

# Broccoli Sprouts Provide Greater Benefits Than Full-Grown Broccoli

Analysis by [Dr. Joseph Mercola](#)

June 04, 2024

## STORY AT-A-GLANCE

- › Cruciferous vegetables are loaded with health promoting compounds, including indolocarbazole and sulforaphane, the source of their trademark odor and one of the most powerful of nutrients in cruciferous vegetables
- › Concerns about thyroid damaging compounds in cruciferous vegetables can be avoided by eating a balanced diet
- › Sprouts pack a bigger nutritional punch than full-grown broccoli and require little room for cultivation. They can promote better health and food security
- › Other ways to safeguard your food security is to grow more of your food at home, consider keeping chickens for a steady supply of eggs and learn to preserve foods using canning and pickling, especially if you live in an area with a short growing season

**Cruciferous vegetables**, which include Brussels sprouts, cauliflower and broccoli are nutritional powerhouses. Notable for their bitter taste and slightly sulfurous smell when cooked, they are loaded with powerful nutrients and minerals.

Broccoli, in particular, is famous for being a rich source of glucosinolates, the sulfur-containing compound responsible for its smell, flavor and a myriad of health benefits<sup>1</sup> that range from cancer fighting properties to heart health.

The best health promoting nutrient in broccoli is sulforaphane. It was first identified as having chemoprotective properties in the 1990s and has been widely studied since for

its health benefits.<sup>2</sup> Broccoli sprouts contain 10 to 100 times more sulforaphane than full grown broccoli.<sup>3</sup>

## **Nutrients In Cruciferous Vegetables Spark Interest, Health Debate**

The glucosinolates that occur naturally in cruciferous vegetables react with the human enzymes during chewing to form isothiocyanates (ITC). Sulforaphane is classified as an isothiocyanate.

ITCs are the subject of considerable interest to researchers due to their anti-carcinogenic activities and ability to promote detoxification.<sup>4</sup> Unfortunately, sulforaphane is also an anti-thyroid substance or goitrogen.<sup>5</sup> Goitrogens are organosulfur compounds also found in cruciferous vegetables and are why broccoli is viewed as having a negative impact on thyroid health.

This is where the subject of cruciferous vegetable can get tricky. Boiling and blanching effectively destroys the goitrogenic properties of cruciferous vegetables but also strips them of benefits provided by ITC components like sulforaphane.

Moreover, you would have to consume pounds of raw cruciferous vegetables daily to obtain clinical levels of sulforaphane.<sup>6</sup> Both of these potential pitfalls can be avoided by switching to broccoli sprouts.<sup>7</sup>

## **How You Can Benefit From Sulforaphane**

Before reviewing the advantages of broccoli sprouts and how to grow your own, let us review just a few of the beneficial properties attributed to sulforaphane and other ITCs found in cruciferous vegetables. Sulforaphane has been widely studied and the scope of its potential benefits is remarkable. For example:

- A 2017 study<sup>8</sup> found it was effective in treating moderate to severe autism.

- The British Journal of Nutrition discovered elderly Western Australian women who ate more cruciferous vegetables had a lower risk of extensive calcium buildup in their aortas.
- A 2015 study<sup>9</sup> examined isothiocyanates (ITCs), most prominently sulforaphane and determined broccoli consumption is beneficial for the heart.
- It also boosts liver enzymes that fight cancer causing environmental toxins.<sup>10</sup>
- 2023 Frontiers in Oncology study<sup>11</sup> stated, "Sulforaphane (SFN) is one of these naturally occurring agents and studies have shown that it is able to target a specific cancer cell population displaying stem-like properties, known as cancer stem cells (CSCs)."

## **Additional Benefits of Broccoli: ICZ and Leaky Gut**

Sulforaphane has been the subject of study in 3,000 rodent studies, 50 clinical trials and countless preclinical examinations.<sup>12</sup> It is but one of the many nutrients found in cruciferous vegetables.

A recent study<sup>13</sup> found **broccoli helps heal leaky gut** and colitis. Leaky gut is a serious and underdiagnosed condition that occurs when gaps form in the membrane of your intestinal wall, which can lead to inflammation, skin disorders, food intolerances, allergic reactions and neuropsychological disorders.<sup>14</sup>

Indolocarbazole (ICZ) can boost your immune function and improve your microbiome health by binding to your gut wall and activating receptors. Like sulforaphane, it is created during the process of eating cruciferous veggies. To achieve a level necessary to address leaky gut, you would need to eat 3.5 cups of broccoli daily.

However, Brussels sprouts contain three times more ICZ, so a single cup would suffice. Broccoli sprouts are also a source of ICZ and have shown great potential for addressing gut dysfunction.<sup>15</sup>

# Optimizing Your Veggie Consumption With Broccoli Sprouts

With all these impressive studies in hand, you may wonder how much sulforaphane you should consume. The USDA recommends 2.5 to 3.5 cups of vegetables daily but do not specify recommendations for cruciferous vegetables.<sup>16</sup>

They do, however, distinguish between leafy vegetables and beans, peas and lentils.<sup>17</sup> I strongly urge you to **limit lectins**, an anti-nutrient linked to inflammation and autoimmune reactions that are found in beans, grains, legumes and members of the nightshade family.

Consuming a sufficient quantity of full-grown, raw broccoli may pose a challenge. This is just one reason why broccoli sprouts can be an indispensable component of your diet. Broccoli sprouts are far more nutrient dense and require a far smaller quantity to obtain the same levels of nutrients like ICZ and ITCs such as sulforaphane.

Studies on broccoli florets and sprouts and the impact goitrins may have on your health are also promising. Full-grown broccoli, in the form of broccoli florets, were rated as having the lowest anti-thyroid potential of any cruciferous vegetable.<sup>18</sup> According to another study,<sup>19</sup> "In animals with hypothyroidism, broccoli sprouts were found to exert a beneficial influence on the antioxidant balance of the thyroid gland."

The National Academy of Sciences researchers also concluded<sup>20</sup> that "Small quantities of crucifer sprouts may protect against the risk of cancer as effectively as much larger quantities of mature vegetables of the same variety."

## Growing a Broccoli Sprout Garden

I encourage everyone to **grow their own food**. It does not take much space to grow broccoli sprouts and they pack a huge nutritional punch. They also can be cultivated indoors throughout the year. Compared to mature broccoli, you can grow sprouts more quickly and they have more concentrated nutrients, phytochemicals, antioxidants and fewer antinutrients.

You may be surprised to learn that the turnaround time for growing broccoli sprouts is not much more than a week. Sprouts are among the easiest and least labor-intensive options. For a step-by-step guide on how to grow sunflower sprouts, see the video above. These same techniques can be applied to other sprouted seeds.

Once you identify a suitable space and acquire your sprouting seeds, you are just days away from having a supply of broccoli sprouts. Here is a step-by-step guide to growing your sprouts.

1. Get a tray that fits your space, ceramic tiles and ballast of 5 to 10 pounds to place on the tiles while the seeds are germinating.
2. It is possible to grow sprouts in jars but soil is easier and produces more abundant food.
3. Place your seeds in a bowl that contains three times more volume of clean, cool water and soak the seeds for eight hours.
4. You can recycle the soaking water into a watering can or other container to water your other plants.
5. Rinse the seeds and leave them out of the water for 24 hours or until sprouts begin to germinate.
6. Fill your tray or growing container halfway with soil and spread the seeds evenly over the soil.
7. Water until the soil is moist but not dripping.
8. Cover the soil with ceramic tiles and 5- to 10-pound weights.
9. Remove the tiles every 24 hours to water the sprouts for two to four days, replacing the tiles between waterings.
10. Once sprouts begin to emerge and lift the tiles, remove tiles and place the tray in a sunny area.
11. Harvest sprouts after two to three more days.

# Safeguard Your Food Security Against Crop Failures and Diminished Yields

It is impossible to miss that growing food shortages and inflation are quickly becoming the norm. This hardship is not the result of failing policies but is part of the World Economic Forum's [Great Reset](#).

The world is slowly awakening to this technocratic takeover. Intentionally incompetent regulatory decisions and policies are being implemented under the guise of science. Upheaval and privatization are sure to follow. There are several steps you can take to meet your basic food needs and prepare for the likely coming shortages.

**Obtaining organic seeds** – Obtaining, storing and using non-GMO organic seeds is the first step to safeguarding your food supply. Propagating organic seeds from organically grown plants is the most sustainable solution to food insecurity. Seeking out [high-quality organic seeds](#) is a great starting point. They produce the most robust plants and healthiest food.

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**Save seeds from your best plants** – Save seed from your own best performing plants, on your land and in your own ecosystem, gradually developing varieties better adapted to your own soil, climate and growing conditions.

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**Growing food at home** – Growing as much fresh food as possible is foundational to safeguarding your food supply. Sprouts grow quickly and are packed with nutrients. They require little space and are a great starting point. Stocking up on sprouting seeds is a must.

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**Keeping chickens** – Local regulations often permit chickens, which can supply a steady stream of eggs. Keep in mind that the chickens also require feed. If you are fortunate enough to have the space to homestead, there are mobile chicken coops that allow your birds to eat free range while protecting them from predators.

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**Gardening** — Gardens can vary greatly in size. Ideally, space for an orchard would allow a diversity of crops. Whether you are supplementing your diet from a small plot or capable of full self-sufficiency.

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**Canning and pickling** — These are basic food storage skills that your grandparents or great grandparents likely mastered. In challenging times, you will certainly benefit by adopting these proven methods, which are especially important in areas with a short growing season.

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## **Prepare for Food Insecurity With Minimal Growing Space**

If you do not have sufficient land to grow your own food, consider joining a food co-op. You can also keep food on hand in the form of shelf-stable and non-perishable items. Dry staples like rice and beans last far beyond their listed expiration date. They are best stored in sealed, food grade buckets with oxygen absorbers. Freeze dried foods can last a quarter century or even more.

Whey, protein powders, and canned fish (avoid ones in vegetable oil) can add balance to your diet in times of scarcity. Vacuum sealing food is another option. For optimal storage, use a cool, dark area. You can also build a pantry if you live in a rental unit without a basement.

These actionable practices, while not without labor or expense, can provide necessary security. In the event you need to fall back on your supplies, you will be thankful for the availability of nutritionally potent and easy to grow broccoli sprouts.

## **Sources and References**

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- <sup>1</sup> [Frontiers in Pharmacology, 2021 Oct 26, Abstract](#)
- <sup>2, 12</sup> [Molecules, 2019 Oct;24\(19\):3593, Abstract](#)
- <sup>3</sup> [Foods, 2021 Aug 19, Abstract](#)
- <sup>4</sup> [Acta Pharmacologica Sinica, 2009 May, Abstract](#)
- <sup>5</sup> [Foods, 2023 Oct 2, Abstract](#)
- <sup>6</sup> [Foods, 2021 Aug 19, Introduction](#)

- <sup>7</sup> [Plants \(Basel\), 2022 Oct 11, Influence of Broccoli Sprout Extract on the Inflammation Process](#)
- <sup>8</sup> [Global Advances in Health and Medicine, 2017 October 26, Abstract](#)
- <sup>9</sup> [Oxidative Medicine and Cellular Longevity, 2015 October, Introduction](#)
- <sup>10</sup> [Science Daily, April 5, 2005](#)
- <sup>11</sup> [Frontiers in Oncology, 2023 Jan 23, Abstract](#)
- <sup>13</sup> [International Journal of Molecular Sciences, 2023 Sep, Abstract](#)
- <sup>14</sup> [International Journal of Molecular Sciences, 2023 Sep, Background to the Hypothesis – The Case for Sulforaphane](#)
- <sup>15</sup> [International Journal of Molecular Sciences, 2023 Sep, Abstract, Tight Junctions as Critical Components of the Gut Barrier](#)
- <sup>16</sup> [USDA, MyPlate, Vegetables](#)
- <sup>17</sup> [USDA, MyPlate, Beans, Peas, and Lentils](#)
- <sup>18</sup> [Plants \(Basel\), 2022 Oct 11, Introduction](#)
- <sup>19</sup> [Biomedicine & Pharmacotherapy, Jan 2018, Abstract](#)
- <sup>20</sup> [Proceedings of the National Academy of Sciences, 1997 Sep 16, Abstract](#)