Yesterday, a 30-year-old woman visited her doctor for her annual physical. Instead of exchanging pleasantries about life and the kids this year, her doctor informed her that she suffers from high cholesterol and thus is at risk of developing heart disease.

With a strong family history of heart disease, the physician recommended the traditional cocktail of a low-fat diet and a statin, a group of pharmaceutical drugs that lower cholesterol. Aware of the potential side effects of statin drugs, which include gastrointestinal upset, liver enzyme disruption, and neuromuscular disorders, she left the doctor's office in search of an alternative.

There are over 286 risk factors for heart disease. Cholesterol is just one. However, in North America, cholesterol is the most commonly observed risk factor. Luckily, the solution to our cholesterol problem is hiding in the plants we eat.

**Plant cholesterol**

Plants contain a compound that is chemically similar to cholesterol, called plant sterol, which is part of the plant cell membranes. The most abundant plant sterol is beta-sitosterol, followed by campesterol, stigmasterol, and brassicasterol respectively.

Plant sterols may look like cholesterol; however, they do not have any destructive effects on health. In fact, plant sterols have been found to help improve the health of the heart, prostate, and the immune system.

**How plant sterols work**

Plant sterols have cholesterol-lowering properties. They appear to inhibit the absorption of dietary cholesterol. Beta-sitosterol inhibits intestinal absorption of cholesterol by competing for the limited space in mixed micelles (small fat clusters formed by bile in our gut to ease absorption). According to a study published in the *British Medical Journal* (March 2000), beta-sitosterol can decrease cholesterol absorption in the gut by about 50 percent.

There is convincing research showing that plant sterols effectively lower total cholesterol. In fact, plant sterols have been shown to reduce total cholesterol levels by anywhere from 10 to 15 percent. Cholesterol is measured with a simple fasting blood test. A cholesterol level of 200 mg/dL is considered normal, while 240 mg/dL is high and usually warrants the use of statin drugs. Thus, according to the research above, a high total cholesterol level of 240 mg/dL could be lowered with plant sterols to a more normal range.

**Supplementing with plant sterols**

Plant sterols are present in our diets; however, dietary levels are typically too low to counteract the high cholesterol levels created by the North American lifestyle. Plant sterols have been added to margarines, oils, and spreads that are
Prostate protection

Plant sterols may be helpful for maintaining a healthy prostate. Oral supplementation with beta-sitosterol has been found to significantly improve urinary symptoms of benign prostatic hyperplasia (BPH). In animal research studies, beta-sitosterol reduces prostate size by inhibiting growth factors; however, this has not yet been observed in humans. For BPH and prostatitis, the above effects have been noted with dosages of 60 to 130 mg of beta-sitosterol divided into 2-3 doses daily.

Immune enhancement

There is some preliminary evidence that the plant sterol beta-sitosterol may improve the immune response by increasing T-cell proliferation. T cells send out cytokines, or messengers, to stimulate an immune response to an invader. Plant sterols may be useful in the fight against cancer, for HIV patients, and in the reduction of inflammation in athletes.

currently available in European and US markets. In Canada, however, plant sterols are only available in supplemental form, commonly as beta-sitosterol.

Plant sterol supplements have been safely used in clinical trials for up to 18 months. A typical dosage is 800 mg before meals, and it is taken in conjunction with a low-fat diet. However, there is one caution: Plant sterols may lower serum levels of fat-soluble vitamins A and E and lycopene, probably by interfering with their absorption. Because of this possible interaction, dietary precautions should be taken to ensure consumption of sufficient levels of these nutrients.

Plant sterols host a cluster of healthy benefits. Today, the 30-year-old woman is happy to discover that by adding this helpful plant cholesterol and making healthy lifestyle changes to her diet and exercise routine, her next visit to the doctor may again include pleasantries about life and the kids! a

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