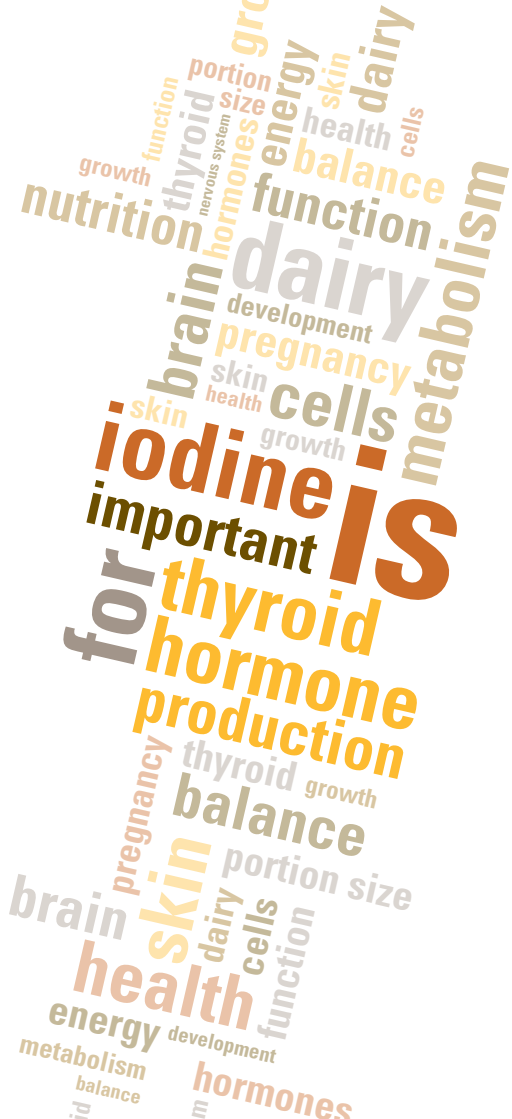


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IODINE

Iodine is an essential micronutrient that has many roles in the body. It makes up part of the thyroid hormones which help release energy from food and regulate growth. They also contribute to brain and nerve function, and help maintain healthy skin.

Iodine intake is particularly important for women during pregnancy and for young children since it contributes to growth and brain development.



IODINE DEFICIENCY

Adults

Certain population groups in the UK are classified as mildly iodine deficient by the World Health Organisation. During the 1800s and 1900s iodine deficiency was common in certain parts of the UK. Goitre was common in many parts of Britain, including South-West England and Wales; it was so common in the Peak District that it was termed 'Derbyshire Neck'.

Goitre is a condition where the thyroid gland becomes enlarged due to insufficient or excess iodine. Iodine deficiency can lead to thyroid dysfunction, including both hypothyroidism and hyperthyroidism. Symptoms of hypothyroidism include; weight gain, dry skin, hair loss, tiredness, depression and intolerance to cold.

It is important to seek advice from a healthcare professional before changing the diet.

GROWTH & DEVELOPMENT

Pregnancy and breastfeeding

During pregnancy the thyroid hormones play a role in brain development and growth of the unborn

baby. Severe iodine deficiency in pregnancy (rare in the UK), can lead to impaired brain development, including problems with cognition, hearing, speech and growth. Mild-to-moderate iodine deficiency in pregnancy has been linked to lower IQ and reading ability in children.

The most recent data from the National Diet & Nutrition Survey shows that 22% of females aged 11-18 and 10% of adult women in the UK don't get enough iodine from food sources. Other studies have demonstrated mild iodine deficiency in teenage girls and pregnant women. This is particularly important as some teenage girls and women of childbearing age could become pregnant unknowingly.

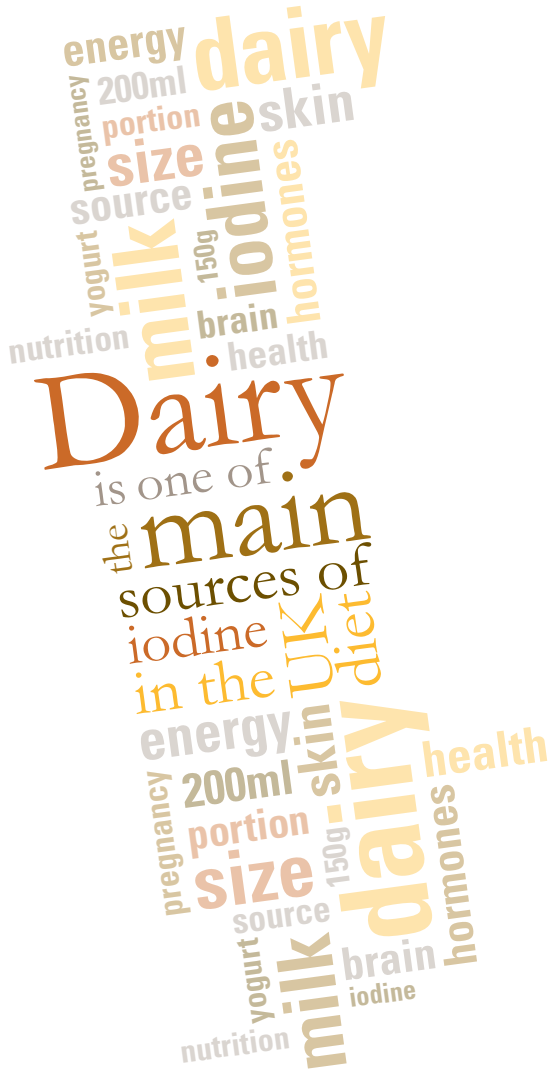
For females who are planning a baby it's important to get enough iodine from the diet. However, too much iodine can also cause problems and it is important to avoid excessive intake of iodine (see page 11).

Iodine intake is also important when breastfeeding, since the baby's brain is still developing (see page 8).

Childhood and adolescence

Children and teenagers grow and develop rapidly up until the age of around 18 years.

Iodine forms part of the thyroid hormones which are responsible for regulating metabolic rate, as well as physical and mental development in children and teenagers. Poor intakes during childhood may be linked to a low IQ and poor physical growth.



DAIRY AND IODINE

The iodine content of foods can vary depending on the soil or waters in which they were grown.

Animals that graze on grass from nutrient poor soil are also at risk of becoming deficient in iodine. In fact, in the 1930s dairy farmers in the UK added iodine to cattle feed to improve animal health. This resulted in an increase in the iodine content of milk and dairy products. These days, dairy foods are one of the main providers of iodine to the UK diet.

Consuming milk, yogurt and cheese is a great way to help to meet iodine requirements. There is no difference in the iodine content between whole, semi-skimmed or skimmed milk, however, it does vary throughout the year and can range from 20µg – 41µg per 100g. It is higher in the winter due to supplementation of iodine in animal feed. The table on the next page shows the recommended iodine intake at different stages in life, and the portion sizes of dairy that can help meet those needs.

Recommended iodine intake at different stages in life and the portion sizes of dairy that can help meet those needs

The Department of Health recommends that children under two need whole milk and full-fat cheese and yogurt.

If they're over two, they can have semi-skimmed milk and lower-fat dairy products if they are good eaters and growing well.

Skimmed and 1% milks are not suitable for children under five.

Pregnancy & Breastfeeding

The Department of Health recommendation for pregnant and breastfeeding women is the same as for adults (140 µg/day). However, the WHO recommendation is for 250 µg/day.

See page 11 for information on supplements.

If you do not consume iodine rich foods seek advice from a healthcare professional before changing the diet.

* RNI, Reference Nutrient Intake, is a figure set by the Department of Health, based on the minimum requirements for iodine plus a margin of safety to allow for different dietary patterns.

** Nutrient values for iodine in milk vary throughout the year, the figure given here is based on an average amount.

Age	Iodine needs* (RNI* µg/day)	Portion sizes	Iodine content** (µg)
1-3 years	70	100ml whole milk	30
		60g whole plain yogurt	38
		15g cheddar cheese	4.5
		These portion sizes provide approximately 72µg of iodine	
4-6 years	100	A small carton (189ml) semi-skimmed milk	57
		80g whole plain yogurt	50
		20g cheddar cheese	6
		These portion sizes provide approximately 113µg of iodine	
7-10 years	110	A small carton (189ml) semi-skimmed milk	57
		125g low-fat plain yogurt	43
		20g cheddar cheese	8
		These portion sizes provide approximately 107µg of iodine	
11-14 years	130	200ml semi-skimmed milk	60
		150g low-fat plain yogurt	51
		30g cheddar cheese	9
		These portion sizes provide approximately 120µg of iodine	
15-18 years	140	250ml semi-skimmed milk	75
		200g low-fat plain yogurt	68
		30g cheddar cheese	9
		These portion sizes provide approximately 152µg of iodine	
19+ years	140	200ml semi-skimmed milk	60
		150g low-fat plain yogurt	51
		30g cheddar cheese	9
		These portion sizes provide approximately 120µg of iodine	

OTHER FOOD SOURCES OF IODINE

These include, per adult portion:

- White fish (115µg)
- Oily fish** (50µg)
- Shellfish (90µg)
- Eggs (25µg)
- Beef (10µg - 15µg)
- Brazil nuts* (5µg)
- Peanuts* (5µg)
- Seaweed (see page 11)
(1g dried nori) (29µg - 46µg)
- Recipes made with dairy products (10µg - 65µg)

Anyone with a medically diagnosed allergy to any of the above foods should avoid consuming them.

* Children under five years old shouldn't be given whole nuts because of the risk of choking.

** Pregnant women should limit their oily fish intake during pregnancy to 2 portions per week.

See the British Dietetic Association Factsheet on Iodine for further information on other food sources of iodine <https://www.bda.uk.com/foodfacts/iodine.pdf>

SUPPLEMENTATION AND EXCESS IODINE

Most people should be able to get all the iodine they need by eating a balanced and varied diet. Too much iodine in the diet can cause symptoms similar to iodine deficiency, including goitre and hormone imbalance.

Iodine intake should not exceed 600µg for adults and pregnant women. The upper limit for children is lower than this figure. If supplements are consumed, the iodine provided should not exceed the RNI for that age-group.

Kelp supplements are not recommended especially during pregnancy, as they are high in iodine. Seaweed should also be consumed sparingly during pregnancy and less than once per week. If taking supplements during pregnancy they should not exceed daily amounts of 150µg per day.

Individuals with thyroid disease or long-standing iodine deficiency should seek advice from a GP or healthcare professional before changing the diet or including an iodine supplement.

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For details on additional information sources
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