

The importance of iron in your child's diet

This leaflet is for the parents and carers of children who have been diagnosed with anaemia, and explains the importance of iron in the diet.

Introduction – why is iron important?

Iron is an essential nutrient and is used in making red blood cells which carry oxygen around the body. Iron also plays an essential role in maintaining a healthy immune system. If your child does not get enough iron in their diet, then they may become anaemic. There are many types of anaemia, but the most common is caused by not having enough iron in your diet.

The signs and symptoms of anaemia can include: feeling tired, looking pale, poor appetite, irritable behaviour, and suffering from lots of infections. Anaemia can also slow down a child's mental development.

Iron requirements for children

If a mother's iron status has been good during pregnancy, a healthy full-term new-born baby should have enough iron stores in their body to last about six months. Breast milk and standard infant formula milk will provide enough iron for the first six months of a baby's life but after that weaning foods should include iron rich sources to meet their iron needs.

Dietary iron RNI's* for children

Age	Iron requirement (mg)	Age	Iron requirement (mg)
0-3 months	1.7mg/day	4-6 years	6.1mg/day
4-6 months	4.3mg/day	7-10 years	8.7mg/day
7-9 months	7.8mg/day	11-18 years (males)	11.3mg/day
10-12 months	7.8mg/day	11-18 years (females)	14.8mg/day
1-3 years	6.9mg/day		

*RNI = Reference nutrient intake. A reference nutrient intake is the amount of a nutrient that is enough, or more than enough for most infants and toddlers.

What are the best food sources of iron?

There are two types of iron in food - haem and non-haem iron. They are absorbed differently by the body. Haem iron is far more easily absorbed.

- Haem iron is found in beef, lamb, liver, fish, pork and poultry. Red meats, such as lean beef and lamb, contain three times as much iron as chicken or oily fish. Liver and liver products

are also an excellent source of iron but should be limited to once per week in your child's diet and should be avoided in pregnancy due to the high vitamin A content in these foods.

- **Non-haem iron** is found in plant foods, such as fresh and dried fruits, dark green leafy vegetables, iron fortified breakfast cereals, beans and lentils, tofu, nuts and eggs. The iron in these foods is less well absorbed than food sources of haem iron.

Sources of dietary iron (toddlers)

Food	Toddler serving size	Haem iron content per serving
Liver (limit to once per week)	3 teaspoons (15g)	1.4 mg
Lean beef	5 teaspoons (25g)	0.7 mg
Lean lamb	5 teaspoons (25g)	0.5 mg
Lean pork	5 teaspoons (25g)	0.2 mg
Dark poultry meat (e.g. chicken legs and thighs)	5 teaspoons (25g)	0.2 mg
Chicken breast	5 teaspoons (25g)	0.1 mg
Fish	5 teaspoons (25g)	0.15 mg
Food	Toddler serving size	Non-haem iron content per serving
Fortified breakfast cereal	3 teaspoons (15g)	1.8 mg
Egg	1 small egg	1.0 mg
White bread	1 slice	0.4 mg
Cooked lentils	3 teaspoons (15g)	0.4 mg
Dried apricots	4 apricots (15g)	0.5 mg
Steamed/fried tofu	4 teaspoons (20g)	0.5 mg
Hummus	4 teaspoons (20g)	0.4 mg
Baked beans	4 teaspoons (20g)	0.3 mg
Banana	1 small banana	0.3 mg
Cooked broccoli	3 teaspoons (15g)	0.15 mg

Sources of dietary iron (school age children)

Food	School age child serving size	Haem iron content per serving
Liver (limit to once per week)	2–3 tablespoons (30–45g)	2.8–4.2 mg
Lean beef	3–5 tablespoons (50–75g)	1.4–2.1 mg
Lean lamb	3–5 tablespoons (50–75g)	1.0–1.5 mg
Lean pork	3–5 tablespoons (50–75g)	0.4–0.6 mg
Dark poultry meat e.g. chicken legs & thighs	3–5 tablespoons (50–75g)	0.4–0.6 mg

Compassionate

Aspirational

Resourceful

Excellent

Food	School age child serving size	Haem iron content per serving
Chicken breast	3–5 tablespoons (50–75g)	0.2–0.3 mg
Fish	3–5 tablespoons (50–75g)	0.3–0.45 mg
Food	School age child serving size	Non-haem iron content per serving
Fortified breakfast cereal	1–2 tablespoons (15-30g)	1.8–3.6 mg
Egg	1 medium egg	1.5 mg
White bread	1–2 slices	0.4–0.8 mg
Cooked lentils	2–3 tablespoons (30-45g)	0.8–1.2 mg
Dried apricots	8 apricots (30g)	1.0 mg
Steamed/fried tofu	2–3 tablespoons (30-45g)	0.75–1.1 mg
Hummus	2–3 tablespoons (30-45g)	0.45–0 mg
Baked beans	2–3 tablespoons (30-45g)	0.45–0.70 mg
Banana	1 small banana	0.3 mg
Cooked broccoli	2–3 tablespoons (30-45g)	0.3–0.45 mg

Your child's iron rich example meal suggestions

Breakfast	<ul style="list-style-type: none"> Fortified breakfast cereal with fruit Eggs with toast and sliced tomato, followed with fruit e.g. banana, orange segments, grapes
Light meals/snacks	<ul style="list-style-type: none"> Ham or other cold meat sandwich Fish sandwich/bagel Hummus with pitta bread and carrot sticks Peanut butter sandwich with tomatoes Baked beans on toast and slices of red peppers Toast with chicken liver pate
Main meals	<ul style="list-style-type: none"> Meal with red meat or dark poultry meat e.g. beef spaghetti Bolognese with vegetables Meal with fish e.g. salmon/tuna with potatoes and vegetables Meal with tofu e.g. tofu and vegetable stir-fry with rice Meal with beans/lentils e.g. beans with sweet potatoes and salad Omelette with added vegetables
Puddings	<ul style="list-style-type: none"> Dried fruit and fresh fruit

Top tips

Iron boosters ✓	Iron blockers ⓧ
<ul style="list-style-type: none"> ✓ Combining sources haem iron with plant-based sources of non-haem iron can boost absorption overall. For example: combining meats with green leafy vegetables or pulses at a meal. ✓ Vitamin C (also known as ascorbic acid) can help the body to absorb iron, especially if taken alongside non-animal (or non-haem) sources of iron. e.g. orange juice/apple juice ✓ Fruit and vegetables are good sources of vitamin C, for example: Oranges, kiwi, watermelon, strawberries, blueberries, raspberries, tomatoes, broccoli, Brussel sprouts, red peppers, green peppers, cabbage and cooked spinach. 	<ul style="list-style-type: none"> ✗ Do not offer your child tea to drink because it contains polyphenols which reduces iron absorption in the body. ✗ Do not offer cow's milk as a drink to babies under one year of age as cow's milk is a poor source of iron. ✗ Toddlers who drink too much cow's milk and do not eat a healthy balanced diet may not get enough iron as cow's milk is a poor source of iron. ✗ After your child's first birthday, about three drinks of 120ml (4oz) of cow's milk per day should be enough for their calcium needs. Other sources of dairy can be offered, for example, cheese and yoghurts. ✗ Foods that are high in phytates, such as wheat bran cereal, nuts, seeds, soya and raw spinach can also inhibit iron absorption; therefore, combine these foods with foods rich in vitamin C. For example have orange juice with bran flakes.

Iron supplements

Most children should be able to get all the iron they need by eating a varied and balanced diet and should not need to take iron supplements.

However, if your child's iron level is very low your doctor may prescribe an iron supplement. These can cause constipation in some children. Speak to your doctor if your child has any unusual side effects. Iron supplements must always be stored out of the reach of children and you should not exceed the prescribed or recommended dose as iron can be toxic to children if taken in excess.

Please note: do not take calcium and iron supplements at the same time, as calcium will affect the absorption of iron. Preferably take the iron supplement with meals and the calcium supplement between meals or at bedtime.

Contact details

If you have any queries, please contact the branch of the Dietetic Department where your child is seen:

- East Berkshire Community Dietitians 01753 636724
- West Berkshire Community Dietitians 01635 273710
- Royal Berkshire Hospital Dietitians 0118 322 7116
- CYPIT East Berkshire Dietitians 01753 635073
- CYPIT West Berkshire Dietitians 0118 918 0571

Leaflet adapted from:

Scientific Advisory Committee on Nutrition (2010) Iron and Health;

UCH Department of Nutrition and Dietetics Paediatrics (2014) How to get enough iron in your child's diet: Information for parents and guardians

British Dietetic Association Iron: Food Fact Sheet (2017)

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Berkshire Healthcare Foundation Dietitians, January 2021

Next review due: January 2023