



ALIVE!

SPINACH

SPINACH IS AN EXTREMELY nutrient-packed vegetable.

Its tender leaves and mild flavor have made it a versatile food. Interestingly, the cooler the temperatures and the more stress the spinach experiences while growing, the denser the vitamins and minerals it contains. Unfortunately, even though spinach is probably one of the most commonly consumed dark green leafy vegetables, the average American (myself included) does not get anywhere near the three cups a day of green leafy vegetables that Dr. Terry Wahls consumed to address her multiple sclerosis. Her testimony is quite provocative, as she shares how, with the aid of dramatic dietary intervention, she went from being wheelchair bound to riding bikes and running. After reaping such results, Dr. Wahls is motivated to eat her greens. What would motivate you to eat more green leafy vegetables?

CANCER FIGHTER

Rather than saying that green vegetables prevent cancer, science likes to identify individual substances that have proven efficacy in the lab. Spinach contains chlorophyll; chlorophyllin, a substance produced from chlorophyll; NOG (N-oxalylglycine); and MGDG, among others substances, which have been found to have various anticancer actions. These actions include reducing carcinogen activity, blocking colon cancer cell multiplication, intercepting tumor growth, and inhibiting cancer initiation and progression. NOG has

been found to play a key role in regulating the expression of genes. Because of its role in gene expression, researchers view this substance as having potential therapeutic value when it comes to fighting cancer.

DIABETES DEFIER

Spinach contains nitrates, which have been demonstrated to reverse insulin resistance when consumed. Mice were fed a high-fat and high-fructose diet with and without spinach-derived nitrates. The high-fat and high-fructose diet was used to cause insulin resistance, endothelial dysfunction, and inflammation in the mice. The researchers compared the impact of spinach nitrates on insulin resistance, markers of endothelial function, blood lipids (such as triglycerides and cholesterol), and inflammation in the mice. Amazingly, all these parameters improved in the mice that were given the spinach-derived nitrates. The cells lining the blood vessels became healthier. Triglycerides (blood fat), total cholesterol, and LDL cholesterol levels were reduced. HDL cholesterol levels improved as well. The spinach nitrates also decreased blood markers of inflammation, such as CRP (C-reactive protein), tumor necrosis factor- α , and interleukin-6 levels that had been elevated. That is a pretty impressive accomplishment for one element found in a green leafy vegetable.

HYPERTENSION

Consuming nitrate-rich vegetables increases nitric oxide (NO) inside the blood vessels. The NO released by the cells lining the blood vessels signals the blood vessels to relax. Studies

have been conducted where beet juice was used as a concentrated source of nitrate. Beet juice and cooked beets were given to 24 individuals with hypertension. Both beet juice and cooked beets were effective in improving blood pressure, endothelial function, and systemic inflammation. The raw beetroot juice had greater antihypertensive effects. For hypertensive patients, one half cup of beet juice was found to be an effective dose. Arugula, another leafy green, tops the charts in terms of being a nitrate source. Like spinach, arugula is delicious raw or cooked.

Mice who drank nitrate-laced water developed stronger muscles than a non-nitrate-supplemented control group.

STRENGTHENING SEXUALITY

In a random study of American males ages 40-70, more than 50 percent indicated that they had some form of erectile dysfunction. This could be related to the reality that tobacco and alcohol, rather than green leafy vegetables, are advertised as sexy. While alcohol reduces testosterone levels and can ultimately lead to impotence, green leafy vegetables increase nitric oxide levels in the blood, which ensures that men retain optimal function. Viagra's efficacy to treat impotence and sexual dysfunction is dependent on its ability to manipulate nitric oxide.

Chewing spinach and other green leafy vegetables is more effective in producing nitric oxide than drinking them in a smoothie or juice form. The benefit we derive from food has much to do with the length of time it stays in the mouth.

APPETITE SUPPRESSOR

Thylakoids are a chemical in spinach and other green leafy vegetables. After giving five grams of spinach leaf extract to volunteers, researchers measured satiety (post-meal satisfaction) and compared the ratings to a placebo group. Those who took the extract had increased satiety two hours later. The spinach extract is thought to promote the release of hormones that help us feel that we are full while increasing others hormones that regulate appetite suppression and food cravings.

Thylakoids have also been found to lessen body fat accumulation and lower blood lipids in humans and rodents. Animals who consumed thylakoids had reduced body fat mass deposition and reduced liver fat accumulation compared to control groups. Fat cell size decreased, which increased fat usage as a source of fuel.

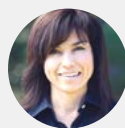
MUSCLE BUILDER

It turns out that E. C. Segar, creator of Popeye, was right after all. Spinach really does build muscle. Mice who drank nitrate-laced water developed stronger muscles than a non-nitrate-supplemented control group. Muscle fibers used for high intensity workouts were impacted positively in the mice that drank the nitrate-laced water. Nitrate consumption increases two proteins that pertain to muscle action and was found to improve the force of muscle contraction. Turns out that two cups of sautéed spinach will do the trick, just what we might find in the can Popeye used to swallow.

BRAIN BOOSTER

Research targeted at mental health suggests that eating more green leafy vegetables slows cognitive decline. Vitamin K is believed to be the beneficial substance. For five years, 950 elderly individuals were followed. It was found that those who consumed the most green leafy vegetables had the most significant decrease in the rate of cognitive decline. Consuming just one to two servings per day resulted in the cognitive ability of a person 11 years younger than those who consumed none.

Anyone hungry for spinach or any other green leafy vegetable? I hope so. 🌱



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Risë is a Registered Dietitian Nutritionist. Her understanding of how significantly diet and lifestyle impact one's health and happiness fuels her passion to help, educate, and inspire others.