

# OPTIMAL HEALTH UNIVERSITY™

Presented by Dr. Wayne Terai

## Strawberries: A Superfood

*Sweet, juicy strawberries are one of summer's most beloved foods. But did you know that they are more than just a delicious treat? Strawberries, like many other richly colored fruits and vegetables, are a nutritional powerhouse. Each berry delivers generous helpings of several antioxidants and other nutrients.*

*Dr. Terai encourages patients to indulge this strawberry season in one of the best-loved fruits and reap its health benefits. Read on to learn what this little berry can do for you, how to pick the healthiest berries, and why to always choose organically grown varieties.*



### An Impressive Nutritional Profile

Naturally sweet, strawberries have fewer than 50 calories and just seven grams of sugar per cup, making them ideal for satisfying a sweet tooth. Each cup of these tasty little ruby-colored treats contains three grams of soluble fiber, important for regulating blood sugar as well as controlling cholesterol.

Strawberries are also a good source of potassium, a mineral that researchers link to a reduced risk of hypertension and stroke (*J Am Coll Cardiol* 2011;57:1210-19).

They also contain folate, a form of vitamin B9 known for its crucial role in protecting against birth defects.

Dietary folate is also thought to ward off heart disease.

Even with all these health benefits, Dr. Terai points out that antioxidant power is where strawberries really shine.

Antioxidant chemicals, found in many plant foods, are molecules that prevent other molecules from *oxidizing*, or breaking down into free radical chemicals. Free radicals damage or kill cells, implicating them in cancer, diabetes, cardiovascular disease and other diseases.

One of the best-known antioxidants, vitamin C, is plentiful in strawberries — in fact, a one cup serving of strawberries provides more vitamin C than an orange.

These yummy berries also offer high levels of several *polyphenols*, a class of chemicals occurring naturally in plants and heralded for their antioxidant powers. *Anthocyanins* and *ellagitannins* are two specific polyphenols scientists have detected in strawberries.

These chemicals protect the body by inhibiting inflammation, detoxifying carcinogens (substances that cause cancer) and improving cell communication.

### Could Strawberries Protect You From Cancer?

The antioxidant muscle flexed by strawberries may fight the cell damage that causes cancer, according to novel research presented in April 2011 at the American Association for Cancer Research's 102<sup>nd</sup> Annual Meeting in Orlando, Florida.

Patients with precancerous lesions in the esophagus consumed 60 grams of freeze-dried strawberries (equivalent to about four cups of fresh strawberries) daily for six months. Of 36 patients, 29 had regression of the lesions.

Another exciting study tested the effects of different antioxidant-rich fruit extracts on human liver cancer cells. An 18-hour exposure to strawberry extract killed the diseased cells (*J Agric Food Chem* 2005;53:1271-80).

These studies suggest that a diet high in antioxidants from strawberries and other colorful fruits and vegetables could protect the body from cancer, says Dr. Terai.



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## A ‘Berry’ Healthy Heart

The unique combination of antioxidants in strawberries may also boost cardiovascular health by offering insurance against high cholesterol and high blood pressure.

Low-density lipoprotein (LDL), better known to most as “bad cholesterol”, is particularly dangerous when it interacts with free radical chemicals and becomes *oxidized*. Scientists believe that oxidized LDL more easily leads to the build-up of plaque in the arteries, also called *atherosclerosis* — a leading cause of heart attack and stroke.

Fortunately, a strawberry-rich diet may inhibit free radicals, in turn lowering the risk of atherosclerosis.

An experiment conducted in Toronto followed 28 patients with high cholesterol who consumed a diet designed to lower cholesterol. Half were instructed to eat three cups of strawberries daily for one month. The other half consumed extra portions of oat bran bread.

LDL levels dropped for both groups, but the strawberry group showed a greater decline in the dangerous oxidized LDL by the end of the month (*Metabolism* 2008;57:1636-44).

Another recent report showed similar control of LDL oxidation in patients who followed a high-fat meal with a serving of strawberries (*J Agric Food Chem* 2010;58:3869-70).

Strawberries also appear to lower overall LDL and total cholesterol in individuals with *metabolic syndrome*, a set of risk factors that often sets the stage for cardiovascular disease. Symptoms of metabolic syndrome include excess abdominal fat, high cholesterol, elevated blood pressure and high levels of blood glucose.

One group of patients with metabolic syndrome consumed 50 grams of freeze-dried strawberries (equal to about three cups of fresh strawberries) daily for eight weeks.

Compared to a control group, the

study participants showed significantly lower total and LDL cholesterol — plus lower levels of the protein molecule that helps cholesterol stick to artery walls (*Nutr Res* 2010;30:462-9).

Other studies point to the role strawberries can play in regulating high blood pressure, another symptom of metabolic syndrome (*J Agric Food Chem* 2010;58:3869-70).

## Ease Inflammation

The antioxidant power of strawberries can also temper inflammation, a factor in a wide range of health problems.

Inflammation is an immune response that can result from disease or injury, or it can be triggered by other stimuli, such as an overabundance of free radicals in the body. Antioxidant-rich foods like strawberries may neutralize the ill effects of chronic inflammation by preventing the formation of free radicals.

## Tame Tummy Troubles

The oxidative stress placed on the intestines by free radicals is a key factor in inflammatory bowel disease, Crohn’s disease and ulcerative colitis.

A hot-off-the-presses study from India reveals the promise held by strawberry extract for controlling these debilitating intestinal problems.

Researchers pretreated rats with strawberry extract. They then induced colitis in both the pretreated rats and a control group that did not receive strawberry extract. Examination of the rats’ colons 48 hours later showed that the strawberry extract group had less severe symptoms, including significantly fewer lesions and less inflammation (*Indian J Pharmacol* 2011;43:18-21).

## Choose the Healthiest Strawberries

The doctor recommends selecting organic foods whenever possible, and strawberries are no exception. In fact, strawberries are one of the fruits for which choosing organic is particularly crucial.

The Environmental Working Group reports that conventionally farmed strawberries carry as many as 13 different pesticides. They rank as the sixth most highly contaminated of all fruits and vegetables. Chronic exposure to these pesticides ups the risk of developing a myriad of diseases, including attention deficit hyperactivity disorder (ADHD), psychological problems, memory disorders and neurological conditions such as Parkinson’s disease.



Furthermore, organic growing practices may make for a more nutritious berry. A recent analysis of organically and conventionally farmed strawberries unearthed staggering differences. Organic berries contained higher levels of antioxidants vitamin C and polyphenols. They also provided a sweeter flavor and longer shelf life. The soil from organic strawberry farms is also full of higher concentrations of micronutrients (*PLoS One* 2010;5:e12346).

## Chiropractic Nutritional Advice

A balanced diet of whole foods is a critical component of the chiropractic lifestyle. That’s why this office provides regular handouts and educational opportunities on the latest nutrition research. Find out how you can boost your health by calling today for an evaluation.

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