

# Iodine

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## Key points:

- Iodine is an essential nutrient for normal growth and development.
- Iodine deficiency has re-emerged in Australia following changes to sanitation in the dairy industry.
- Sources of iodine include seafood, iodised table salt and bread.
- Marine foods, including fish (e.g. tinned salmon) and shell fish (e.g. oysters) are the best sources of iodine.

## Introduction

Iodine is an essential trace element and an integral component of thyroid hormones. Thyroid hormones are required for normal growth and development of tissues and maturation of our bodies. Iodine deficiency is the most common preventable cause of intellectual disability in the world; obtaining iodine through the food supply is therefore paramount.

Iodine deficiency has re-emerged in Australia with the introduction of new practices of sanitisation in the dairy industry and a decline in use and consumption of iodised salt.

## Iodine deficiency

Iodine Deficiency Disorders (IDD) can affect growth and development. IDDs include:

### Goiter

Very low levels of iodine intake ( $50\mu\text{g}/\text{day}$ ) are associated with goiter, which presents as an enlarged thyroid gland. Other symptoms may include dry skin, fatigue and hair loss.

### Congenital hypothyroidism

Severe iodine deficiency ( $30\mu\text{g}/\text{day}$ ) during pregnancy can lead to congenital hypothyroidism (formerly cretinism) in newborns. This syndrome is characterised by impaired neurological function, physical deformities and stunted growth.

## Remember:

- Iodine is an essential nutrient for normal growth and development.
- Iodine deficiency has re-emerged in Australia following changes to sanitation in the dairy industry.
- Iodine deficiency disorders including goiter and congenital hypothyroidism can affect growth and development.

## How much iodine do I need?

### Iodine recommendations by age

Age group (males and females)	Recommended Dietary Intake (RDI) <sup>1</sup>
1-3 years	90µg/day
4-8 years	90µg/day
9-13 years	120µg/day
14-18 years	150µg/day
19+ years	150µg/day

Pregnant and breast-feeding women may require iodine supplementation, though consultation with a doctor is recommended before commencing any supplementation program.

## Food sources of iodine

Sources of iodine include seafood, iodised table salt and bread. Marine foods, including fish (e.g. tinned salmon) and shell fish (e.g. oysters) are the best sources of iodine.

The iodine content of plants and vegetables is dependent on the environment and soil in which they are grown.

Historically, dairy foods contained high levels of iodine due to the sanitisers used in dairy processing which contained iodophors. These sanitisation techniques have been phased out of the processes now involved in the sterilisation of dairy equipment. As a result, dairy products are a less reliable iodine source.

In Australia, iodine fortified salt contains high levels of iodine. However, use of iodised salt has reduced due to increased awareness of the association between high salt consumption

and hypertension. As of October 2009, Australian bakers are required to replace regular salt with iodised salt in the baking of bread. Prepackaged breads must list iodised salt as an ingredient on product labels, however, unpackaged bread does not require such labelling. Bakers are required to provide information regarding the use of iodised salt to customers on request.

## Remember:

- Sources of iodine include seafood, iodised table salt and bread. Marine foods, including fish (e.g. tinned salmon) and shell fish (e.g. oysters) are the best sources of iodine.
- Changes in sanitation processes in the dairy industry have reduced iodine content of dairy products.
- Australian bakers are now required to use iodised salt in the baking of bread.

## Iodine content of common foods

Food	Iodine content (µg per 100g)
Oysters	160
Sushi (containing seaweed)	92
Tinned salmon	60
Bread (made with iodised salt)	46
Steamed snapper	40
Cheddar cheese	23
Eggs	22
Ice cream	21
Chocolate milk	20
Flavoured Yoghurt	16
Regular milk	13
Tinned tuna	10
Bread (without iodised salt)	3
Beef, pork, lamb	<1.5
Tap water (varies depending on site)	0.5-20.0
Apples, oranges, grapes, bananas	<0.5

<sup>1</sup> Source: <https://www.nrv.gov.au/nutrients/iodine>