The Harvard Women’s Health Watch is committed to helping women uncover helpful information for staying healthy. This report discusses ways foods can help lower cholesterol and even fight cancer. You’ll discover the most important nutrient for controlling blood pressure and which super food has a possible link to cancer in some women. We hope this information is useful to you and to the other women in your life.

The Best Cholesterol-Lowering Food: Cruciferous Vegetables

When it comes to cholesterol-lowering food, you can’t go wrong with cruciferous vegetables of the Brassica family. Broccoli, cabbage, kale, cauliflower, and Brussel’s sprouts contain many valuable nutrients for the human body, and even fight cancer and heart disease.

What makes cruciferous vegetables so powerful?

Cruciferous vegetables are high in fiber, which is known to help fight high cholesterol. They are also high in polyphenols, which have many disease-fighting properties: They fight inflammation, lower blood sugar, have anti-cancer properties, and help to lower cholesterol markers. There are over 40 phenolic compounds identified in the cruciferous vegetables of the Brassica family, which make them a potent source of these valuable compounds.

The ability of cruciferous vegetables to bind to bile acids is also important. The liver produces bile, which is stored by the gallbladder. When we eat, this bile is released by the gallbladder to emulsify, digest, and absorb fats. Cruciferous vegetables efficiently bind to bile acids, causing them to be excreted by the body instead of being reabsorbed. The body must then use cholesterol stores to replace the lost bile acids, resulting in a decrease in cholesterol levels.

The red coloration of many cruciferous vegetables is also significant. Anthocyanins are compounds that cause the red and purple coloring of many kales, cabbage, and other cruciferous vegetables. A study found that when an extract from red cabbage rich in anthocyanin was administered to rats, it reduced cholesterol levels, even when the rats were fed high-cholesterol diets.

Research shows cholesterol reduction.

Many studies have shown that eating foods from the Brassica family helps to significantly lower cholesterol levels in both healthy subjects and patients with high cholesterol. One study found that healthy volunteers given a beverage of mixed green vegetable and fruit two times a day for three weeks showed a significant decrease in LDL (the bad cholesterol) levels. The green drink was made primarily of broccoli and cabbage. A follow-up study found that patients with high cholesterol saw a reduction in LDL levels after drinking the test beverage for 12 weeks. Another study found that supplementation with kale juice in men with high cholesterol led to a 10% reduction in LDL cholesterol levels.
Whether you like green drinks, prefer raw veggies, or make broccoli for dinner, incorporating more cruciferous vegetables into your diet is a simple way to fight high cholesterol. Try making a habit of using these veggies on a daily basis to experience the benefits of cruciferous vegetables.

Check out a recipe for quick and easy kale chips to get started. Or try delicious roasted broccoli (recipe below). Roasting broccoli enhances its sweetness and gives it a pleasing texture.

Roasted Broccoli

**Ingredients:**

- 2 bunches of fresh broccoli
- 4 T olive oil (or enough to coat the broccoli)
- Salt and pepper
- 4 peeled garlic cloves or diced garlic
- ¼ C dairy or vegan Parmesan cheese

**Directions:**

Preheat the oven to 425. Cut the broccoli into florets. Make sure they are thoroughly dry after washing. Toss with the broccoli with the oil, salt, pepper and garlic. Roast for 20 to 25 minutes. When it’s done, it will be crispy on the tips of the florets. Squeeze lemon juice over the top and sprinkle with cheese.

**What Foods Lower Blood Pressure? Polyphenol-Rich Ones**

One of the best ways to lower your blood pressure is to look at your diet first. But this isn’t about taking things away; you can also eat more of the things that help lower blood pressure.

What foods lower blood pressure? One important group is those that contain polyphenols—such as berries.

Polyphenols are a large, diverse family of phytochemicals (chemicals in plants). Polyphenols’ benefits to health are numerous and are particularly profound in terms of cardiovascular health. Like vitamins and minerals, we take in polyphenols through our diets (or from supplements). Unlike essential vitamins and minerals, however, polyphenols do not cause classical deficiencies; rather, they are needed to achieve a full lifespan by reducing the risk of a range of chronic diseases, including hypertension.

*Polyphenols’ benefits come from their antioxidant, anti-inflammatory, and blood vessel dilating properties.*
Scientists used to believe polyphenols’ benefits came from their potent antioxidant properties: polyphenols are powerful antioxidants and the most abundant antioxidants in our diet. But newer research shows they improve health in many ways in addition to acting as antioxidants to decrease oxidative stress. For example, they have the ability to improve blood vessel function and dilate blood vessels, alter the immune system, and decrease inflammation.

Eating a diet that includes plenty of polyphenols benefits cardiovascular health and helps treat hypertension.

People who consume the most polyphenols as part of their regular diet have been shown to have the lowest blood pressure. In fact, of all aspects of diet, the overall amount of polyphenols the diet contains seems to be the most important in terms of blood pressure control. All fruits and vegetables contain polyphenols, but certain plant foods, such as berries, cocoa, tea, pomegranate, olives, and grapes, contain especially high amounts of polyphenols. People who regularly consume these foods as part of their diets tend to fare best when it comes to cardiovascular health.

Food rich in anthocyanins, specific types of flavonoid polyphenols, benefits high blood pressure the most.

Of the many types of polyphenols, flavonoids, in particular, have been shown to lower blood pressure and exert other actions in the body that help protect the heart and blood vessels from disease. But it gets even more specific than that. Certain berries contain a specific type of flavonoid, called anthocyanins, that researchers from Harvard Medical School discovered are highly beneficial for hypertension. Anthocyanins are the pigments responsible for the red, purple, and blue color of many berries.

The Harvard researchers found that anthocyanins were the primary flavonoid associated with polyphenols’ benefits to blood pressure. Increased intake of anthocyanins—mainly from blueberries and strawberries—reduced the risk of hypertension of up to 12 percent. The investigators followed 133,914 women and 23,043 men for an average of fourteen years, calculating intakes of various classes of flavonoids using food frequency questionnaires performed every four years. The highest average intakes of anthocyanins (from 16.2 to 21.0 milligrams per day) were associated with an 8 percent decrease in the risk of hypertension in all subjects and a 12 percent reduction in risk for people over the age of 60, compared with the lowest average intakes, which ranged from 5.7 to 6.8.

Even if just once a week, consuming blueberries’ polyphenols benefits blood pressure.

Just one serving of blueberries per week significantly reduced the risk of high blood pressure by 10 percent in those over 60 compared with people in the same age group consuming no blueberries. In addition to blueberries, anthocyanins are present in other commonly consumed fruits and berries, such as cranberries, blackberries, and strawberries. Blood oranges and black cur-
rant also contain very high levels of anthocyanins, according to the researchers. *Hibiscus tea also lowers blood pressure due to anthocyanin content.*

Another way to get polyphenols’ benefits on blood pressure is to drink hibiscus tea. Hibiscus is high in anthocyanins in randomized controlled trials, the daily consumption of a hibiscus tea or extract produced from the deep magenta-colored calyces (sepals) of the Hibiscus sabdariffa flower significantly lowered blood pressure in adults with pre- to moderate hypertension. In another study, hibiscus tea was as effective at lowering blood pressure as the commonly used blood pressure medication captopril, but less effective than lisinopril.

*How to take advantage of dietary polyphenols’ benefits for lowering blood pressure.*

Berries freeze well and can be enjoyed all year long in smoothies, in yogurt, and in salads. The internet is a great resource for hot or iced hibiscus tea recipes. And don’t forget to indulge in polyphenol-rich exotic spices, pomegranate juice, and dark chocolate for your heart health, either.

**Should You Be Concerned About Flaxseed?**

Despite the evidence that flaxseeds are a powerful superfood, they may be dangerous for certain people.

For many people, flaxseed is a powerful “superfood.” But some experts have suggested that certain people, particularly women who have a history of certain cancers or are considered high risk for developing hormone-related tumors, should avoid them.

**Phytoestrogens**

Flaxseeds contain phytoestrogens, plant chemicals that actually mimic estrogen in the body. However, not all phytoestrogens are the same. There are two major types of phytoestrogens: isoflavones and lignans. Lignans are the phytoestrogens found in the fiber portion of flaxseeds.

Because of the estrogen-like activity of lignans in flaxseeds, scientists aren’t sure whether they’re harmful or helpful for preventing such hormonal cancers as breast cancer. This is because phytoestrogens act like estrogen and may affect the production and/or breakdown of estrogen by the body, and they affect the levels of estrogen carried in the bloodstream.

On the contrary, some research has demonstrated that phytoestrogens don’t mimic estrogen at all. Rather they block estrogen and can even prevent the formation of blood vessels to tumors.

So, do phytoestrogens cause cancer or not? The answer depends on the type of cancer you’re dealing with.
Many epidemiological studies have been performed to determine whether phytoestrogens raise or lower the risk of developing breast, ovarian, and uterine cancers, since these types of cancers are typically estrogen-driven. Overall results of these studies have been inconclusive. Some research found a decrease in risk with higher phytoestrogen intake, while other research suggests that for certain people, the risks of consuming these “fake” estrogens may outweigh the benefits.

**Who Should Avoid Flaxseeds?**

If you or your loved one has a history of any of the following conditions, then substitute fish oil in place of flax to get your daily dosage of healthy omega-3 fatty acids.

Women who have a history of breast, ovarian, or uterine cancer, especially estrogen-receptive breast cancer. In addition to their ability to mimic estrogen, phytoestrogens have been shown to cause growth of breast tissue in animals and healthy women, so they are not recommended for breast cancer survivors.

Women who have a BRCA1 or BRCA2 gene defect. Women with one of these defects have up to an 80 percent chance of getting breast cancer sometime during their life; therefore, these women should avoid phytoestrogens including flaxseeds and soy.

Women with a history of endometriosis or polycystic ovarian syndrome. Again, these are hormonal-driven conditions, so phytoestrogens are not recommended.

Women who are taking birth control pills or any type of hormone replacement therapy. Both birth control pills and HRT contain estrogen, so phytoestrogens might disrupt or amplify the effect of the estrogen.

Women who are pregnant or breastfeeding. Pregnant or breastfeeding women should not consume substantial amounts of flaxseeds on a regular basis. In fact, in animal studies, the phytoestrogens in flaxseeds have been shown to cause developmental abnormalities and have been linked to an increase in susceptibility of cancer in offspring.

Infants and young children. Phytoestrogens are not recommended for young children; use fish oil in place of flax.

Adolescent girls and young women under 30. Adolescent girls and young women under 30 can consume flax on a limited basis (one to two times per week), but should not have flax daily.