

*Much More
Than a
Nice Cuppa*

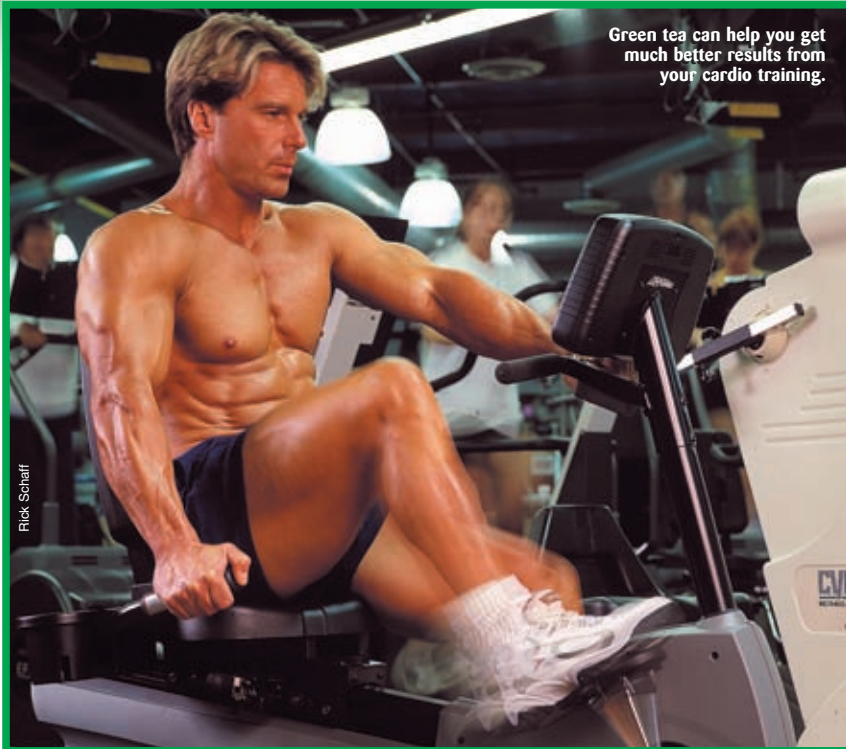
GREEN TEA

Whenever a discussion concerning bodybuilding supplements takes place, it is normally about enhancement products such as whey protein, creatine, glutamine, NO₂ or amino acids. But there are many nutrients that have been available forever-and-a-day that we often overlook, and one good example is green tea. Everyone has heard that drinking it is supposed to improve overall health, however, green tea being discussed as a bodybuilding supplement is relatively rare. Just because a supplement does not directly cause you to add a bunch of muscle or strip fat off at record rates does not mean that it cannot be a very useful tool in your bodybuilding arsenal. Green tea offers a lot of benefits to bodybuilders, and drinking a cup or two a day might be a good habit to get into.

 Xavier Fox



Jason Mathias



Green tea can help you get much better results from your cardio training.

As most of us know, green tea has been around for centuries. Although it is more known for its use in China, it has become a popular drink all over the world. In the United States and most European countries, the form of tea that is traditional is black tea. Like black tea, green tea is made from the leaves of the *Camellia Sinensis* plant... it is the way the leaves are processed that determine the difference between the two.

In recent years, it has become hard to go into any convenience or grocery store and not find soft drinks or herbal supplements that contain green tea. Some of the world's most consumed beverages are either green tea, or beverages containing green tea.

So how can green tea have an effect on your bodybuilding career? There are actually several ways that the effects of green tea can influence your ability to win competitions. One of the most important ways is how green tea has shown to have the ability to reduce harmful intestinal flora, while increasing beneficial intestinal flora at the same time.

Intestinal flora is the microorganisms found in the digestive tract that perform a wide spectrum of valuable functions. Firstly, they are an integral part of the system that produces vitamins from the food you ingest, especially biotin and vitamin K. Biotin is essential for cell growth, the production of fatty acids, and the metabolism of fats and amino acids. Biotin is a critical part of the energy production process, and it helps the body maintain steady blood sugar levels. Most of all, biotin supports many of

the metabolic reactions in our body that turn nutrients into muscle. Vitamin K is a powerful antioxidant.

Keeping healthy intestinal flora is very critical to your ability to digest carbohydrates and turn them into energy. The intestinal flora in your stomach contains specific enzymes that the other cells in your body do not. These enzymes allow intestinal flora to break down the complex

carbohydrates known as polysaccharides. If you body cannot perform this function, not only will you inefficiently burn carbohydrates and lose the ability to create some potential energy for your intense workouts, but also the undigested carbohydrates will end up around your waistline, which will not help you take any trophies home.

Intestinal flora in turn breaks down carbohydrates into alcohols and acids, and some of these acids are short chain fatty acids (SCFAs). These SCFAs are a large source of energy and nutrients, they help the stomach absorb water, and they reduce the amount of harmful bacteria in your intestines. Acetic acid is one of the SCFAs, and it joins with coenzyme A to become a critical part of the metabolic process of carbohydrates and fats. A study performed at the Central Research Institute in Japan showed that larger concentrations of



A cup of green tea a day is a good habit.



acetic acid lead to higher concentrations of glycogen in the muscles.

Another SCFA that intestinal flora helps produce is propionic acid. This acid helps the liver produce ATP, and for those of you who forget... ATP is only the main energy source within cells that is used to produce energy during metabolic reactions.

So... if having energy available to help your body work is at all important to you, and you feel that maybe you should ensure there is enough ATP in your system to fuel your workouts and keep yourself alive, then drinking green tea to produce intestinal flora that will keep SCFA supplies abundant just might be useful.

Groovy thing number two that green tea does is that it has been shown to significantly increase antioxidant levels. Green tea contains many polyphenolic antioxidants. The particular class of polyphenols is the flavonoids. Many studies show that even a single drink of green tea can produce a large amount of antioxidants in the system.

Antioxidants are compounds that have the ability to donate an electron from their outer shell without becoming unstable and changing their characteristics. This enables them to neutralize free radicals and stop the potential chain reaction of free radical production, which can lead to cell damage.

If free radicals are left unchecked they will continue to multiply by chain reaction and will soon lead to massive amounts of cell damage. This is especially true in the mitochondria where much of the energy conversion processes take place so that the muscles can work. The many reactions within the mitochondria result in the formation of free radicals, so it is imperative for a bodybuilder to ingest antioxidant rich foods and supplements.

Antioxidants do much more than keep the energy conversion processes operating efficiently. They help all cells in the body from becoming damaged. Therefore, they help the

It's a proven fact that green tea helps the body get rid of flab and even reduces cholesterol.



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Bodybuilders know that green tea can help reduce subcutaneous fat.

immune system to function properly, which keeps you healthy and feeling good so you can make it to the gym every day and train hard. Antioxidants remove toxins from the system to keep your body operating appropriately, and they also join in the fight against cancerous cells. Ingesting antioxidants to guard against all cell damage helps every system in your body function better, so the entire "machine" does not break down.

Getting back to the polyphenols found in green tea... a study performed at the world-renowned Case Western Reserve University School of Medicine showed that the antioxidants in green tea might prevent and reduce the severity of rheumatoid arthritis. The



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purpose of the study was to observe the effects of green tea polyphenols on collagen-induced arthritis in mice, which is comparable to that in human beings. The mice given the green tea polyphenols were significantly less likely to develop arthritis than the mice in the placebo group. The mice in the placebo group were more than twice as likely to develop arthritis, and the arthritis they developed was more severe.

As a bodybuilder, you undergo intense weight training on a daily basis. Your joints are always moving under a great deal of stress, your cartilage and bones are constantly rubbing together, and you are performing repetitive motions day in and day out. Bodybuilders are much more likely to become arthritic than the average person. Green tea can help slow down any possible negative side effects of heavy resistance training that may lead to arthritis. Therefore, it will keep you in the gym well into your later years.

Ok... I will stop boring you for a moment with talk about how green tea can keep you healthy. I know that you really only want to hear how it will help you win the show. Luckily for you, a study published in the American Journal of Clinical Nutrition established that green tea has thermogenic properties and promotes fat oxidation. The fact that green tea has caffeine in it may make you say, "Duh... no kidding", however, the study showed that the thermogenic properties and fat oxidation were at higher levels than could be explained by the caffeine content alone. The researchers felt that it is due to the catechin polyphenols acting synergistically with the caffeine to take calorie burning to the next level. Energy expenditures can be raised significantly by drinking green tea. Since getting ripped is half the game when it comes to competing, green tea can help you tear those extra kilograms off so you can shred your competition.

All right, back to health benefits... The Journal of the American College of Surgeons reported that green tea might prevent the oxidation of LDL cholesterol ("bad" cholesterol) to reduce the build-up of plaque in arteries. In the study, 240 adults were given green tea or a placebo. After 12 weeks, the subjects consuming the green tea had LDL levels that were an average of 11% lower than their placebo counterparts when compared to the baseline. High LDL levels have been proven to be linked to coronary heart disease. With less plaque in your arteries, blood can flow easier and faster to bring more nutrients and oxygen to the muscles. It will also help remove toxins at a quicker rate.

Green tea also contains L-theanine, which is an amino acid that is very close to glutamine. Theanine has shown to reduce both mental and physical stress,

and it is most likely due to its ability to increase serotonin, gamma-amino butyric acid (GABA), and dopamine levels. Theanine even promotes alpha wave production in the brain, which is also why it helps to promote a feeling of relaxation in the body. Reducing stress will help keep you in good health, but theanine has also proven to help the body's immune system response when combating infection by elevating gamma delta-T cells that battle disease in your body. Don't forget... stress also triggers cortisol, which breaks down muscle tissue.

We all know that competitive bodybuilders spend a lot of time on the beach and in tanning salons making their skin the perfect shade for the stage. Those UV rays may give you a golden tan, but after years of exposure they can lead to the "crocodile skin" look, or possibly even skin cancer. It just so happens that green tea is a known aid in protecting the skin from overexposure to UV radiation. If you are drinking your green tea every day... go ahead and bake yourself until you are well done, because green tea will keep your skin looking and feeling healthy.

Hmmm... more efficient production of vitamins and processing of carbohydrates, enhanced fat oxidation and metabolism, improved immune system, increased blood flow to remove toxins and deliver nutrients, antioxidants to combat free radicals, more biotin for muscle growth, greater amounts of energy, anti-inflammatory properties that help fight against arthritis, reduction of LDL cholesterol, and mechanisms to reduce stress and its affects. What the hell are you doing sitting there? Get to the store and get yourself some of that wonderful green tea.

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One ingredient in green tea, L-theanine, can help you relax and sleep well.