# Iodine Deficiency FAQ



## WHAT IS THE THYROID GLAND?

The thyroid gland located in the neck produces thyroid hormones which help the body use energy, stay warm and keep the brain, heart, muscles, and other organs working normally.

## OVERVIEW

Iodine is essential for the production of thyroid hormone and must come from your diet, since the body does not make iodine. Iodine is found in various foods and is present naturally in soil and seawater. The U.S. is generally an iodine sufficient area, but many other parts of the world are considered iodine deficient. Approximately 40% of the world's population remains at risk for iodine deficiency.

## 1 SYMPTOMS

### What are the symptoms of iodine deficiency?

All of the symptoms of iodine deficiency are related to its effect on the thyroid:

- Goiter - Without adequate iodine, the thyroid progressively enlarges (develops a goiter) as it tries to keep up with demand for thyroid hormone production. Worldwide, iodine deficiency is the most common cause of a goiter (see *Goiter brochure*). Within a goiter, nodules can develop. Patients with a large goiter may experience symptoms of choking, especially when lying down, and difficulty swallowing and breathing.
- Hypothyroidism – As the body's iodine levels fall, hypothyroidism may develop, since iodine is essential for making thyroid hormone. While this is uncommon in the U.S., iodine deficiency is the most common cause of hypothyroidism worldwide (see *Hypothyroidism brochure*).
- Pregnancy-related problems - Iodine deficiency is especially important in women who are pregnant or nursing their infants. Severe iodine deficiency in the mother has been associated with miscarriages, stillbirth, preterm delivery, and congenital abnormalities in their babies. Children of mothers with severe iodine deficiency during pregnancy can have mental retardation and problems with growth, hearing, and speech. Even mild iodine deficiency during pregnancy, which may be present in some women in the U.S., may be associated with low intelligence in children.

## 2 CAUSES

### What are the causes of iodine deficiency?

Since the body does not make iodine, it relies on the diet to have enough iodine. The availability of iodine in foods differs in various regions of the world. Individuals in the U.S. can maintain adequate iodine in their diet by using iodized table salt (unless they have to restrict the amount of salt in their diet), by eating foods high in iodine, particularly dairy products, seafood, meat, some breads, and eggs, and by taking a multivitamin containing iodine. However, the amount of iodine in foods is not listed on food packaging in the U.S., and it can be difficult to identify sources of iodine in foods. See the *Iodine Deficiency Brochure* for a list of food items rich in iodine.

## 3 DIAGNOSIS

### How is iodine deficiency diagnosed?

Iodine deficiency is diagnosed across populations and not specifically in individuals. There are no tests to confirm if you have enough iodine in your body. When iodine deficiency is seen in an entire population, it is best managed by ensuring that common foods that people eat contain sufficient levels of iodine.

## FURTHER READING

Further details on this and other thyroid-related topics are available in the patient information section on the American Thyroid Association® website at *www.thyroid.org* and in the following scientific reviews:


- International Council for the Control of Iodine Deficiency Disorders, *http://www.iccidd.org*
- Iodine Status Worldwide, WHO Global Database on Iodine Deficiency, Geneva 2004, *http://whqlibdoc.who.int/publications/2004/9241592001.pdf*
- The Public Health Committee of the American Thyroid Association 2006 Iodine Supplementation for Pregnancy and Lactation – United States and Canada: Recommendations of the American Thyroid Association®. Thyroid 16 (10): 949-51.


## 4 TREATMENT

### What is the treatment for iodine deficiency?

As with many diseases, the best treatment in prevention. The U.S. Institute of Medicine has set the Recommended Dietary Allowance (RDA) for iodine in adults at 150 μg/day. Individuals who add tablet salt to their food regularly should use iodized salt. One teaspoon of iodized salt contains approximately 400 μg iodine. Most iodine-containing multivitamins have at least 150 μg iodine, but only about half of the types of multivitamins in the U.S. contain iodine.

During pregnancy, the RDA is 220 μg iodine/day and for breast feeding women it is 290 μg iodine/day. The ATA has recommended that all pregnant and breastfeeding women in the U.S. and Canada take a prenatal multivitamin containing 150 μg iodine/day.

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