

# Iodine Fact Sheet for Consumers



The use of iodized salt is the most widely used strategy to control iodine deficiency.

## What is iodine and what does it do?

Iodine is a mineral found in some foods. The body needs iodine to make thyroid hormones. These hormones control the body's metabolism and many other important functions. The body also needs thyroid hormones for proper bone and brain development during pregnancy and infancy. Getting enough iodine is important for everyone, especially infants and women who are pregnant.

## How much iodine do I need?

The amount of iodine you need each day depends on your age. Average daily recommended amounts are listed below in micrograms (mcg).

Life Stage	Recommended Amount
Birth to 6 months	110 mcg
Infants 7–12 months	130 mcg
Children 1–8 years	90 mcg
Children 9–13 years	120 mcg
Teens 14–18 years	150 mcg
Adults	150 mcg
Pregnant teens and women	220 mcg
Breastfeeding teens and women	290 mcg

## What foods provide iodine?

Iodine is found naturally in some foods and is also added to salt that is labeled as “iodized”. You can get recommended amounts of iodine by eating a variety of foods, including the following:

- Fish (such as cod and tuna), seaweed, shrimp, and other seafood, which are generally rich in iodine.
- Dairy products (such as milk, yogurt, and cheese) and products made from grains (like breads and cereals), which are the major sources of iodine in American diets.
- Fruits and vegetables, which contain iodine, although the amount depends on the iodine in the soil where they grew and in any fertilizer that was used.
- Iodized salt, which is readily available in the United States and many other countries. Processed foods, however, such as canned soups, almost never contain iodized salt.

## What kinds of iodine dietary supplements are available?

Iodine is available in dietary supplements, usually in the form of potassium iodide or sodium iodide. Many multivitamin-mineral supplements contain iodine. Dietary supplements of iodine-containing kelp (a seaweed) are also available.

## Am I getting enough iodine?

Most people in the United States get enough iodine from foods and beverages. However, certain groups of people are more likely than others to have trouble getting enough iodine:

- People who do not use iodized salt. Adding iodine to salt is the most widely used strategy to control iodine deficiency. Currently, about 70% of households worldwide use iodized salt.
- Pregnant women. Women who are pregnant need about 50% more iodine than other women to provide enough iodine for their baby. Surveys show that many pregnant women in the United States may not get quite enough iodine, although experts do not know whether this affects their babies.
- People living in regions with iodine-deficient soils who eat mostly local foods. These soils produce crops that have low iodine levels. Among the regions with the most iodine-poor soil are mountainous areas, such as the Himalayas, the Alps, and the Andes regions, as well as river valleys in South and Southeast Asia.
- People who get marginal amounts of iodine and who also eat foods containing goitrogens. Goitrogens are substances that interfere with the way the body uses iodine. They are present in some plant foods including soy, and cruciferous vegetables such as cabbage, broccoli, cauliflower and Brussels sprouts. For most people in the United States who get adequate amounts of iodine, eating reasonable amounts of foods containing goitrogens is not a concern.

### What happens if I don't get enough iodine?

Iodine deficiency is uncommon in the United States and Canada. People who don't get enough iodine cannot make sufficient amounts of thyroid hormone. This can cause many problems. In pregnant women, severe iodine deficiency can permanently harm the fetus by causing stunted growth, mental retardation, and delayed sexual development. Less severe iodine deficiency can cause lower-than-average IQ in infants and children and decrease adults' ability to work and think clearly. Goiter, an enlarged thyroid gland, is often the first visible sign of iodine deficiency.

### What are some effects of iodine on health?

Scientists are studying iodine to understand how it affects health. Here are some examples of what this research has shown.

#### Fetal and infant development

Women who are pregnant or breastfeeding need to get enough iodine for their babies to grow and develop properly. Breastfed infants get iodine from breast milk. However, the iodine content of breast milk depends on how much iodine the mother gets.

To make adequate amounts of iodine available for proper fetal and infant development, several national and international groups recommend that pregnant and breastfeeding women

and infants take iodine supplements. In the United States and Canada, the American Thyroid Association recommends that pregnant and breastfeeding women take prenatal vitamin/mineral supplements containing iodine (150 mcg/day). However, only about half the prenatal multivitamins sold in the United States contain iodine.

#### Cognitive function during childhood

Severe iodine deficiency during childhood has harmful effects on the development of the brain and nervous system. The effects of mild iodine deficiency during childhood are more difficult to measure, but mild iodine deficiency might cause subtle problems with neurological development.

Giving iodine supplements to children with mild iodine deficiency improves their reasoning abilities and overall cognitive function. In children living in iodine-deficient areas, iodine supplements seem to improve both physical and mental development. More study is needed to fully understand the effects of mild iodine deficiency and of iodine supplements on cognitive function.

#### Fibrocystic breast disease

Although not harmful, fibrocystic breast disease causes lumpy, painful breasts. It mainly affects women of reproductive age but can also occur during menopause. Very high doses of iodine supplements might reduce the pain and other symptoms of fibrocystic breast disease, but more study is necessary to confirm this. Check with your health care provider before taking iodine for this condition, especially because iodine can be unsafe at high doses.

#### Radiation-induced thyroid cancer

Nuclear accidents can release radioactive iodine into the environment, increasing the risk of thyroid cancer in people who are exposed to the radioactive iodine, especially children. People with iodine deficiency who are exposed to radioactive iodine are especially at risk of developing thyroid cancer. The U.S. Food and Drug Administration has approved potassium iodide as a thyroid-blocking agent to reduce the risk of thyroid cancer in radiation emergencies.

#### Can iodine be harmful?

Yes, if you get too much. Getting high levels of iodine can cause some of the same symptoms as iodine deficiency, including goiter (an enlarged thyroid gland). High iodine intakes can also cause thyroid gland inflammation and thyroid cancer. Getting a very large dose of iodine (several grams, for example) can cause burning of the mouth, throat, and stomach; fever; stomach pain; nausea; vomiting; diarrhea; weak pulse; and coma.

The upper limits for iodine are listed below. These levels do not apply to people who are taking iodine for medical reasons under the care of a doctor.

Life Stage	Upper Limit
Birth to 12 months	Not established
Children 1–3 years	200 mcg
Children 4–8 years	300 mcg
Children 9–13 years	600 mcg
Teens 14–18 years	900 mcg
Adults	1,100 mcg

### Are there any interactions with iodine that I should know about?

Yes. Iodine supplements can interact or interfere with medicines that you take. Here are several examples:

- Iodine supplements might interact with anti-thyroid medications such as methimazole (Tapazole®), used to treat hyperthyroidism. Taking high doses of iodine with anti-thyroid medications could cause your body to produce too little thyroid hormone.
- Taking potassium iodide with medicines for high blood pressure known as ACE inhibitors could raise the amount of potassium in your blood to an unsafe level. ACE inhibitors include benazepril (Lotensin®), lisinopril (Prinivil® and Zestril®), and fosinopril (Monopril®).
- The amount of potassium in your blood can also get too high if you take potassium iodide with potassium-sparing diuretics, such as spironolactone (Aldactone®) and amiloride (Midamor®).

Tell your doctor, pharmacist, and other health care providers about any dietary supplements and medicines you take. They can tell you if those dietary supplements might interact or interfere with your prescription or over-the-counter medicines or if the medicines might interfere with how your body absorbs, uses, or breaks down nutrients.

### Iodine and healthful eating

People should get most of their nutrients from food, advises the federal government's *Dietary Guidelines for Americans*. Foods contain vitamins, minerals, dietary fiber and other substances that benefit health. In some cases, fortified foods and dietary supplements may provide nutrients that otherwise may be consumed in less-than-recommended amounts. For more information about building a healthy diet, refer to the *Dietary Guidelines for Americans* and the U.S. Department of Agriculture's MyPlate.

### Where can I find out more about iodine?

#### For general information on iodine:

- Office of Dietary Supplements Health Professional Fact Sheet on Iodine
- Iodine and Iodine in diet, MedLinePlus®

#### For more advice on buying dietary supplements:

- Office of Dietary Supplements Frequently Asked Questions: Which brand(s) of dietary supplements should I purchase?

#### For information about building a healthy diet:

- MyPlate
- *Dietary Guidelines for Americans*

### Disclaimer

This fact sheet by the Office of Dietary Supplements provides information that should not take the place of medical advice. We encourage you to talk to your health care providers (doctor, registered dietitian, pharmacist, etc.) about your interest in, questions about, or use of dietary supplements and what may be best for your overall health. Any mention in this publication of a specific brand name is not an endorsement of the product.



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