmec culture, in approximately 1500 B.C. these ancient peoples in the Americas used the chocolate being as the main ingredient in a bitter beverage revered for its nourishing qualities and ability to boost energy and stamina. It was also used to treat stomach and intestinal complaints, infections, fever and coughs. The drink was a mixture of fermented and roasted cocoa paste, water, chili peppers, cornmeal, and other ingredients blended into a spicy, frothy, and sugar-free health drink.

In fact, for the ancient Mesoamericans, chocolate was more than just a favored health food. It's also played an important role in their religion, society and the economy.

Because of its value and popularity, the cacao bean became a significant trade item for the Mayans. In fact, the Aztecs -- who could not grow the cacao tree because of their dry climate -- became so enamored with the bean that they often required that conquered peoples paid their tribute in cacao beans. The Aztec word for the delightful drink-xocolatl, which means "bitter water" -- is what was eventually transformed into the modern English word, chocolate.

Q. How did the chocolate gain worldwide popularity?

A. Until the 1500s, no one outside of the New World knew anything at all about chocolate, although historical records indicate that other European explorers, including Columbus, at least in contact with cacao in the Americas. It wasn't until Hernan Cortés conquered Mexico in 1521 that the Spanish began to learn about the delicious flavor of chocolate. Cortes and his men had their first taste of the beverage from the

confiscated treasure stores of the Aztecs.

Eventually, chocolate beverages gained popularity among European aristocrats and remained a status symbol for the wealthy until the chocolate candies were first mass produced for the public in the 19th century.

Q. Why are we now suddenly interested in cocoa when it has been around for such a long time?

A. Over the centuries, chocolate has come full circle. Most of the modern world currently views chocolate as a tasty but quite unhealthy indulgence meant for only occasional consumption. But health-conscious consumers are now learning that dark chocolate, devoid of some of the unhelpful ingredients usually paired with it in confectionery products, possesses some impressive health properties

In fact, chocolate has grabbed the interest of the scientific and health communities -- so much so that in February 2000, it held center stage at the annual meeting and the Annual Meeting and Science Innovation Exposition at the American Association for the Advancement of Science, and later in the 2004, 2006, and 2007 at the National Academies in Washington, DC. These meetings have featured international scientists from the public and private sectors, bringing together committees of experts in all areas of science and technology

These symposiums and the promising studies completed on cocoa in the last several years have raised the awareness of the public regarding the potential of chocolate to improve health. While some still view chocolate as a "sinful" indulgence, emerging studies seem to be changing the public view. In time, it will be common knowledge that cocoa products represent a healthful food choice for disease prevention and overall wellness.

Q. What the conditions may potentially respond to the nutrients in chocolate?

A. Numerous studies support a variety of potential health benefits from cocoa beans and dark chocolate in particular, including protection of the

cardiovascular system, cellular function, cancer prevention, relief of inflammatory conditions, and improved symptoms of diabetes.

Q. What are the key nutrients in cocoa?

A. Cocoa's health promoting potential can be traced back to its optimized nutritional profile. It may surprise you to learn that chocolate is rich in a variety of nutrients that give it its energy-boosting, disease-preventing properties, even rivaling the nutritional power of many commonplace fruits and vegetables. Its key ingredients include various vitamins and minerals, and perhaps its most important ingredients are its polyphenols -- including catechins, flavanols and flavonoids. These compounds are proving to be potent antioxidant, anti-inflammatory and cell-protecting health agents.

Healthy Chocolate User Testimonial

I used to have low energy because of my heart condition (my heart doesn't beat at a steady rhythm). When I would go to the gym to swim, I would only be able to swim about half a lap before I was exhausted.

I have been using a healthy chocolate drink with acai for three months now. I recently went back to the gym to try swimming and was shocked to see how much energy I had. I was able to swim over 12 laps! The only reason that I had to stop was because the muscles in my legs were shaking because they weren't used to having that much exertion. This product has changed my outlook!

-Bill E.

Q. Is there any scientific research to back these claims?

A. Of course, chocolate's health potential is backed by centuries of use around the world, but more than that, its benefits to have also been the subject of several years of research. Scientific interest in cocoa has grown in recent years and continues to grow, and hundreds of published studies found in reputable medical journals support its health benefits.

Q. scientists have identified antioxidant activity in chocolate. What does this mean and how do we determine the antioxidant potency of cocoa and other antioxidant foods?

A. Among cocoa's most impressive phytonutrients are several types of polyphenols, largely recognized as the most powerful antioxidant and anti-inflammatory compounds known. Polyphenols can be found in a variety of fruits and vegetables ranging from onions to apples, green tea, red wine and cocoa. They comprise multiple categories, including phenolic acids, simple phenols, phenylpropanoids, quinines, stilbenes, xanthenes, and the largest group—flavonoids (also called bioflavonoids), which make up a majority of the polyphenol family and are further broken down in classes and subclasses such as catechins, epicatechins, proanthocyanidins and procyanidins.

Hundreds of studies have found that flavonoids possess anti-inflammatory, antioxidant, antibacterial, anticancer, and antiviral properties, as well as the ability to act like hormones (without the damaging side effects), protect and repair of the liver, relax and dilate the blood vessels, modify blood platelet clotting, maintain mental function, lower the risk of different forms of dementia, fight cancer, prevent tooth cavities and other forms of oral disease, and relieve allergy symptoms, among other benefits. They also possess hypoglycemic properties that help the body utilize sugars efficiently, thereby normalizing blood sugar levels for diabetes protection and can halt free radical damage of the eyes and extremities, where diabetes tends to take its toll.

Healthy Chocolate User Testimonial

"I started taking an ounce of a chocolate antioxidant beverage three times a day. In addition to feeling the usual benefits of vigor and well-being, after the first five days, I began to notice that my eyesight in my blind right eye was improving. After the first eight days of using the chocolate drink, I became gratefully aware that the retina and macula in my blind eye was actually being restored to better vision. Slight improvements were noted daily, until I gradually came to realize that Venetian blinds on the right edge of my window actually extended all the way across the

window.”

-Merrel H.

Q. I have heard that chocolate can protect the cardiovascular system. How is this possible?

A. The heart protective effects of cocoa are probably the most documented. Dozens of studies confirm its ability to protect by counteracting free radical oxidation and blood vessel inflammation, improving blood platelet function, decreasing blood clotting, increasing HDL ("good") cholesterol, reducing LDL ("bad") cholesterol levels, increasing prostacyclin activity (which helps blood vessels to relax), and reducing blood pressure.

A 2007 study published in the *Archives of Internal Medicine* analyzed the effect of tea and cocoa on blood pressure. Researchers found that the consumption of foods rich in cocoa may reduce blood pressure, while tea appeared to have no effect. In fact, the benefits of cocoa on blood pressure were similar to those of standard pharmaceutical prescriptions, including beta blockers.

The lowered risk for cardiovascular disease could not be explained simply by lowered blood pressure, and researchers attributed the reduced risk to a myriad of cocoa's benefits, including improvements in the function of blood vessels, lower blood glucose levels, lower platelet function, improved cholesterol levels, decreased oxidation of blood lipids, and reduced activity of the inflammatory components such as cytokines.

These findings are supported by findings from numerous other studies. In fact, a team of scientists from the Harvard School of Public Health reviewed close to 140 studies completed on the relationship of chocolate and cocoa to cardiovascular health. The research team concluded that chocolate is a major source of flavonoids (epicatechins, catechins, and procyanidins), and found that the principal fat in chocolate -- stearic acid -- did not have adverse effects on blood vessels, cholesterol levels or overall cardiovascular health because it is

metabolized differently than other saturated fats. The authors concluded that regular consumption of chocolate should decrease the risk of cardiovascular-related conditions, and recommended long-term studies to confirm this.

Healthy Chocolate User Testimonial

"My family has a history of high blood pressure. I am 37 years old, and my blood pressure was averaging between 150 and 159 before I started to drink a healthy chocolate antioxidant beverage. Since I started using the drink, my blood pressure has dropped 40 points. Needless to say, my entire family is using this healthy chocolate with acai."

-Jedd N.

Q. Can cocoa help in the treatment of diabetes?

A. Chocolate's heart-protective benefits may also be helpful to individuals with diabetes. It is well known that the majority of diabetes related deaths result from cardiovascular conditions such as atherosclerosis, infarction, stroke and peripheral vascular disease.

Elevated blood sugar levels cause micro-blood vessel damage, which ultimately causes scarring and blood vessel blockage. This damage causes neuropathy (pain in the nerves) and edema (water in the tissues) in extremities, which can lead to ulcerations and amputations. It also causes kidney damage (nephropathy) and even blindness (retinopathy).

Researchers from Italy have recently reported that oxidative stress is the underlying cause of insulin resistance, glucose intolerance and diabetes. If this is the case, antioxidant rich foods like cocoa may help treat and prevent the disease.

A 2005 study from the University of L'Aquila in Italy and Tufts University suggests that flavonols present in chocolate can protect the cardiovascular system and can improve the utilization of insulin in diabetic patients. The findings indicate that flavonols can lower blood pressure and lower overall blood fat levels. The researchers also

discovered that even the short-term administration of dark chocolate can result in significant improvement in insulin sensitivity (insulin resistance is a key problem in type-2 diabetes). Flavonoids help type-2 diabetes mitigate insulin resistance, thus lowering and regulating blood sugar.

A recent article in the *Journal of Nutrition* discusses the protection that cocoa polyphenols can provide against after-meal oxidative stress. The authors explain that nutritional oxidative stress occurs because there is an imbalance between the body's pro-oxidant load and its antioxidant defense. This is a consequence of excessive intake of free radicals or of inadequate supply of antioxidants. This imbalance contributes, of course, to a higher risk of cardiovascular problems -- and diabetes. This distress can be reduced by the ingestion of dietary polyphenols or antioxidants found in chocolate.

Healthy Chocolate User Testimonial

"I was diagnosed with diabetes in the summer of 2004. What a shock. I was immediately given a prescription for a drug to control my sugar level. I, of course, changed my diet and started exercising. After being on a chocolate and acai product for 30 days, I am no longer on my prescription drug. My sugar level is staying in the normal range. And as a "chocoholic," I can now eat chocolate again, guilt-free!"

-Butch S.

Q. My doctor told me that inflammation is a key contributor to my joint pain. Can cocoa treat inflammation?

A. Although cocoa's effect on inflammation has not been the subject of many studies, most scientists in the field of chocolate research agree that one of cocoa's primary benefits is its ability to prevent or even reverse inflammatory response in the body.

In a 2005 study published in the *American Journal of Clinical Nutrition*, researchers discovered that epicatechin and other flavonols found in cocoa proved to be effective at inhibiting the action of leukotrienes, inflammatory messengers that can be a key contributor to

inflammation-related conditions when produced in excess. Flavanols also reduce inflammation by inhibiting cyclooxygenase (COX-2), inflammatory cytokines and interleukin-1 beta.

A recent review of cocoa research found that cocoa is indeed a potent anti-inflammatory agent.

Healthy Chocolate User Testimonial

"I am 57 years old and thought that all of the problems I suffered were just part of getting old, or the "Golden Years." Not much gets me down, but feeling chronic pain has been very challenging. A couple years back I was diagnosed with fibromyalgia; I received various treatments for many years. My muscles didn't work like they were supposed to, and I had blinding headaches four times a week. Pain medication did help, but that brought on its own set of problems. Chronic pain takes its toll, and at times it was unbearable. I found out how easy it would be to become addicted to pain medication, and at times I probably would have done anything to make the pain go away for just ten minutes. Thankfully, I was never tempted by more than what I could stand. I also have arthritic joints. They aren't terrible but painful enough that I climb the stairs slowly and have to make sure that I have a tight grip before I pick something up.

"Ever since I started to take a wonderful chocolate drink with acai, I noticed a real change. Then the real surprise came. After three weeks I didn't have any more headaches. I would wake up each morning and expect the usual wave of pain that I would experience when I moved my head each morning. When it did not happen, I almost cried tears of gratitude. Yes, I still do have the occasional headache. But with all that I have been through, I can deal with that. And believe it or not, I now run up and down the stairs without pain. All this is possible with just three ounces of this ultimate antioxidant beverage each day."

-Karen S.

Q. Can chocolate provide benefits to those suffering from autoimmune diseases such as lupus, ulcerative colitis and fibromyalgia?

A. Cocoa does show potential as an immune modulator, which may be helpful in the treatment of lupus, colitis, arthritis, eczema and other autoimmune diseases. People diagnosed with chronic fatigue syndrome are quite often told to avoid chocolate because of the sugar, caffeine, and fats in it. However, recent research on chronic fatigue suggests that the chemicals in cocoa like theobromine, tyramine, tryptophan-serotonin, endorphins, and anandamide decrease anxiety and boost energy levels while reducing inflammation and pain. These same properties benefit those suffering with other autoimmune disorders. A 2006 study found that cocoa's flavanol content may make it a viable treatment for, and possibly prevent, a broad array of chronic diseases resulting from dysfunctional inflammatory responses, like fibromyalgia, colitis, and lupus.

Q. Is it true that chocolate can increase energy and act as an aphrodisiac?

A. Chocolate contains phenylethylamine (PEA), which is also known as the "love chemical" known for increasing a sense of well-being and contentment. In fact, it is reported that Casanova often ate chocolate because of its aphrodisiac properties. It is believed to work by making the brain release endorphins, the main source of chocolate's pleasure and mood enhancers.

Chocolate also contains anandamide, which promotes the feelings of well-being and may be responsible for the "runner's high" common to many endurance athletes. Cocoa also has the two metabolites of anandamide, both of which help maintain the effect longer in the body. The cocoa bean also was one of the best natural sources of the amino acid arginine, a natural sexual stimulant.

Cocoa's theobromine content mildly stimulates the central nervous systems and provides additional energy, as well as possibly boosting female libido. Theobromine is also a cousin of caffeine, but does not have the side effects associated with caffeine.

Q. I have heard women say that they crave chocolate when they are depressed. Why is this?

A. Chocolate contains a compound called tryptophan, which is a precursor of the natural antidepressant hormone serotonin. In fact, research shows that chocolate consumption increases levels of dopamine and serotonin in the body.

Cocoa also contains natural dopamine, which elevates moods and has been associated with increased mental acuity, increased concentration and a positive attitude. These two vital chemicals help lower risk of depression and increase overall mental function. In fact, it has been suggested that cocoa contains MAO inhibitor chemicals, which fight depression and may explain the added benefits to those with ADD/ADHD.

It's also interesting to note that eating chocolate tends to trigger the release of endorphins, the body's own opiates. Increased endorphin levels mean reduced pain sensitivity, a "warm" feeling of contentment, and overall mood elevation. Those trying to kick a smoking habit may also benefit from cocoa's mood-elevating and depression-fighting abilities to mitigate the irritability and other mood changes associated with nicotine withdrawal.

Q. I have heard that cocoa can improve mental function. Is this true?

A. Cocoa's natural dopamine content not only elevates moods, but also is attributed with boosting concentration levels and mental acuity. Its MAO inhibitor action may explain its benefits for those with ADHD and may possibly help in preventing neurodegenerative diseases.

A recent study from Wheeling Jesuit University involved different groups of volunteers who consumed different forms of chocolate -- milk, dark, carob -- as well as a control group who consumed no chocolate. The researchers conducted different neuropsychological tests to determine cognitive performance -- memory, attention span, reaction time, and problem solving. The chocolate groups scored much higher

on verbal and visual memory, impulse control and reaction time. While the study was very limited, it suggests that the chemicals in chocolate may improve overall mental function.

A recent human study provided exciting results regarding the possible brain-friendly effects of cocoa. Researchers from the University of Nottingham, Britain, found that consumption of a cocoa drink rich in flavanols boosts blood flow to key areas of the brain for two to three hours. This effect is believed to be the result of increased dilation in the brain's blood vessels, which permits more blood, oxygen and other nutrients to reach key areas of the brain.

Q. Can chocolate really help me lose weight?

A. Japanese researchers have discovered that regular cocoa consumption may prevent obesity and weight gain by regulating the genes involved in fat metabolism. The researchers fed two groups of rats different high-fat diets -- one high in real cocoa and the other without the cocoa supplement. After 21 days, the researchers measured the white adipose fat weight and blood fat levels of each rat, as well as the gene expression profiles. Body weight, adipose fat weight and blood lipid levels were also lower in the cocoa group. It appears that chocolate helps to restrict fat metabolism and storage, while stimulating thermogenesis, or fat burning, in the body. Scientists concluded that cocoa flavanols can prevent weight gain and obesity related to a high-fat diet.

Healthy Chocolate User Testimonial

"Since taking healthy dark chocolate for the last several months, I have lost a total of 19 1/2 inches from my bust, waist, thighs, arms and stomach. I sleep like a baby and the pain in both my wrists has significantly decreased. Thanks to healthy dark chocolate, I no longer have to take pills for temporary relief. I have found healthy dark chocolate to improve my overall well-being and to be the best antioxidant food to help me fight free-radicals."

-Ms. Jeremy W.

Q. I've suffered from bad as skin for years -- is it true that chocolate causes acne?

A. It is widely recognized by most dermatologists that acne is not highly linked to the consumption of any food, including chocolate. In fact, the antioxidants in chocolate may actually prevent UV skin damage and slow the aging process, according to a recent study published in the *Journal of Nutrition*.

Q. There are reports that cocoa can help improve dental health. How is this?

A. For a long time, chocolate has been listed as a contributor to cavities and tooth decay, most likely because of its association with sugary confections. The truth is, however, that chocolate does not contribute to cavities and, in fact, fights the bacteria and low oral pH levels that lead to tooth decay.

The number one reason why chocolate does not cause cavities is its inherent lack of fermentable carbohydrates. Sugars in chocolate foods are added, and these added sugars may lead to cavities, but multiple studies have found that even after chocolate is sweetened, it still does not increase cavity risk. Researchers for the classic 1950s Vipeholm study in Sweden reported no statistically significant difference in the incidence of cavities among a control group that consumed no sweets and another group that consumed chocolate. Another study tested the cavity-causing effect of several common snack foods on rats, and found solid milk chocolate among the lowest in all of the foods evaluated.

Q. Does chocolate provide any benefits for those with neurodegenerative diseases such as Parkinson's, multiple sclerosis (MS), or dementia?

A. Antioxidant properties in cocoa may also benefit those with neurodegenerative diseases like dementia or MS. Cocoa contains several potent oxidant-fighting ingredients, and possesses the same ability to decrease free-radical damage that may contribute to dementia and decline in mental function. Other studies on the key

compounds found in cocoa -- such as catechins -- support these findings.

A study recently looked at older Japanese-American men and women who drink fruit or vegetable juices three times a week, and showed a 75% reduction in risk of developing Alzheimer's dementia. No benefit was seen with supplemental or dietary vitamins like E, C, or beta-carotene. Researchers at the University of South Florida published a study that found that a high-flavonoid diet in some cases reversed normal age-related declines in memory and learning in rats. A related to stroke study found a decrease in stroke size in rats fed a high flavonoid diet. It is felt that the antioxidants and anti-inflammatory substances in the diet reduced nerve cell injury and death triggered by the stroke.

Q. Are there findings suggesting that cocoa may help fight cancer?

A. Yes. In recent years, scientific research has uncovered the potential of chocolate's main constituents to fight cancer. Findings from a 2005 study in *Molecular Cancer Therapeutics* shows that one of chocolate's procyanidins deactivates a number of proteins that prompt cancer cells to continually divide. The Georgetown University research team performed a variety of tests on breast cancer cells and four proteins that contribute to their division and growth. They discovered that after treating the cells with the procyanidin compound, all four proteins were essentially "turned off," and the cancer cells stopped dividing. The Procyanidin deactivated four separate regulatory proteins, greatly enhancing its inhibitory effect. Many anticancer agents only display a single inhibitory effect.

Another study found that procyanidins were potent inhibitors of a molecule responsible for increasing blood vessels in a tumor, thereby making the cancer grow faster. Cocoa procyanidins stop new blood vessels from forming, which in turn inhibits cancer cell growth. Numerous cancers like colon, breast, lung, ovarian, and prostate cancers are controlled in part by this molecule. Moreover, researchers from Weill Cornell Medical College, Strang Cancer Prevention Center, and Brigham and Women's Hospital discovered that certain catechins in cocoa were able to restrict the growth of intestinal tumors (up to 75%) in mice.

Q. Will chocolate interfere with chemotherapy?

A. There is no documented evidence that chocolate will interfere with chemo treatments. In fact, it could help. A recent review of 19 trials published in *Cancer Treatment Reviews* found that survival data of cancer patients using antioxidant therapy as an adjunct to chemotherapy were similar or better than for those not using antioxidants. In addition, none of the trials supported the theory that antioxidant supplements diminish the effectiveness of chemotherapy.

Q. How is it possible that cocoa can help with so many conditions?

A. Although the exact reason why some healthy foods like cocoa provides such wide-ranging health benefits is still unknown, we do know that chocolate does have a multifaceted effect on the body.

The answer lies in its unique nutritional makeup and its antioxidant potential. Because cocoa is antioxidant-rich, it is no surprise that it helps with all the conditions associated with free-radical damage, which we are susceptible to all the time every day. Antioxidants work on a cellular level to deactivate free radicals in the body, neutralizing their effects and preventing cell damage, thereby reducing your risk for disease and slowing the aging process. In fact, experts believe that free radicals are involved in dozens of health conditions and diseases, including potentially deadly ones such as heart disease, stroke, diabetes, cataracts, arthritis, dementia, multiple sclerosis, autoimmune dysfunction and cancer. Consequently, the antioxidant potential of chocolate is such that it may offer one of the highest potencies among the antioxidant-rich foods discovered to date.

Q. I've heard that chocolate causes migraines, insomnia, acne, and acid reflux. What is fact and what is fiction?

A. through the years, chocolate has been blamed for a wide range of complaints, including skin problems, sleeplessness, headaches, allergies and digestive upset.

Studies have shown no link between acne and chocolate consumption. Allergies are also rare, and it is believed that many allergies and headaches attributed to chocolate are actually the result of other ingredients used in chocolate confections, such as dairy, nuts or sugar. A study looked at 25 patients who felt that chocolate caused their headaches. The lead researcher concluded after a double-blind study that, "chocolate on its own is rarely a precipitant of migraines." Often a fat, refined sugar or added caffeine causes the headaches. This is also

true for fibrocystic breast disease, which is not affected by unprocessed dark cocoa.

The sleeplessness misconception is probably due to the mistaken belief that chocolate contains a lot of caffeine, when in actuality a cup of decaf coffee has more caffeine than a serving of dark chocolate. In fact, chocolate consumption may actually boost production of the sleep enhancing neurotransmitters melatonin and dimethyltryptamine.

Digestive upset and acid reflux are also attributed to cocoa consumption but without sufficient evidence to support a link. In fact, most studies show that any digestive upset linked to chocolate is likely due to the high fat and sugar content, not the cocoa itself. Other research suggests that cocoa may be able to decrease acid production.

Q. Is chocolate safe?

A. A multitude of sins has been assigned to chocolate, from skin blemishes to migraine headaches to weight gain. Chocolate is considered fattening, overly caffeinated, and lacking in nutritional value. However, helpful, high-quality chocolate products are actually quite safe -- and healthy! Food allergies to chocolate are less common than believed, and the caffeine content is actually quite low in most chocolate products. Many cosmetic and health issues attributed to chocolate are not backed by recent scientific research. The culprit is more often dairy, sugar or other additives.

Q. Is the fat content of chocolate harmful?

A. Actually, high-quality dark chocolate does not contain high amounts of fat, and most of it is in the form of cocoa butter, the natural fat of the cacao bean.

Cocoa butter is one of the most stable vegetable fats, containing natural antioxidants that prevent rancidity. And it is considered generally healthy for humans. Though cocoa butter contains saturated fats,

scientists mostly agree that its main fat components -- stearic acid, palmitic acid (saturated fats), oleic acid (monounsaturated fat) and linoleic acid (polyunsaturated fat)—all contribute to a healthy lipid profile. At worst, cocoa butter's profile is neutral, meaning it does not increase blood cholesterol levels.

Q. Are there any drug interactions or other contraindications for cocoa? Can I take my regular prescriptions?

A. There are no known contraindications or drug interactions relating to cocoa. You should be able to continue your regular prescriptions, but always consult a physician before beginning any health or nutritional program. Also, tell your doctor about any supplement programs before undergoing surgery.

Q. Does chocolate contain caffeine?

A. The caffeine content of chocolate has been the subject of much debate -- and conflicting research from the scientific community. Some data suggests that there is caffeine content in the cocoa bean, though the International Cocoa Organization states that the caffeine content is very low. Other data suggests there is no caffeine in cocoa, and that any caffeine present has been added by manufacturers.

It's also interesting to note that some data suggests that there is caffeine in the fiber and husk that surround the cocoa bean. If the beans are properly cleaned, then there should be virtually no caffeine in the chocolate products. However, lower-grade chocolate often may contain cocoa fiber because it costs more to completely remove, thereby increasing the probability that small amounts of caffeine will occur in the final product.

Q. What is "dutching," and is it a good thing?

A. Cocoa powder producers use a hydraulic press to remove 50 to 75% of the cocoa butter from cacao paste, leaving behind solids that can be

ground into cocoa. Cocoa powder usually comes in two varieties: natural or non-alkalized, and Dutch-processed or alkalized. Natural cocoa retains its natural acidity. Dutching processes the cocoa with an alkali to neutralize the acidity. Although the dutching process gives cocoa a smoother, less bitter taste and a richer color, it also can neutralize the antioxidants and other nutrients in the cocoa. When choosing chocolate products for health benefit, avoid cocoa that has undergone Dutch processing.

Q. Can I become addicted to chocolate?

A. The word "chocoholic" may have worked its way into the modern lexicon, but the actual risk of chocolate addiction is small -- despite the cravings you may feel when you are stressed or depressed.

The debate on chocolate's addictive qualities will likely continue for years to come. The truth is that although chocolate does contain (or contribute to the production of) several compounds active in the brain and central nervous system, opinions are mixed among researchers about whether chocolate can actually be addicting.

These compounds do produce other feelings and sensations, but at least one study recently found that cocoa-filled capsules containing all the active ingredients did not satisfy the cravings in the same way that chocolate did. This would suggest that the pleasant sensory experience of eating (smelling, tasting, etc.) the chocolate is at least partly necessary to satisfy chocolate cravings or "addictions."

Q. Can I eat too much chocolate?

A. Chocolate is widely believed to be an "empty calorie" food with little nutrition. The calories in chocolate are definitely not empty, however. Cocoa provides a variety of vitamins, minerals, and other essential nutritional supplements.

Although chocolate has many health benefits and a strong antioxidant

profile, this is not an excuse to eat as much chocolate as you want. Moderation is key. And picking the right chocolate product is very important. Read labels before you indulge!

Chocolate can add a few inches to your waistline if you overdo it. But dark and bittersweet chocolate can be a healthier option than most cookies, crackers, chips and other common snack foods. In fact, chocolate may prevent obesity resulting from a high-fat diet.

Q. How soon after beginning a nutritional program with chocolate will I start to see results?

A. Although you should not expect to see big changes immediately, the regular addition of a healthful chocolate supplement, food product, or beverage into your balanced nutrition plan should offer a measurable improvement in overall health and wellness within weeks of starting the program. Some people may see a more immediate effect, but for others, significant improvements may take a few weeks to reveal themselves, especially in those whose health is already compromised. That said, researchers reported in a 2005 issue of *Heart* that measurable heart benefits from dark chocolate can be seen on platelet function within a few hours after consumption.

With daily consumption, give the program four to six weeks and up to six months for maximum effect, and remember that more is not always better.

Q. Will milk or heat ruin the benefits of chocolate?

A. Although it has been commonly thought that milk interferes with the health potential of chocolate, recent research calls this belief into question. A 2003 study published in *Nature* challenges the idea that the bioavailability of polyphenols in chocolate is restricted by milk proteins. Earlier research suggested that milk proteins bind to flavanols, thereby rendering them inactive. However, this study tested the effect of milk on the absorption of chocolate flavanols and found that the levels of the

flavanol epicatechins in the blood rose after consumption of chocolate. This suggests that the addition of milk made no difference in the antioxidant capacity of flavonoids in the body.

A Spanish study presented at the annual 2005 International Conference on Polyphenols and Health also tested the effect of milk on the availability of polyphenols. The study found that epicatechin levels in the blood were not significantly different between those fed a milk-and-cocoa beverage and others fed a water-and-cocoa beverage. Both groups scored significantly higher than a group fed only whole milk. Researchers concluded that milk does not impair flavonoid bioavailability from cocoa powder.

As far as heat is concerned, aim for processed cocoa that is not roasted and was not processed at temperatures in excess of 110°F

Q. What characteristics should I look for in helpful, high-quality chocolate?

A. Because of these differences, consider the following when choosing a healthful chocolate product:

- Choose dried, not roasted, cocoa beans that have been washed and thoroughly cleaned.
- Avoid chocolates that have undergone any alkalization or "dutching" processes, which can neutralize the effects of nutrients in the beans, as well as interfere with its antioxidant potential.
- The chocolate should be tested for bacteria and other infectious agents, as well as for lead.
- Processing temperature for cacao beans should not exceed 110°F
- Look at the ingredients -- a healthful chocolate product should have cocoa butter and cocoa solids as primary ingredients, not milk fats or hydrogenated oils. Avoid chocolate products high in refined sugar, corn syrup and/or preservatives.
- Bitter is best. Although milk chocolate isn't "bad," studies have confirmed that chocolate products with the highest antioxidant

- activity contained at least 70% pure cocoa powder.
- How chocolate is sweetened is another important point. Avoid products high in refined sugars. Instead, good sweetening agents include low-glycemic sugars such as unprocessed crystallized cane sugar, fructose, and agave syrup. Also, sugar alcohols such erythritol are a good alternative. Low-glycemic sugars and sugar alcohols do not increase blood sugar levels because they are released more slowly into the blood. Though there may be contradictory information on the Internet regarding some of these sweetening agents, academic research shows they are effective and more healthy than traditional refined sugars.
 - Avoid products that use waxes and preservatives.
 - Consider a healthful chocolate beverage, as they are an effective supplement delivery option designed for maximum nutritional effect. Not only are such products more easily absorbed and utilized by the body; they are also easier for the elderly and children to incorporate into a balanced, nutritionally sound diet plan.
 - Consider cocoa products combined with other nutrients and/or antioxidant compounds. Good options include those with berry ingredients like blueberry or acai berry.

More Questions about Healthy Chocolate

"I frequently receive questions at my website specifically about Xocai,, the Healthy Chocolate{link text to distributor's website}. Here are the questions and my answers."

-Dr. Steven E. Warren

Q: Dear Dr. Warren,

My husband suffers from Peripheral Neuropathy, mostly in his legs, which causes him severe pain and weakness. His neurologist has nothing to offer him other than an antidepressant used for diabetics with the same type of neuropathy. Have you heard of the dark chocolate helping this condition? Thanks.

A: Dark cocoa may help this situation by stabilizing the nerve roots and repairing the nerves, resulting in improved neuropathy and a decrease in pain. It might take a while, but it may help.

Q: Can healthy chocolate lower triglycerides levels?

A: Yes it can. Cocoa is great for triglycerides and will lower them in addition to cholesterol.

Q: How does insulin use improve by eating healthy chocolate?

A: The cocoa epicatechins and procyanidins make the insulin work better. It increases insulin sensitivity and forces the blood sugars faster in the cells. It makes the sugars burn faster and helps stabilize the overall blood sugars.

Q: What is done during the manufacturing process to insure that the cocoa isn't contaminated by the lead that may be in the shell? I read that for children, lead can cause permanent neurodevelopmental defects including impaired IQ. Thank you.

A: The manufacturer tests all the batches for lead before the process starts. There has been no lead in the products.

Q: I met a lady who is unable to take NSAIDs for some reason. Since cocoa is a natural anti-inflammatory, do you know whether it would be a problem or a benefit for her to consume the healthy chocolate?

A: The cocoa is an antihistamine which stops acid production in the stomach and it works on COX 2 pathways which does not affect the stomach. She will do well with the cocoa.

Q: I have recently been diagnosed with failing adrenals and have also been told I am not producing enough insulin. The symptom that took me to my holistic doctor was complete exhaustion to the point that sometimes, while driving, I would have to pull over for fear of falling asleep at the wheel. My BP has always been good (110/70) and remains so. I am an otherwise extremely healthy, 50-year-old woman. After just a few days on the healthy chocolate nuggets and healthy chocolate drink, I am no longer experiencing the frequent exhaustion. I occasionally feel tired, but it passes quickly. Am I imagining things?

A: I am very excited about your response to the chocolate. It is truly amazing what the right type of cocoa can do for you in a short period of time. The different chemicals - theobromine, serotonin, MAO inhibitors, PEA, etc. - do give you the added energy. The cocoa also stabilizes blood sugar and makes you feel stronger quickly.

Q: My friend is allergic to refined flour, refined sugar, and milk. Is it safe for her to try healthy chocolate?

A: There is no refined flour, sugar, or any true milk proteins. It will be safe and help her feel better. Let me know how things progress.

Q: I know a very overweight man that is diabetic and also taking four different medications for high blood pressure and other health issues. He is reluctant to take the chocolate due to diabetes. We suggested the healthy chocolate drink, but he claims he see no difference in the ingredients in the healthy chocolate drink and the healthy chocolate nuggets. I do not know what medications he is on. Can you shed a little light on this, especially if the healthy chocolate drink is OK, and why is it OK?

A: The healthy chocolate drink is 100% unprocessed cocoa with minimal fat and no sugar. It is the best for diabetics. The healthy chocolate nuggets have some sugars in them, so you have to be more careful with the healthy chocolate nuggets and diabetes.

Q: Is this gluten free?

A: Yes!

Q: Is this good for spastic colon?

A: It is great for spastic colon, Crohn's, and ulcerative colitis. It helps a lot.

Q: The question keeps coming up about good fats and bad fats and the fat content of the healthy chocolate products. Could you please help clarify this matter? Thank you!

A: Please look at the booklets and the Omega 3 CD at healthychocolatetools.com about the fats. Remember, cocoa butter is neutral and does not increase cholesterol or put weight on you. It is a special type of saturated fat. The unsaturated fats are from omega 6s and 3s, which are good fats and are essential for your health. You need these types of fats in your diet to feel better. Dr Steve

Q: I have caffeine sensitivity and have not had any caffeine (including chocolate) for years. Do healthy chocolate products contain caffeine?

A: Pure cocoa beans without the fiber and husk have zero to a very, very

small amount of caffeine. The Canadian government tested the healthy chocolate bar and found no caffeine in it.

Q: We have a potential client who had a liver transplant three years ago. He is on a potassium restricted diet, and does not want immune boosters, so are there any reasons for him not to take healthy chocolate products? Also, we know someone whose grandson has ADHD and cannot take anything with casein in it. Will he be okay with the healthy chocolate?

A: It is okay to take with the liver transplant and will help him feel better. A healthy chocolate bar is perfect for the grandson, and it will help with ADHD. It contains no casein.

Q: Do you have any research on how chocolate might help people diagnosed as being bipolar?

A: Cocoa contains bioactive chemicals which will help the bipolar disease. Healthy chocolate that contains omega 3 definitely helps bipolar patients.

Q: How does healthy chocolate affect fibromyalgia?

A: It is wonderful for fibromyalgia, and even the fibromyalgia association wanted information on it.

Q: My dentist was doing an implant for me, and had originally told me that he would probably have to do a bone graft. Well, he was so excited, I am a text book case of bone growing back and he will be using my x-rays in talks. What I want to know is did the chocolate help the bone to grow? Or do you think it was my multi vitamin. I am 60.

A: It is a combination of both. I have had a lot of associates with reports of no cavities and great gums from cocoa. Cocoa will also help bones grow.

Q: I have a friend who has been taken off all chocolate because of a hiatal hernia and damage to her esophagus. What would be in chocolate that would hurt her esophagus? Can she eat

healthy chocolate? I would like to have her try healthy chocolate but do not want to cause her a problem by going against her doctor's orders. Thanks for your help.

A: The sugars and fats in the chocolate cause the problem, but healthy chocolate does not cause any problem and is good for reflux.

Q: Is it possible for a person to get toxic levels of chocolate by consuming 4 or 5 healthy chocolate nuggets at a time, for a total of 12-15 per day?

A: Probably not, but I do not know the upper limit, and I preach moderation. Some can tolerate it while others would have problems. Listen to your body.

Q: I read your "Chocolate Desk Reference". In it you state three times that you should not eat too much of it. Others have told me that a person can't take too much. Who is correct? What happens if you take too much? I don't want to give people incorrect information.

A: I preach moderation in all things, so up to four times the amount is okay, but too much could cause problems in some people while some could eat a lot more and have no reaction.

Q: Any studies on Parkinson's Disease?

A: There is evidence that cocoa will help Parkinson's with the increase in dopamine and increase in energy levels. Flavonoids, especially cocoa, have been found to help, and, although observational study shows some benefits, no true cross over studies have been conducted.

Q: Can I stop medications when I start this product?

A: You must always check with your physician and work with them in making any changes in your medication. You can take information about the product to your physician and ask for their help in any decision you make.

Q: I am taking coumadin. What will this product change?

A: As with anyone on coumadin – a blood thinner – you must always

check with your physician and have your PT-INR followed closely. This is very important since many products can change your results. This product may increase the PT-INR and require a reduction in your coumadin levels.

Q: Are there any other drug-product interactions?

A: At this time there are no other drug-product interactions but we will monitor closely any reports of changes.

Q: Is this product safe for diabetics?

A: Raw cocoa has no added sugar, so it won't affect blood sugar levels. The sweetener in many healthy chocolate products is a natural sweetener called agave. It comes from a cactus-like plant and is very safe. It has a low glycemic index and will not cause increases in blood sugar. Chocolate has been shown to help your blood use sugar more effectively so it is important as always to monitor your blood sugars.

Q: Is this product a weight loss supplement?

A: No, it was not designed as a meal replacement. However, chocolate is a natural appetite suppressant and can decrease certain people's appetites. Also, the natural sweetener agave goes to the brain center and turns off the craving for sugar and it can also decrease your appetite.

Q: I am getting diarrhea after starting this product.

A: This product contains 2 grams of fiber per serving and an increase in fiber intake for most people will cause diarrhea for the first few days until the body adjusts to the fiber. This natural soluble and insoluble fiber is healthy for the body and will help you feel better.

Q: If you consume the recommended amount of dark chocolate a day would you need additional fruits and vegetables?

A: This product contains a significant amount of antioxidants and other phytonutrients, but there are other benefits of fresh fruits and vegetables. You should use this product as part of a well-balanced diet along with an active lifestyle.

Q: Is it safe during pregnancy and also for children?

A: As always you need to check with your healthcare provider. This product can be used as part of an overall balanced diet during pregnancy. A recent study showed that mothers who consumed chocolate during their pregnancy had happier and more content children at 6 months than the group that didn't use chocolate. Children can use this product but in smaller amounts because they do not have the elevated free-radical load.

Q: Where does this product fall on the pH scale?

A: Acid and alkaline foods are neither good nor bad. The pH of a product is not that important to the body's overall pH balance. Many fruits are acidic in nature but tend to leave an alkaline residue in the body. The question should be not is the product acidic but whether it is acid-forming. The pH of this product is acidic in order to maintain an environment which prevents the growth of harmful microorganisms. Overall this product doesn't increase the acid load on the body.

Q: Does chocolate increase migraine headaches, acne or cysts, and insomnia?

A: Dark chocolate in its natural form doesn't increase headaches. It is the sugar and fat added to chocolate products which triggers headaches and causes increase in skin blemishes. There is no natural caffeine in chocolate, so it does not cause insomnia.

Q: Does dark chocolate affect intake of calcium?

A: There is no evidence that dark chocolate will interfere with the metabolism of calcium. There is some calcium in the product so you always need to have your physician monitor your calcium levels.

Q: What vitamins and minerals are in healthy chocolate?

A: Actual percentages change from batch to batch. There is some literature which outlines the main nutrients found in the components of healthy chocolate:

Raw cocoa contains calcium, phosphorus, iron, thiamine (vit B1), riboflavin (vit B2), niacin, nicotinamide (vit B3), pantothenic acid (vit B5), pyridoxine (vit B6), ascorbic acid (vit C), magnesium, copper, zinc, manganese, and vitamin E.

RIBOFLAVIN

It is a vitamin helps with energy production. It is what makes your urine very yellow.

PYRIDOXINE HYDROCHLORIDE

It is a form of vitamin B6. It is a very important vitamin in more than 100 body reactions. It is important in protein metabolism, red blood cell formation, carbohydrate and fat metabolism, neurotransmitter formation, hormone production, and immune function.

ASCORBIC ACID

This is a form of vitamin C. Vitamin C is needed for collagen formation, antioxidant, iron absorption, immune function, and formation of some hormones. Vitamin C needs to be obtained from our diet and cannot be synthesized.

THIAMINE MONONITRATE

It is a form of the vitamin thiamin, which is useful in the metabolism of carbohydrates and BCAAs for energy. It is important for the transmission of nerve impulses and formation of neurotransmitters.

ZINC

It is a mineral required for many body reactions. It stabilizes many cell walls and is involved in many body reactions. It is important for the immune system.

MAGNESIUM OXIDE

Magnesium is vital in building protein, bone metabolism, enzyme actions, muscle contractions, nerve conductions, maintenance of teeth, and helping the heart rhythm.

COPPER

Copper is a helper in many body functions. It helps form collagen and helps repair connective tissues. It is an anti-inflammatory and helps form myelin around nerves. It is an antioxidant along with zinc, SOD (superoxide dismutase), and ceruloplasmin.

PANTOTHENIC ACID

It helps with many body chemical reactions and is very important in the cellular metabolism of carbohydrates and fats to release energy. It is the "antistress" vitamin. It supports the adrenal glands to increase production of cortisone and other adrenal hormones to help counteract stress. It is thought to prevent aging and wrinkles.

MANGANESE

Manganese is used in many body reactions, especially carbohydrate metabolism.

VITAMIN E

It is a fat-soluble antioxidant

CALCIUM

Provides bone and tooth structure, blood clotting, nerve conduction, and is necessary for muscle function.

NIACINAMIDE

It is an active form of the vitamin niacin which helps in many body reactions and is especially important in the metabolism of glucose, amino acids, and fatty acids.

Q: What antioxidants or polyphenols are contained in healthy chocolate?

A: Cocoa contains large amounts of flavonoids – flavanols (epicatechins and catechins), anthocyanins and proanthocyanidins.

Statement:

The information in this book is for educational purposes only and should not be used to diagnose and treat diseases. All serious health conditions should be treated by a competent health practitioner. Neither the publisher nor the author of this book in any way dispenses medical advice, prescribes remedies, or assumes responsibility for those who choose to treat themselves.

About Steven E. Warren, MD, DPA

Dr. Warren has extensive experience in family medicine. He is board-certified in family medicine, as well as in hospice and palliative medicine. He is also a Fellow of the American Professional Wound Care Association and is involved in wound care research. He is the founder of the Foundation for Flavonoid Research. Dr. Warren is committed to improving quality of life through nutrition and fitness. He is currently the Medical Director of ten different nursing homes. Dr. Warren is married with seven children.

EDUCATION

- * B.A., University of Utah: Chemistry, magna cum laude
- * M.S., University of Utah: Health Education, Public Health, Community Medicine
 - * Finished coursework for a M.S. in Exercise Physiology
- * D.P.A., George Washington University: Health Care Policy Analysis and Administration
 - * M.D. George Washington University
- * Internship and Residency, University of Utah: Preventive Medicine and Nutrition Boards
 - * American Board of Family Practice
 - * American Board of Hospice and Palliative Medicine
 - * Fellow of the American Academy of Family Practice
 - * Fellow of the American Academy of Wound Care Professionals

WORK EXPERIENCE

- * Consultant for DHEW (Department of Health, Education, and Welfare) Health Resource
 - * Administration Office of Planning, Evaluation, and Legislation
 - * Private Practice: National Health Corp
 - * Internal Medicine, Obstetrics, Surgery
 - * Wasatch Family Medicine Holy Cross/ HCA family practice
 - * Medical Clinic family practice

- * Medical Director of 10 different Nursing Homes and a Hospice Group

- * Full-time Geriatrics in Nursing Homes, Home Visits for Hospice patients

- * Board of Trustees: Utah Medical Association

MEMBERSHIPS/HONORS

- * American Medical Directors Association (AMDA)

- * Phi Kappa Phi

- * Phi Beta Kappa

- * Pi Alpha Alpha (Honors Public Administration Society)

- * Outstanding NHSC Rural Physician

- * Featured in 3 PBS specials:

- o CODE Blue Frontier Medicine 1992

- o The Atomic Stampede 1994

- o The Journey Home—Hospice Story 2001

LECTURES

- * Sports Nutrition

- * Hospice

- * Pain Management

- * Symptom Management

- * Wound Care

- * Nutrition at the End of Life

OTHER CONTRIBUTIONS

- * Co-creator: AgingWell nutritional supplement
- * High-protein, low-carb, low-fat supplement initially developed for the aging patient
- * Medical Director: Retro Tech Blue Wound Care
- * President: Foundation for Flavonoid Research
- * Contributor: Life Made Simple 2006
- * National gardening, health, fitness, decorating, and family TV show hosted by Shellie Warren