

## How do you prevent or treat anaemia or low iron levels in kids and pre-teens?

### Key points:

- Infants and children are at increased risk of developing iron deficiency due to increased needs for iron for growth and brain development.
- Consuming iron-rich foods each day will help prevent low iron levels and anaemia.
- For vegetarian or vegan diets, extra care needs to be taken to ensure adequate iron.
- Keep iron supplements away from children. Overdoses can be fatal in infants and young children.
- Seek support if your child does not eat iron-rich foods every day.

Iron is a mineral that is essential for brain development and plays an important role in transporting oxygen around the body in the blood. If you don't get enough, your stores can drop and low iron levels, anaemia, tiredness and fatigue will result.

Infants and children have higher iron needs due to rapid growth periods and are therefore at higher risk of iron deficiency. A baby or child not getting enough iron will eventually develop iron deficiency anaemia. For more information and tips for meeting nutrient needs, see also ['Expanding the menu for my baby'](#).

### What are the causes of low iron?

Low iron in infants and children can be due to a diet low in iron or medical reasons. Dietary causes of low iron include:

- Delayed introduction of solids
- High intake of cow's milk in young children less than two years of age
- Poor meat intake
- Vegetarian and vegan eating
- Poor diet in the second year of life.

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### What are the signs of low iron?

If your child's iron levels are low, they may show some of the following signs:

- look very pale
- irritability
- lacking energy
- frequent headaches
- poor growth and/or fussy eating.



### How is low iron treated?

The treatment for low iron levels depends on the cause. Low iron can occur when there is not enough iron in your child's diet or due to certain medical conditions. It is important to confirm the possible causes of low iron with your doctor. Changing your child's diet alone might not be enough. Your child might also need to take iron supplements (tablets or syrup) or in some cases might need an iron infusion, or injection.

### How much iron does my child need?

The amount of iron your child needs each day for healthy growth and development depends on their age and, for older children, gender. As shown in the table below, infants and young children have higher iron requirements than you might expect given their small size. Infants, children and teenagers undergo rapid growth spurts which increase their iron needs.

Age Group	RDI* (milligrams per day)
7-12 months	11
1-8 years	9-10
9-13 years	8

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Age Group	RDI* (milligrams per day)
14-18 years (boys)	11
14-18 years (girls)	15

\* RDI - Recommended Dietary Intake

### What are the different types of iron?

There are two types of iron, haem iron and non-haem iron. Haem iron is better absorbed than non-haem iron.

Haem iron is found in animal foods such as meat, chicken and fish. This type of iron is well absorbed by the body. Non-haem iron is found in plant foods – legumes, wholegrain breads and cereals, nuts, seeds and dark green, leafy vegetables. Eggs are also a source of non-haem iron. Non-haem iron is not absorbed by the body as well as haem iron. Approximately 15% to 35% of heme iron is absorbed, whereas only 2% to 20% of non-haem iron is absorbed. Absorption of non-haem iron depends on the child's iron stores and other dietary factors.

### Iron content of foods

Meat is the richest source of iron and can be more readily absorbed. Plant foods contain less iron and the type of iron is not as easily absorbed but can make a significant contribution to your child's daily intake.

#### High iron:

- Red meat (beef, lamb, veal, kangaroo)
- Organ meat (kidney, liver including paté)
- Oysters (natural, cooked, canned)



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### Moderate iron:

- White meat (chicken, pork, fish)
- Eggs
- Iron-fortified breakfast cereals (eg. iron-fortified infant cereals, wheat biscuits)
- Iron-fortified foods (eg. Milo)

### Less iron:

- Legumes (baked beans, chickpeas, lentils, black beans, kidney beans)
- Nuts and seeds, including spreads
- Wholemeal/wholegrain bread
- Dark green, leafy vegetables (eg. spinach, silverbeet, broccoli)

### Iron absorption is enhanced by Vitamin C but not calcium.

Foods containing calcium can reduce the amount of iron absorbed while vitamin-C increases absorption.

Calcium-containing foods (milk, cheese, yoghurt, custard) and calcium supplements can reduce the amount of iron absorbed. It is best to have foods containing iron at different times to dairy food or calcium supplements.

Consume vitamin C-rich foods with plant foods for better absorption. Foods that are a rich source of vitamin-C include: citrus fruit and citrus juice, capsicum, kiwifruit, paw paw, melons, cabbage, cauliflower, berries, tomatoes.

### Preventing iron deficiency in infants and children

Low iron can usually be prevented in infants and children by including iron-containing foods in your child's diet every day. Here are our top tips for preventing diet-related iron deficiency:

- **Don't delay the introduction of solids.** From 4-6 months, offer red meat or iron-fortified infant cereal for baby's first foods. After 6 months, breastmilk and infant formula do not contain enough iron. For further information, see ['How to determine baby's first foods'](#).

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- **From 7-8 months, offer solids 3 times a day and include iron-rich foods.** Include lean red meat three to four times a week. Also offer other iron-containing foods, such as dried beans, lentils, chickpeas, canned beans, poultry, fish, eggs and small amounts of nuts and nut pastes. If your family follows a vegan or vegetarian diet, you may need to seek advice from an Accredited Practising Dietitian to ensure your child is getting all the nutrients needed.
- **Include vitamin C-rich foods daily**, such as oranges, mandarins, berries, kiwifruit, tomatoes, cabbage, capsicum and broccoli.
- **Avoid filling up on snacks and drinks (eg. milk) between meals** and encourage solids foods at mealtimes.
- **Fussy eaters are at higher risk of low iron.** Seek support if your child eats a limited variety of iron-rich foods. See also '[How to make your child a good eater](#)'.

### Iron supplements can be toxic

Iron supplements are not safe for infants or children, unless advised by your doctor. Iron supplements can be fatal for infants and young children. Keep all supplements tightly capped and out of children's reach.

### Further support

If you are concerned about your child's food intake, eating behaviours, growth or nutrition-related health, contact a GP, paediatrician or Accredited Practising Dietitian who can provide a comprehensive assessment that considers your child's medical history, eating patterns including mealtime experiences, physical activity and genetic factors.

Find an Accredited Practising Dietitian with experience in infant and child growth - <https://dietitiansaustralia.org.au/find-an-apd/>

Prevention of iron deficiency

<https://academic.oup.com/jn/article/138/12/2529/4670190?login=true>

Factors affecting iron absorption

<https://europepmc.org/article/med/3290310>

Iron and vegetarian diets, Medical Journal of Australia:

[https://www.mja.com.au/journal/2013/199/4/iron-and-vegetarian-diets#0\\_i1141530](https://www.mja.com.au/journal/2013/199/4/iron-and-vegetarian-diets#0_i1141530)