

# Why You Should Always Use Organic Red Onions

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## STORY AT-A-GLANCE

- › Research reveals that comparing the nutrition in five different onions, red or purple onions offer far more protection in terms for disease prevention, as several properties they contain kill three to four times more cancer cells
- › Flavonols, anthocyanins and allicin are three of the most powerful compounds in onions, but while they're naturally high in all allium veggies, including shallots, garlic and leeks, red onions contain the most
- › Studies dispute earlier findings of there being no nutritional difference between organic and conventionally grown onions – Antioxidant activity was greater in organic red onion varieties, and the flavonols were as much as 20% higher

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Have you ever sat in a restaurant and smelled the tantalizing sizzle of sautéed onions moving past to another table? You may wonder why you didn't order the same thing, and resolve to get out some [onions](#) and other veggies for your next evening's meal.

But did you know there's a [difference between all the onion varieties in the way they impact your health](#)? Besides the fact that both red and white onions are a low-glycemic food,<sup>1</sup> a study has determined that red onions are superior in many ways, one of the most important being the dramatic influence they had on study participants' cancer risk.

It also turns out that, among five onion varieties, red onions kill between three and four times more cancer cells than the yellow and white ones.

The Canadian study,<sup>2</sup> no doubt prompted at least in part because cancer is that country's leading cause of death, noted that the high levels of **flavonoids**, specifically quercetin, myricetin and kaempferol, in the five onion types were shown to "exert potential anticancer activities." Further:

*"All onion varieties exhibited antiproliferative activity similar to purified flavonoids. The cytotoxic effects of the Stanley and Fortress onion varieties were strongest among the selected cultivars."*<sup>3</sup>

What other nutritional benefits do red onions have compared to white onions? Besides being milder, one advantage is antioxidant activity, which is one reason they have a greater ability to protect against cancer.

One study<sup>4</sup> lists stomach, colorectal, oral, laryngeal, esophageal and ovarian cancers as being types the properties in red onions help reduce. In fact, **stomach cancer** risk was cut in half. While both red and white onions help to thin your blood, red onions are better at it due to their rich flavonoid presence.

One more bit of wisdom – the outside skins of onions contain the highest nutrients. If you should remove the two outermost layers, you'd also be removing 75% of the anthocyanin content, which you do not want to do. Scientists suggest eating at least one red onion per week to get the most nutritional benefit. There are numerous delicious ways to do this – cut them up in cold salads or toss them into your sautéed veggies.

## **More From the Canadian Onion Study**

To test the capabilities of the different onion cultivars, the researchers utilized a newly developed technique to extract quercetin and other compounds, then placed them in direct contact with human colorectal cancer cells.

All five onion species were deemed "excellent" at exterminating the cells, according to co-author Suresh Neethirajan, Ph.D., associate professor at Dalhousie University. However, it was the Ruby Ring, a red onion variety, that contained the highest total phenolic content, natural compounds produced by plants.

The onions used in the study that had the highest concentrations of quercetin compared to other onion varieties from around the world happened to be grown in Ontario, but the authors of the study say it's likely that the same findings would take place if the same type of red onions were grown elsewhere. Funding for the study came from the Natural Sciences and Engineering Research Council of Canada and the Ontario Ministry of Agriculture, Food and Rural Affairs.

The scientists who used the quercetin-extraction technique, involving heated water in a pressurized container, say they hope their work will soon lead other scientists to use this or similar methods for quercetin extraction. Stressing that the technique did not utilize toxic solvents or chemicals like other methods use for this purpose, they also hope quercetin from red onions "will one day be added to a variety of fortified foods and even medicines."

However, rather than waiting for that day, you can extract the same healing compounds by eating them whole. Studies like this one are helpful because, when you're getting ready to make a large green salad with all the good greens and other veggies, you'll know which type to put in your shopping cart, or better yet, which onion seeds or bulbs to plant in your garden.

## **Quercetin, Anthocyanins and Other Disease-Fighting Compounds**

A plethora of studies have already determined that quercetin can help lower heart disease, diabetes, atherosclerosis and high blood pressure risks. It can also help reduce the rate at which cancer cells grow, particularly ovarian, prostate, endometrial, breast, colon and lung tumors. If you're an onion lover, you'll be happy to know that red onions provide 25% of the flavonols you need per day, according to a chart produced by the U.S. Department of Agriculture (USDA).<sup>5</sup>

A study notes<sup>6</sup> that onions contain about 25 different anthocyanins. This is the plant pigment that supports the onion's free radical-scavenging activities. Free radicals are partial molecules responsible for inflammation leading to other health damaging

conditions, as they steal electrons from many of your body's proteins, damage your DNA and cause numerous aspects of other serious disease.

Anthocyanins are the compounds responsible for the dark red, purple and blue colors in fruits and vegetables. In fact, they are so powerful that many scientists recommend eating dark-hued vegetables – red cabbage, [purple grapes](#), blackberries, kale, strawberries, blueberries and beets, for example – for this very reason; they contain more of this compound. As an article in Time explains:

*"The researchers recently found that onions are effective at killing breast cancer cells, as well. They say that onions appear to disrupt communication between cancer cells and promote an unfavorable environment for their growth, encouraging them to die. The next step, they add, will be testing these theories in human trials."<sup>7</sup>*

Allicin is another compound found in members of the allium family, which includes onions, leeks, shallots, [scallions](#) and the herbs [garlic](#) and chives. When they're cut or crushed, the allicin produced has also been found to be heart-protective, to lower blood pressure, and both prevent and treat cancer.

## **Organically Grown Onions: Are They More Nutritious?**

In 2013, a huge group of studies – more than 200, actually – were scrutinized to see if organically grown foods had any more to offer compared to those produced conventionally. Many scientists ultimately concluded they were not. Others begged to differ.

Since then, further reviews have determined just the opposite. In the longest-running study ever on the issue, organic foods were found to contain more health-benefiting phytochemicals, and that flavonoid levels and antioxidant activity in organic onions are higher than in conventional onions. According to Science Daily:<sup>8</sup>

*"The authors propose that the conflicting results from previous research on organic and conventional crops' phytochemical content could be a function of*

*short study periods and the exclusion of variables such as weather ... Over the six-year study, measurements confirmed that weather could be a factor in flavonoid content, regardless of whether they were grown under organic conditions."*

Experts determined that flavonols from the Red Baron onion decreased in 2010 when temperatures were lowest, and increased in both 2011 and 2014 when the climate had both higher temperatures and lower moisture. Researchers reported that antioxidant activity was higher in Red Baron and Hyskin organic onion varieties, and the flavonols were as much as 20% higher in the organic veggies.

Naturally, it's good to know what other nutritional benefits come from red onions. Heal With Food<sup>9</sup> says that just half of a red onion has antibacterial, antifungal and anti-inflammatory properties that can help prevent several disorders and diseases, many of them related, such as:

- Prevention and control of intestinal polyp formation
- Inhibiting the rhinoviruses that cause the common cold
- Treating psoriasis
- Slowing the replication of such viruses as the herpes simplex virus that leads to cold sores
- Reducing the risk of stomach cancer by 50%

## **In Case You're Looking for More**

Chromium, a trace mineral, is yet another compound contained in onions that is able to control glucose levels, Heal With Food<sup>10</sup> says.

*"This is great news for those who suffer from insulin resistance as chromium is an essential for insulin activity in carbohydrate, fat and protein metabolism. A lack of chromium-rich foods, such as onions, in diet may lead to insulin*

*resistance and impaired blood sugar control and may increase the risk of cardiovascular disease and type 2 diabetes.*

*Furthermore, there is some evidence suggesting that severe chromium deficiency may make weight loss more difficult or even cause weight gain."*

Fiber is a very important component to your diet, and onions don't disappoint. While you need both **soluble and insoluble fiber**, and most foods provide both, red (or purple) onions contain more soluble than insoluble fiber. [Week&](#) has a good explanation for why it's so important:

*"Soluble fiber attracts fluid in your gut, creating a slow-moving gel. This slows digestion, which allows vitamins and minerals to absorb through intestinal walls. Insoluble fiber from the skins of onions sweeps out your gut like a broom and helps you have regular bowel movements.*

*According to the Colorado State University Extension, you need 14 grams of dietary fiber for every 1,000 calories you consume. Based on a 2,000-calorie diet, you need 28 grams of daily fiber. Purple onions offer about 1.5 grams per 1/2-cup raw serving."<sup>11</sup>*

Minimal heating keeps most of the healthy compounds in onions, but the more they're heated, the more of the nutrition they lose. The George Mateljan Foundation,<sup>12</sup> dedicated to the healthiest ways to cook and eat, says that sautéing or steaming onions, the most recommended methods, follow three basic guidelines from the annals of food science research in terms of retaining the most nutrients possible, and they're very simple and straightforward:

- Minimal heat exposure
- Minimal cooking duration
- Minimal contact with cooking liquid

One more thing – vitamin C, another abundant nutrient in raw red onions, does several important jobs throughout your body. It helps wounds heal and allows for greater

elasticity, helps to build collagen and has antioxidant capabilities that expand the free radical-fighting job done by flavonoids.

Women need 75 milligrams (mg) per day, but men require 90 mg a day. Luckily, it's not a difficult task, no matter how you prepare your onions, as you get about 12 mg in a single half-cup serving.

## Sources and References

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- <sup>1</sup> Very Well Fit, "Onion Nutrition Facts and Health Benefits"
- <sup>2, 3</sup> Food Res Int. 2017 June;96:12-18
- <sup>4</sup> Cancer Prevention Research, Volume 8, Issue 3, 1 March
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- <sup>9, 10</sup> Heal With Food 2010-2017
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