

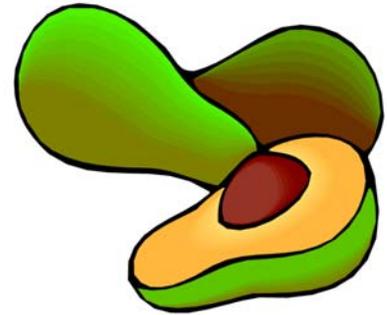
OPTIMAL HEALTH UNIVERSITY™

Presented by Steven L. Smith, DC & Stuart deWitt, DC

Awesome Avocados

The avocado is shrouded in myths, such as it's fattening, unhealthy and highly caloric. Fortunately, research has debunked the myths surrounding this fantastic fruit.

Your doctor at Hickory Chiropractic Clinic has gathered information demonstrating how a little avocado can go a long way in improving health and reducing risks for chronic disease.



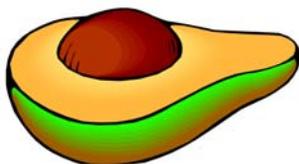
Cut Cancer Risk

There's cause for celebration for guacamole fans: A diet rich in avocados may stave off cancer. Avocados are chock-full of natural hormone-like chemicals called phytosterols (PS). Dietary phytosterols may play a substantial role in cutting the risk of several types of cancer.

Your doctor at Hickory Chiropractic Clinic teaches patients that this fruit's squishy green flesh houses vast amounts of the phytosterol beta-sitosterol. In fact, avocados contain more than four times the beta-sitosterol found in other fruits, such as bananas, apples, cantaloupes, grapes, plums and cherries.

Scientific evidence suggests that phytosterols, such as beta-sitosterol, fight off prostate cancer (*Nutr Cancer* 1999;33:20-5) and lung cancer (*JAMA* 2005;294:1493-504).

Research also reveals that beta-sitosterol protects against breast cancer by inhibiting tumor growth and metastasis. In one study, researchers found beta-sitosterol inhibited breast cancer cell growth by a whopping 70 percent.



As part of the experiment, researchers investigated the effects of phytosterols on particular steps in the metastatic process. The results showed that beta-sitosterol is a true pink ribbon winner. "It is concluded that, among PS, beta-sitosterol may offer protection from breast cancer metastasis." (*Nutr Cancer* 2001;40:157-64.)

Enhance Vitamin Intake

Adding avocado to your salad, salsa or sandwich not only boosts flavor, it also bolsters vitamin consumption. Why? Research shows that avocados enhance carotenoid absorption.

Carotenoids are vital nutrients found in fruits and vegetables, which prevent disease. For instance, a diet rich in the carotenoid lycopene is linked with a reduced risk of prostate cancer and other forms of cancer, while the carotenoid lutein appears to fend off a variety of age-related maladies. Alpha- and beta-carotenoids are also potent disease-busting antioxidants.

However, your doctor at Hickory Chiropractic Clinic wants you to be aware that most carotenoid-rich produce is low in lipids that help the body process vitamins. Dietary lipids, such as those found in avocado, appear to heighten carotenoid bioavailability.

Researchers enrolled 11 healthy subjects into two studies, in which they

ate salsa and salads with and without avocado. Adding 150 g of avocado to salsa enhanced lycopene absorption 4.4 times and beta-carotene by 2.6 times, compared with avocado-free salsa.

Similarly, when 150 g avocado or 24 g avocado oil was added to the salad, alpha-carotene absorption increased by 7.2 times, beta-carotene by 15.3 times and lutein by 5.1, compared to avocado-free salad. The same results were achieved with half less: 75 g avocado or 12 g avocado oil produced the same effect.

"In conclusion, adding avocado fruit can significantly enhance carotenoid absorption from salad and salsa, which is attributed primarily to the lipids present in avocado." (*J Nutr* 2005;135:431-6.)

Fat Facts 101

But aren't avocados high in fat, you may be wondering? Not all fat is created equal. Avocados contain monounsaturated fat. When substituted for other fats, monounsaturated fats lower heart disease risks by reducing total and low-density lipoprotein (LDL or "bad") cholesterol. Foods high in monounsaturated fat include olive, peanut and canola oils, most nuts and — you guessed it — avocados.

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The body also needs healthy fats, such as monounsaturated fats, to function properly. Healthy fats help maintain hair and skin, and protect vital organs. Among many other functions, they produce hormone-like compounds to regulate blood pressure, heart rate, blood vessel constriction, blood clotting and the nervous system.

On the other hand, saturated and trans fats are harmful. They increase risk of heart disease by increasing total and LDL cholesterol. Saturated fat is most often found in animal products — such as red meat, poultry, butter and whole milk. Trans fat is a common ingredient in commercial baked goods — such as crackers, cookies and cakes — and in fried foods such as doughnuts and french fries.

Cut Cholesterol

In the Mayan culture the avocado held mystical and magical powers. We now know that, when it comes to reducing cholesterol, avocados may indeed work magic. Research shows that substituting avocado for other fats significantly reduces total cholesterol.

Over three months, 13 patients with high cholesterol ate three different vegetarian diets (one diet per month). Diet one consisted of 70 percent carbohydrates, 10 percent proteins and 20 percent lipids. None of the lipid sources was from avocado. Diet two contained 60 percent carbohydrates, 10 percent proteins and 30 percent lipids, 75 percent of which was from avocado. The third traditional vegetarian diet contained less protein, more carbohydrates and was avocado-free.

After each month, the researchers evaluated subjects' body weight, body mass index, total cholesterol (TC), high (HDL or "good") and low-density lipoprotein (LDL or "bad") cholesterol and triglycerides (TG).

Only the avocado diet produced a significant decrease in LDL. The avocado-free vegetarian diet in the first month didn't change TC or LDL, and the avocado-free diet in the third month increased both slightly. All

three diets reduced HDL levels. The three diets reduced TG levels, but only the avocado diet did so significantly (*Arch Med Res* 1997;28:537-41).

Diminish Diabetes

Research shows that diets rich in monounsaturated fats, such as avocados, may alleviate diabetes.

In one study, 12 patients with diabetes ate one of two diets: one rich in monounsaturated fats obtained from avocado and olive oil or a second diet rich in complex carbohydrates.

During a four-week preliminary period, all patients ate a low-calorie diet recommended by the American Diabetes Association. After this period, the participants were randomly assigned to the two diets alternatively during two, four-week periods. There also was a one-month "washout period" in between the two experimental diets, during which time the patients again followed the American Diabetes Association diet.

The avocado and olive oil diet slashed plasma triglycerides by 20 percent. On the other hand, the diet rich in complex carbohydrates produced a mere seven percent decline.

"Partial replacement of complex digestible carbohydrates with monounsaturated fatty acids (avocado as one of its main sources) in the diet of patients with non-insulin-dependent diabetes mellitus improves the lipid profile favorably, maintains an adequate glycemic control, and offers a good management alternative." (*Diabetes Care* 1994;17:311-5.)

Winning Weight Loss

Here's more support for the "healthy fat" contained in avocados: It seems that the green fruit may assist weight loss. These findings are from a detailed report of 61 obese patients (13 men and 48 women) who ate either an avocado-free or avocado-rich diet.

For six weeks, both groups ate a low-calorie diet, consisting of 30 percent fat, 55 percent carbohydrates and 15

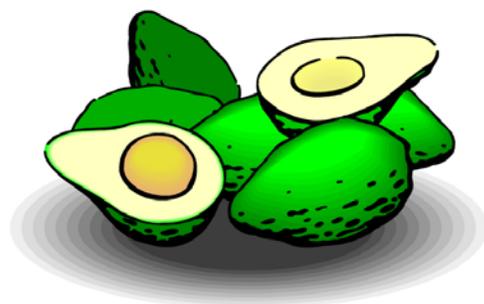
percent protein. The experimental group substituted 30 g of mixed dietary fats, such as margarine or oil, for 200 g per day of avocado.

Both groups lost a significant — and almost identical — amount of weight and body fat. Cholesterol levels and blood pressure did not change significantly within or between groups.

"The consumption of 200 g/d of avocado within an energy-restricted diet does not compromise weight loss when substituted for 30 g of mixed dietary fat. Serum lipid concentrations, plasma fibrinogen, arterial compliance, and systolic and diastolic blood pressures were not affected by weight loss or avocado intake." (*Nutrition* 2005;21:67-75.)

Balance is Key

While it's true that avocados may promote optimal health, a healthy diet also consists of a balance of low-fat sources of protein, fruits and vegetables and whole-grains. So, don't overdo it with avocados — just look for creative ways to incorporate a modest amount into a nutritious diet.



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