



Tart Cherry
Mother Nature's Joint Pain Reliever

Tart Cherries for a Healthier and More Active Lifestyle

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Introduction: The Tart Cherry!

It has long been a common belief that certain foods provide natural health benefits and these foods offer much more than just dietary value. In addition, new research is revealing that certain foods have natural health benefits, natural healing and disease fighting properties. This is proven since many medicines of today start with the basically the same ingredients found in nature.

This special report will introduce you the antioxidant-rich properties of a ruby-red fruit called the tart cherry. Ongoing research from medical universities show that tart cherries can benefit the human body by:

- Fighting joint pain due to gout and arthritis
- Fighting inflammation in the body
- Fighting heart disease
- Providing the body with high levels of ORAC units

Tart cherries, like many other foods are a natural source of antioxidants. In addition to the naturally occurring antioxidants, tart cherries also have a number of naturally occurring antioxidants including Anthocyanins. But, before we go any further, I will define both: antioxidants and Anthocyanins.

What is an Antioxidant?

An antioxidant is defined as “any of various substances (as beta-carotene, vitamin C, and alpha-tocopherol) that inhibit oxidation or reactions promoted by oxygen and peroxides and that include many held to protect the living body from the deleterious effects of free radicals.”

Free radicals are unstable molecules that have lost an oxygen molecule. These unstable molecules steal oxygen molecules from healthy cells. One example of the affects of free radicals on healthy cells is the browning of a freshly cut apple or potato. If you have ever cut an apple or

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a potato and let it set on the counter for 20 minutes you have witnessed the affects of free radicals. The browning of the exposed fruit is what is called “cellular rust.” Antioxidants help they body to fight free radicals and help to slow the aging process.

What are Anthocyanins?

Anthocyanins are responsible for giving nature its vibrant colors. Anthocyanins are present in every fruit and vegetable that has color. You can see the overwhelming presence of this pigment when you visit an orchard or the fresh produce section of your local grocery store. Anthocyanins are present in blueberries, cherries, strawberries, apples, and red raspberries to name a few. In addition, Anthocyanins are the phytochemicals responsible for changing the colors of the leaves from green to fiery red, orange, purple, yellow and more.

Anthocyanins have long been the study of botanists due to their phytoprotective capabilities. To date, over 300 distinct types of Anthocyanins have been identified. Based upon research, Anthocyanins belong to one class of flavonoids. Flavonoids include a number of different classes including flavones, flavonones, flavon-3-ols and flavonols to name a few. Different classes of flavonoids have different oxidations states. Thus, from an oxidative standpoint, different fruits and vegetables offers different oxidative degrees.

Below is the nutrition information for several different types of tart cherry products:

A daily serving (1/4 cup – 100g) of dried tart cherries provides the following:

- 138 Calories
- 4.55 g protein
- 28.9g Carbohydrates
- .23g Fat

A daily serving (1 oz. – 100g) of tart cherry juice concentrate

- 74 Calories
- .92 g protein

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- 17.5g Carbohydrates
- 0g Fat

A daily serving (1 oz. – 100g) of frozen tart cherries

- 28 Calories
- .65 g protein
- 6.35g Carbohydrates
- .4g Fat

Tart Cherries Offer a Supermarket of Antioxidant Compounds

The good news about tart cherries and their natural health and healing benefits just keeps coming. Medical schools and research universities continue to publish more evidence showing the natural health benefits of this tiny red fruit.

Research shows tart cherries have at least 17 naturally occurring compounds that have antioxidant compounds and help prevent and/or slow down the oxidation process.

What Are Some of These Antioxidants?

- **Anthocyanins:** Anthocyanins are a naturally occurring compound found in nature. In fact, Anthocyanins is what gives all fruit and vegetables it color. Anthocyanins belong to a class of flavonoids.
- **Melatonin:** Melatonin is popular for helping the body regulate daily circadian patterns. Cherries are a high source of Melatonin.
- **Vitamins A, C and E:** Both of these vitamins are powerful antioxidants. High doses of vitamin E helps prevent oxidation of LDL. Oxidation of LDL, according the research can cause stroke and heart disease. LDL is also called the “bad” cholesterol inside arteries.

Tart Cherries Help Fight Joint Pain Due to Arthritis

To the legions of joint pain sufferers the tart cherry is a welcome natural relief. Many do not want to take prescription joint pain medication due to the unhealthy side effects reported just a few years ago. Tart cherries help to reduce joint pain due to arthritis.

According to research from Michigan State University, tart cherries inhibit COX 1 and COX 2 (cyclooxygenase 1 and 2) enzymes and prevent inflammation in the body. Tart cherries help the body to produce similar types of chemical process as non-steroidal anti-inflammatory drugs (NSAIDS). Some examples of NSAIDS drugs are ibuprofen and aspirin.

NSAIDS work by inhibiting two popular enzymes, COX 1 and COX 2 (cyclooxygenase I and II). These enzymes are naturally produced in the body to respond to pain. NSAIDS prevent chemical messages from binding to COX 1 and COX 2. Thus, the messages are not delivered, so the body doesn't become inflamed and doesn't feel the pain. Tart cherries contain natural COX 1 and COX 2 inhibitors that function in the same manner to NSAIDS. The inhibitors found in the tart cherries are of the flavonoids class. Unlike NSAIDS, research shows these flavonoids protect against stomach damage. So in other words, the compounds in the tart cherry are natural COX-1 and COX-2 inhibitors.

According the research from Michigan State University the natural inhibitors found in tart cherries act superior to over-the-counter (OTC) pain relievers. In addition, according to Michigan State University tart cherries inhibitors are most effective in concentrated forms of tart cherries products. Some examples of highly concentrated tart cherry products include tart cherry juice concentrate and tart cherry powder.

In addition to tart cherries, two other natural ingredients also help joint pain due to arthritis. These ingredients include glucosamine and chondroitin. These two ingredients are the most research ingredients in the history of natural medicine. The combination of these two natural ingredients helps to lubricate joints and build cartilage. I am bring this to your attention because if you combine tart cherries with glucosamine and chondroitin you will have a combination of ingredients that addresses the main concerns for arthritis suffers: pain and lack of cartilage. The

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tart cherries reduce the pain and inflammation, while the glucosamine and chondroitin build cartilage and lubricates the joints.

In fact during my research for this book, I did learn about a product that combines tart cherries, glucosamine and chondroitin. The name of this patent-pending product is Fruit Advantage Cherry Prime. <http://www.fruitadvantage.com> It combines 425mg of tart cherry with 1500mg of glucosamine and 1200mg of chondroitin. These are the recommended dosages for these ingredients.

Tart Cherries Helps Fight the Gout

Gout is actually a form of arthritis. Gout pain is the result of the buildup of uric acid in the body. Uric acid is a result of crystal-like formations that travel through out the body via the blood stream. These jagged crystals are the cause of the redness, swelling and pain that gout is infamously known for.

What is the Cause of these Painful Crystals?

Gout is normally associated with high concentrations of uric acid in the body. Uric acid is produced in the liver. As uric acid level in the body increase little needlelike crystals of salt form. These are called monosodium urate (MSU). Over time, these needlelike crystals tend to collect in the open spaces between the joints and cause pain and inflammation.

Here is a brief list of some of the top causes of the causes of these painful crystals, aka gout:

1. If you have a family history of gout, you may also suffer from gout.
2. Being overweight also contributes to gout.
3. Drinking excess alcohol or people drinking large amounts of alcohol on a continued basis can contribute to gout.
4. People how had an organ transplant are more likely to have gout than those who have not an organ transplant.

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5. Men are more likely to get gout than women, however more women are getting gout.
6. The consumption of high purines food including seafood, alcohol and meats like kidney's and liver.

How Tart Cherries Fight Gout?

Research shows that tart cherries contain flavonoid compounds that may help to lower uric acid and help to reduce pain and inflammation. The compounds found in tart cherries help to dissolve the needlelike crystals in the joints and reduce the redness and swelling.

Get a Good Night's Sleep with Tart Cherries

One area of continued interest regarding the tart cherry is the presence of Melatonin. Melatonin helps to regulate the body's rhythmic patterns – it helps control sleepiness during the night and wakefulness during the day. According to research from the University of Texas the amounts of Melatonin present in tart cherries can produce a positive outcome in the body.

Melatonin is usually not found in many fruits. Tart cherries, when compared to other fruits have high levels of this naturally occurring compound. In addition, different types of tart cherry products have different Melatonin levels.

Melatonin Levels in Different Tart Cherry Products:

Fresh Tart Cherries:	Up to 13.5 nanograms (ng) of Melatonin per gram
Tart Cherry Juice Concentrate:	Has up to 10 times more the Melatonin per gram when compared to the raw fruit.
Tart Cherry Powder:	137+ ng per gram
(Cherry powder is used to make tart cherry capsules)	

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Thanks to advances in food science technology, different production methods are able to extract different levels of this naturally occurring compound.

What is Melatonin?

Melatonin is produced in the pineal gland, which is located at the base of the brain. In addition to control the body's rhythmic clock, Melatonin also acts as an antioxidant. It helps to combat free radicals in the body. Additional research from the University of Texas Melatonin is both soluble in both fat and water. This helps this compound to penetrate some cells that vitamins can not enter, thus Melatonin is more potent than vitamins A, C, and E. Although Melatonin is available without a prescription, food experts recommend consuming this beneficial compound through whole food consumption.

Fighting the Factors of Heart Disease and Diabetes

In 2008 research results from the University of Michigan Cardiovascular Center shows that tart cherry powder showed good results with reducing factors associated with heart disease and diabetes. The results of this ground breaking research were presented at the 2008 Experimental Biology meeting held in San Diego, CA by individuals from the University of Michigan Cardioprotection Research Laboratory.

This research was conducted on the rats, U of M is currently preparing clinical trials working with humans participants. In short, rats in the research study were given whole tart cherry powder. Tart cherry powder is made from whole tart cherries that have been powdered down to create an easy-to-take and consumer friendly way to enjoy the natural health benefits of whole tart cherries.

The rats given the tart cherry powder during the study had significantly lower blood levels of triglycerides and cholesterol than the other rats that didn't receive the tart cherry powder. In addition, according to the research, the rats in the study didn't build up as much body fat in the belly or gain as much weight as those who didn't receive the cherry powder. Belly fat is just one

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factor linked to cardiovascular disease. Some of the tests conducted on the subjects during the test were measured on variables linked to Type 2 diabetes and cardiovascular disease. And blood samples from the participants showed much lower levels of the specific molecules that indicate the kind of inflammation that has been linked to diabetes and heart disease.

The results of these finding built on the results that the University of Michigan team presented in 2007. This previous experiment involved lean rats that were prone to impaired glucose tolerance, high blood pressure and high cholesterol. The participants in the 2007 study results receive were divided into two groups – a low fat diet with tart cherries and a low fat diet without tart cherries. In the earlier test, the cherry-fed rats had lowed oxidative stress, less fat storage, lower blood sugar and lower total cholesterol.

According the researchers that conducted the test, the findings were very exciting and encouraging. At the end of the 2007 study the rats were tested for blood level glucose, cholesterol and triglyceride levels. In addition to plasma inflammation tests, the participants are received DEXA scans to measure body and to see where fat had collected. By the end of the study, the rats that received tart cherry powder had lower body weight, lower fat mass and lower total triglyceride and cholesterol than the rats that didn't receive the tart cherry powder.

Tart Cherries Help to Fight Muscle Pain

The anti-inflammatory properties of the tart cherry not only reduce pain due to arthritis and inflammation in the body, by also muscle pain due to physical exercise.

Much research has been conducted on the anti-inflammatory benefits of tarts regarding joint pain and heart related issues. The University of Vermont and colleagues at New York's Nicholas Institute of Sports Medicine and Athletic Trauma and Cornell University conducted a study on the a fresh, highly-concentrated, specially- processed tart cherry juice blend in preventing the symptoms of muscle pain and damage on 14 male college students. This was a placebo-controlled study by the researchers.

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The study had the participants drank either a placebo or a bottle of a cherry juice blend twice a day for three day before exercise. The 12 ounce bottle of juice contained the liquid equivalent of 50 to 60 tart cherries. During the study the participants were asked to perform exercise including contractions in the muscle including tensing and flexing one arm 20 times. The study rated the muscle soreness on a scale of one to ten. According to the study, there was a significant difference in the degree of muscle strength between the tart cherry juice product and the placebo. Those drinking the placebo, muscle strength fell by 22 percent while those drinking the cherry juice product fell by only 4 percent. In addition, the average pain score between the placebo and the cherry drink was 3.2 compared to only 2.4. The results indicated muscle pain was less with those that drink the cherry juice.

Tart Cherry Supplements and Tart Cherry Products

The tart cherry offers a number of ways to enjoy the natural health benefits including dried tart cherries, tart cherry juice concentrate, tart cherry capsules and more. Below are some of the ways and sources to incorporate tart cherries into your daily diet.

- **Fresh Tart Cherries:** When in season, you can get fresh cherries straight from the farm market or the produce section of your local store. Unfortunately, fresh tart cherries are only in season for a few short weeks during the summer months. Thus, find fresh cherries may be very difficult.
- **Frozen Tart Cherries:** Enjoy a few thawed cherries in your pancakes or muffins. To get your hands on frozen cherries visit the refrigeration section of your local grocery store.
- **Dried Tart Cherries:** A handful of dried cherries make a great healthy snack or an addition to your morning cereal. They also make a good alternative to the candy in the candy jar next to your computer. Dried cherries make a great choice since they are available year round. One source for dried cherries is Traverse Bay Farms www.traversebayfarms.com The company will ship dried tart cherries directly to your home or office.
- **Tart Cherry Juice Concentrate:** It takes approximately 100 tart cherries to make one ounce of tart cherry juice. Tart cherry juice concentrate is a concentrated way to get the natural health

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benefits of this ruby red fruit. One source for tart cherry juice concentrate is Traverse Bay Farms www.traversebayfarms.com

- Tart Cherry Extract (Super Fruit Supplements): Tart cherry supplements are the most convenient and easiest way to get the natural health benefits of the tart cherry. These super fruit dietary supplements start with the whole cherry. The entire tart cherry, excluding the pit and the stem, is used to produce the tart cherry capsules, including the skin and the flesh of the fruit. A good source for cherry capsules is from Fruit Advantage www.fruitadvantage.com

Sources for Tart Cherry Products:

Tart Cherry Juice Concentrate: Traverse Bay Farms www.traversebayfarms.com

Tart Cherry Capsules (capsules): Fruit Advantage www.fruitadvantage.com

Dried Tart Cherries: Traverse Bay Farms www.traversebayfarms.com

Sources for Additional Antioxidant and Anthocyanins Information:

American Heart Association – www.americanheart.org

American Medical Association – www.ama-assn.org

Center for Disease Control – www.cdc.gov

Food with Benefits – www.foodwithbenefits.com

Fruits and Vegetables Matter – www.fruitsandveggiesmatter.gov

Orchard of Health – www.orchardofhealth.com

5 Day Program - www.5aday.gov