

## **Chocolate's Healthy Halo**

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### **Biography of Rose Potts**

Rose Potts holds a B.S. degree in Food Science from the Pennsylvania State University and has worked for Blommer Chocolate for almost 25 years. She has performed various functions including Cocoa Bean Inspector, Sanitation Supervisor, Quality Control Supervisor as well as working as part of the Research and Development team with the emphasis on sensory evaluation. She conducts chocolate training and taste seminars within Blommer Chocolate as well for candy manufacturers and their conventions including "Sensory Evaluation of Chocolate...Speak the Language of the Food of the Gods" presented at the National American Association of Candy Technologist's convention as well as various seminars on chocolate tasting, chocolate and wine tasting, sugarfree products, and chocolate trends at the Philadelphia National Gift and Gourmet Show, Retail Confectioners International Convention, Chocolate Manufacturer's Association and the Pennsylvania Manufacturing Confectioner's Association. Most recently, she has been promoted to Corporate Manager of Sensory and Product Guidance for Blommer Chocolate.

# Chocolate's Healthy Halo

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## **Introduction**

Chocolate is the number one craved flavor in the world and considered a small affordable luxury.

It has been craved and coveted for hundreds of years starting with the Aztecs. The Aztecs believed cacao could cure the faint of heart, reduce heart palpitations, increase stamina and raise the spirits of a village.

We now know that our mood is elevated just by inhaling the smell of chocolate as it seems to reduce the wave activity inducing a sense of relaxation!

Cacao is getting back to its roots as the only difference today is that some of the wellness benefits are being proven scientifically.

A current example of this is the Kuna Tamarinds which are an indigenous population off the coast of Panama. Despite their traditional high salt diet, they show no increase in blood pressure as they age. Peculiar to their diet is their daily consumption of approximately five cups of cocoa. Also, if the people move away and the island cocoa drinking habit, their blood pressure increases with age.

Obviously, all foods should be consumed in moderation as part of an overall balanced healthy diet.

### **Chocolate's Healthy Halo**

We are going to highlight a few of the health aspects relating to chocolate and concentrate on a discussion of antioxidants as this is often quoted in the media, but seldom well understood.

The number one killer of men and women in the United States is cardiovascular disease. Thirty eight percent of the deaths in US are from this disease. Some things that are bad for our heart are inflammation of blood vessels , high blood pressure and high cholesterol.

Consumers do have an awareness of what they should and should not have as is reflected in a 2010 Mintel report that lists that consumers want to avoid:

1. saturated fat
2. trans fat
3. cholesterol
4. sugar
5. sodium

At the same time consumers said they want:

1. whole grain
2. fiber
3. protein
4. calcium
5. antioxidants

We will review how cacao products are right on trend for our well-being and the desires of the consumer.

Cacao products contain no cholesterol as in all plant products. Cholesterol is only found in animal products. Therefore, cocoa powder contains no cholesterol, traditional dark chocolate only trace amounts and milk chocolate has some that is contributed from the milk. Similarly, dark chocolate has only trace amounts of

trans fats and milk chocolate will have slightly more as this is also naturally contributed from the milk.

Saturated fats are generally considered bad for our health as most saturated fats raise cholesterol levels. However, if we look at the composition of cocoa butter, 35% of its composition is of stearic acid. Although a saturated fat, it has a neutral to beneficial effect on our cholesterol by slightly raising our HDL or “good” cholesterol.

Additionally, cacao is a surprising source of minerals. We do not require a large quantity of each mineral, but a deficit can have deleterious health implications. Chocolate is the number one source of copper in the US diet.

A deficiency of copper can contribute to cardiovascular disease later in life. Chocolate contains magnesium which can help stave off chronic disorders such as insulin resistance, cardiovascular disease and low mood which can lead to depression. Chocolate also contains potassium which helps reduce our blood pressure and reduce stroke-related mortality.

Recent studies have also suggested that chocolate high in cocoa solids can actually keep us mentally sharper. It helps prevent memory loss and the predisposition for Alzheimer’s disease. It increases blood flow to the brain and the antioxidants help protect prevent amyloid plaque buildup. Alzheimer’s patients have been shown to have a buildup of amyloids in their brains.

The March 2010 *Journal of Cosmetic Dermatology* has suggested that dark chocolates high in antioxidants help the skin increase its natural Ultra Violet protection from the sun.

Chocolate has also been cited in the *British Medical Journal* to be a candidate to be part of the “polymeal” family. It has been suggested that consuming a variety of certain foods on a regular basis as part of our “polymeal” will lead to better health. Members of this family of foods that help fight cardiovascular disease and cancer are dark chocolate, fruits and vegetables, wine, garlic, almonds and fish. This philosophy ascribes to the all things in moderation and balance for our total health – mind, body and spirit.

## **Antioxidants**

Since so much has been in the media about antioxidants found in cacao and in certain foods in general, it would be good to spend some time clarifying some basic facts about them.

If we understand better, we may do better.

Antioxidants fight free radicals in our bodies. We need to fight free radicals because these are molecules that are highly reactive and unstable. They lead to degeneration of our bodies and have a cumulative effect over time. We are exposed and taking in free radicals daily through sun exposure, pollution, smoke, toxins, foods and stress.

Antioxidants fight free radicals in our bodies by binding to their chemical structure. If free radicals are bound (their oxygen need quenched), they are no longer “free” to attack our cells in our bodies. Reducing the negative power of these free radicals with antioxidants reduces inflammation, cholesterol, blood pressure and proteins from clumping in your eyes that cause cataracts.

Polyphenols are a type of antioxidant with many sub categories. Different foods have antioxidants from these different categories. Foods with red, blue or purple colors such as apples contain anthocyanidins. Chocolate, tea and wine contain catechins. Citrus fruits contain flavones. Basically, the brighter the natural color in foods, the more polyphenols they have. Think blueberries, pomegranates and sweet potatoes. Before cocoa beans are roasted, they can be various colors on the inside such as pinks and purples. The degree of fermentation influences the color inside the beans.

A number of factors can affect the level of available polyphenols or antioxidants found in chocolate products. The more cocoa solids, the more antioxidants. Cocoa mass is different from cocoa solids. Cocoa mass is the total of all ingredients in a chocolate that come from the cocoa bean. The antioxidants are only carried in the solids. Therefore, natural cocoa powder has the most antioxidants of the chocolate products. Cocoa powders treated with alkali will have reduced antioxidant activity. High heat can also reduce antioxidant activity as well as fermentation in the processing of cocoa beans.

Within the last few years dark chocolate popularity has soared – as much as increasing 70% in some categories due in part to the news about the potential health benefits carried particularly in the higher cacao mass chocolates. Additionally, the changing demographics of our population have skewed the preferences toward dark chocolate. The preference for dark chocolate peaks in the age group over 35 years old. Our taste buds age with us and our tolerance for higher impact foods such as dark chocolate as increases. As our population grows in this age group, the passion for dark chocolate has grown because of our changing tastes and our desire to consume “better for you” foods. Some companies have used their own symbols on their chocolate products to alert consumers to the presence of antioxidants in their products.

To review, antioxidants, of which polyphenols are one type, are present in chocolate and they can help fight cancer and cardiovascular disease by reducing inflammation, cholesterol and blood pressure.

## **Antioxidant Measurement**

Unfortunately there are different ways to measure antioxidants with no standard method at this time to use for comparisons. Total polyphenol content or individual polyphenols can be measured. Another measurement is referred to as ORAC which measures the oxygen radical absorption capacity. This measures the antioxidant activity or bioavailability of the antioxidants. There are many factors that can affect the actual usefulness of the antioxidants. For example, carbohydrates (sugars) are thought to enhance the antioxidant capacity in chocolate.

Additionally, if comparisons between different foods are made, the differences can appear smaller or larger depending if the antioxidants are reported per serving or per 100 grams. Different foods have different serving sizes. The cocoa powder serving size is five grams whereas the serving size for chocolate is forty grams. The bottom line for chocolate products is that natural cocoa powder gives” the most bang for you buck” when it comes to antioxidant content.

## **Conclusion**

Chocolate can fit into a healthy diet.

Consumers know to avoid saturated fat, trans fat and cholesterol and want whole grain , fiber, protein, calcium and antioxidants. Chocolate can be a good compliment to address these health concerns.

But, perhaps even more importantly, consumers want to eat food that tastes good and makes them feel good. Chocolate is not only the number one craved flavor, but when eaten, our brain feels the same as when we are falling in love.

Formulate your products with chocolate and let your customers fall in love with your product too!