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## Iodine

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### Summary

- Iodine is needed to make essential thyroid hormones. These are used by the body for growth and energy use, as well as brain and bone development during pregnancy and early childhood.
  - Not enough iodine in the diet can cause serious problems including stunted growth in young children and an enlarged thyroid gland (goitre) in adults.
  - Good sources of iodine include bread made with iodised salt and any type of seafood, including seaweed.
  - In Australia all bought breads (except organic bread) have iodised salt.
  - Women who are planning to get pregnant, are pregnant or breastfeeding need extra iodine and should see their doctor for advice about their individual health needs.
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Iodine is used by the **thyroid gland** in your throat to make thyroid hormones. These hormones control your metabolic rate (the rate at which your body uses energy when it is resting). They also help your brain and body grow and develop.

If there isn't enough thyroid hormone circulating in your blood, your brain sends a chemical message to your thyroid gland to release more of these hormones.

### Iodine in food

Iodine is found naturally in a range of foods such as:

- dairy products
- seafood
- seaweed (kelp)
- eggs
- some vegetables.

The amount of iodine available in these foods depends on where the food was grown and how it was made.

Iodine can also come from iodised **salt** added during or after cooking.

In Australia, since 2009, all commercial bread products (except for organic bread and bread mixes for making bread at home) have had iodised salt added to them (instead of non-iodised salt) to increase the amount of iodine they contain. This is known as fortifying the bread with iodine. This means that most of the Australian population, apart from pregnant women, is now consuming enough iodine to meet their needs.

**Adding salt to food can increase your risk of other health problems** such as high blood pressure and heart disease, so it's not recommended. If you do choose to add salt, make sure it is labelled 'iodised'.

### Recommended dietary iodine intake

The Australian Recommended Dietary Intake (RDI) for iodine depends on your age and life stage.

You only need a very small amount of iodine (around one teaspoonful over a lifetime for most adults) when compared to other nutrients, which is why the recommended amounts are measured in micrograms (mcg, or µg).

### Recommended dietary intakes (per day)

Infants aged 0–6 months*	90 µg
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Infants aged 7–12 months*	110 µg
Girls and boys aged 1–3 years	90 µg
Girls and boys aged 4–8 years	90 µg
Girls and boys aged 9–13 years	120 µg
Girls and boys aged 14–18 years	150 µg
Women and men aged 19 years and over	150 µg
Pregnant women	220 µg
Lactating women	270 µg

\* In very young children an RDI has not been set, so an Adequate Intake (AI) is used instead – this is an estimate based on the amount of iodine in the breastmilk of apparently healthy populations of young children.

### How to get enough iodine in your diet

The best way to get the nutrients your body needs is as part of a healthy, well-balanced diet. The Australian Guide to Healthy Eating provides advice on recommended amounts of food from each of the five food groups. Eating according to this guide provides enough iodine for most people.

Some suggestions to make sure you get the required daily amount of iodine include:

- Enjoy a wide variety of nutritious foods from the 5 food groups.
- Have 2 to 3 seafood meals per week. This will provide most adults with enough iodine to fulfil their average iodine requirement, and provide beneficial fish oils. Be mindful when choosing seafood, as some fish may have high levels of mercury or chemicals (such as shark, orange roughy, swordfish and ling). If you are pregnant or planning to get pregnant in the next six months, avoid seafood that has large amounts of mercury.
- Enjoy bread as part of a well-balanced diet. Choose wholegrain and high-fibre varieties for better health options.
- Seaweed, dairy products and eggs provide additional dietary sources of iodine.
- Some vegetables may contain iodine, but only if they are grown in iodine-rich soils.

Food Standards Australia New Zealand (FSANZ) has published a list of the **approximate iodine content of various foods** in Australia.

If you don't get enough iodine in your diet, you may need to take a supplement. However, before starting on iodine supplements, see your doctor as too much iodine can be harmful, especially if you have an underlying thyroid disorder.

Recently, FSANZ approved the voluntary use of iodised salt by manufacturers to fortify other products as an alternative source of iodine for those who don't eat bread, provided it is labelled correctly.

Note that although it comes from the ocean, sea salt is not a good source of iodine.

### Iodine deficiency

If your diet is too low in iodine, your thyroid gland gets larger and larger to try to trap more iodine from the bloodstream so it can make more thyroid hormones. This overgrowth of the thyroid gland is called **goitre**.

Goitre isn't the only side effect of not having enough iodine in the diet. People with long-term iodine deficiency can develop **hypothyroidism**. This is a condition in which not enough thyroid hormone is produced. Symptoms include dry skin, hair loss, fatigue and slowed reflexes.

**Pregnant** and breastfeeding women, as well as babies and very young children, are particularly at risk of problems from inadequate iodine intake.

## **Iodine and pregnancy**

If you are pregnant you need higher levels of iodine than usual for your baby's healthy development.

Mild to moderate iodine deficiency in pregnant women can affect their baby's physical development and hearing, and cause learning difficulties. Severe iodine deficiency can cause major physical and neurological abnormalities, miscarriage or stillbirth.

Although fortification of bread-making flour with iodine has improved the general population's iodine status, pregnant women in Australia are still not getting enough iodine to meet their needs.

So, if you are pregnant, breastfeeding or considering becoming pregnant, ask your doctor for advice about your individual daily iodine needs. They may recommend that you take a daily supplement.

**If you have a pre-existing thyroid condition, do not take iodine supplements without checking with your doctor.**

## **Iodine deficiency in babies and children**

Iodine deficiency can cause serious problems for developing foetuses, babies and young children. If you are pregnant or breastfeeding and you are iodine deficient, your baby is particularly at risk.

Iodine deficiency can permanently affect your baby's growth and mental and sexual development, and puts them at increased risk of intellectual disability.

Lack of iodine is a major problem in developing countries and the world's number one cause of preventable intellectual disability in children.

## **Excessive amounts of iodine can be harmful**

Having too much iodine, for example via supplements, can cause some of the same problems as iodine deficiency (such as goitre). The level of iodine considered to be too much, and the symptoms experienced, can vary from person-to-person, depending on underlying health conditions.

If you think you're not getting enough iodine in your diet speak to your doctor or an accredited practising dietitian before starting on any supplements

## **Where to get help**

- Your GP (doctor)
- **Dietitians Association of Australia** Tel. 1800 812 942

**This page has been produced in consultation with and approved by:**

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