

Vegetarian Nutrition

a dietetic practice group of the Academy of Nutrition and Dietetics

Experts in Plant-Based Nutrition

RDN Resources for Consumers:

Iodine in Vegetarian Diets

Iodine is an essential nutrient that is needed to make thyroid hormones. Many people, worldwide, are at risk of iodine deficiency because they live in places where there is little iodine in the soil. This means that food crops grown in these places will be low in iodine. Getting enough iodine is important for everyone, especially pregnant people and infants.

Iodine's Function

The thyroid gland regulates metabolism. Since iodine is used to make two important thyroid hormones, a lack of iodine disrupts the function of the thyroid gland. In pregnancy and in an infant's first 2 years after birth, iodine is needed for brain and nervous system development and for normal growth. Iodine is needed for a healthy metabolism throughout life.

Food Sources of Iodine

Iodine is found naturally in foods and is added to "iodized" salt. Plant foods contain variable amounts of iodine depending on how much iodine was in the soil they grew in. The use of fertilizers, the type of fertilizer used, food processing methods, and other factors also affect the iodine content of foods.

Dairy products and grains are the main food sources of iodine in the U.S. Some of the iodine in dairy products comes from supplements given to dairy cattle. Since the use and amount used of these supplements varies, the iodine content of dairy products is variable. Also, disinfectants which contain iodine may be used to clean cows and equipment and this iodine can appear in dairy products.

Plant milks like soy milk, almond milk, cashew milk, and oat milk are much lower in iodine than dairy products unless they are fortified with iodine. Very few plant milks are fortified with iodine. If iodine is added, it will be listed on the ingredient label.

Most fruits and vegetables are not especially good sources of iodine and their iodine content varies depending on soil iodine content and fertilizer use. Sea vegetables (such as kelp, nori, kombu, and wakame) contain iodine but the amount varies widely and sometimes the iodine in sea vegetables is not well absorbed. Because sea vegetables can contain a lot of iodine, frequently eating large amounts of sea vegetables could lead to iodine toxicity.

Usually our bodies absorb iodine easily. Some foods contain substances that can block the thyroid gland from taking up iodine. These substances are called goitrogens. Foods high in goitrogens include soy products, cruciferous vegetables (vegetables in the cabbage family like broccoli, cauliflower, and Brussels sprouts), sweet potatoes, and cassava. Goitrogens are usually not a problem for healthy people with an adequate intake of iodine, and who eat a variety of foods.

The table below lists the amount of iodine in some foods in micrograms (µg). Because the amount of iodine in a food varies a lot, these numbers are estimates and subject to change.

Iodized Salt

Since iodine deficiency is a common problem worldwide, the World Health Organization recommends universal salt iodization because it is a way to increase people's iodine intake. In the United States, salt iodization is voluntary. You can check the label on the salt package to see if it is iodized. One-quarter teaspoon of commercially available iodized salt provides 51% of the Daily Value or about 76 µg of iodine. Few food manufacturers or restaurants use iodized salt. Thus, even products that taste salty like frozen entrees and canned soups are not likely to supply much iodine. Kosher salt and salty seasonings such as tamari and soy sauce are not iodized. Commercial sea salt contains variable amounts of iodine. You can find iodized sea salt at the grocery store.

Iodine Supplements

Vegans and others who do not use dairy products and who limit use of iodized salt should use supplemental iodine. Studies have found poor iodine status in vegans in the U.S., the

	Serving Size	Iodine
Greek yogurt (non-fat, plain)	1 cup	116 µg
Milk (skim)	1 cup	84 µg
Iodized salt	¼ tsp	76 µg
Nori, dried	1 sheet	58 µg
Pasta, boiled in water with iodized salt	1 cup	40 µg
Soymilk	1 cup	7 µg
Spinach, boiled	1 cup	7 µg
Collards, boiled	1 cup	1.8 µg

United Kingdom, Switzerland, Finland, Norway, and Slovakia. In the United Kingdom, many lacto-ovo vegetarians also didn't get enough iodine.

The American Thyroid Association advises against the use of iodine supplements containing more than 500 µg per day unless medically indicated. Since iodine supplements interact with some medications, you should tell your doctor, pharmacist, and other healthcare providers about any supplements that you take.

How Much Iodine do I Need?

The amount of iodine you need depends on your age. The daily recommended amount is listed below in micrograms (µg).

Age	Recommended Amount
Children	
Birth-6 months	110 µg
7-12 months	130 µg
1-8 years	90 µg
9-13 years	120 µg
14-18 years	150 µg
Adults	
19+ years	150 µg
Pregnant teens and adults	220 µg
Breastfeeding teens and adults	290 µg

Pregnancy and Breastfeeding

Pregnant people need more iodine than do non-pregnant people. In pregnancy, more iodine is needed because the pregnant parent's body makes more thyroid hormones and must also have iodine to make thyroid hormones for the fetus. An inadequate iodine intake in pregnancy increases the risk of problems such as birth defects, poor development of the nervous system, stillbirth, and prematurity. Iodine is needed during breastfeeding to make sure that the milk has the iodine that the baby needs.

Because of iodine's importance in pregnancy and breastfeeding, the American Thyroid Association, the American Academy of Pediatrics, and others recommend a daily supplement providing 150 µg of iodine in the form of potassium iodide for pregnant and lactating people, as well as anyone who is planning a pregnancy in the next 3 months. Not all prenatal supplements, including those marketed to vegetarians, contain iodine. It's important to check the label of prenatal supplements to be sure that they supply iodine.

References

Institute of Medicine, Food and Nutrition Board. D*ietary Reference Intakes for Vitamin A, Vitamin K, Arsenic, Boron, Chromium, Copper, Iodine, Iron, Manganese, Molybdenum, Nickel, Silicon, Vanadium, and Zinc*. Washington, DC: National Academy Press; 2001.

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A registered dietitian nutritionist can help you develop a healthy vegetarian or vegan eating plan that meets your needs. To find an RDN in your area, visit https://findanrd.eatright.org/. RD Resources are a project of the Vegetarian Nutrition Dietetic Practice Group. More topics available at **www.VNDPG.org.**

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