

Will my baby get enough iron?

Iron intake is often an issue of concern among health professionals and, as a result, parents often worry about whether their baby is getting enough iron when they introduce complementary (or 'solid') foods. But what are the risks, really? And why all the fuss? And what difference does choosing BLW make?

The importance of iron

Iron is important for all of us. It plays a key role in many of our body systems, including the immune system. However, its best known function is in the production of haemoglobin, which enables red blood cells to carry oxygen to our organs. If iron levels fall too low the result is iron-deficiency anaemia, which compromises the effective working of all parts of our bodies, and which, if severe, can have serious consequences for babies' developing brains. But, unless there is an underlying illness or a sudden loss of blood, even mild anaemia is unlikely. It's also worth bearing in mind that *too much* iron can be harmful, affecting the absorption of other nutrients and increasing the risk of gut infections.

Where do babies get their iron?

Most babies are born with plenty of iron to see them through *at least* the first six months, so it's no mistake that breastmilk contains safe, low levels of iron. The small amount of iron that there is in breastmilk is readily absorbed, and much more easily available to the baby than the large amounts that are added to formula.

The iron stores a baby will rely on for the first six months or so are established at birth. Good levels are pretty much assured if the mother was healthy during the pregnancy, the baby is born after at least 37 weeks and – crucially – the umbilical cord is left to pulsate before it is clamped and cut. This is because the blood in the cord is *the baby's* blood, which needs to be allowed to return to his body. Babies born early (preterm), those who are small for their gestational age and those whose cord was cut prematurely *may* start to need some additional iron before they reach six months (see below for more on this) but the majority are not at risk.

Over the first six months the baby's iron stores slowly get less. This gradual depletion is completely normal; it doesn't happen overnight and it doesn't mean the levels are getting dangerously low. It just signals the need for him to start obtaining iron from food, rather than through using his existing stores. It's possible that this is one of the things that prompts babies to start exploring food, and it may be what determines which foods they go for first.

For the first few weeks of solid foods, most babies need to obtain only very small amounts of iron from what they eat. **Provided iron-rich foods are included in what the baby is offered each day, and he is allowed to make a free choice about what, and how much, to eat, he is very unlikely not to get enough iron.**

Why all the fuss?

To understand why there is so much concern about iron – especially in relation to baby-led weaning (BLW) – we need to understand a bit about the context of the research evidence. Here are a few facts you may not be aware of:

- Much of the existing research into babies' dietary needs was conducted at a time when umbilical cords were routinely clamped and cut a few seconds after the baby was born. The result was that many babies began life with much less stored iron than they should have, meaning that their stores started to run low sooner. It is now routine for the umbilical cord to be allowed to stop pulsating before it is clamped, so the majority of babies have better iron stores than the babies featured in most research papers.
- Many of the studies into infant nutrition have been carried out in low-income countries, where young children are commonly given food of very low nutritional value. Of course, iron intake is a concern in such circumstances but it doesn't mean children whose diets are more nutritious are at similar risk.
- Research into BLW is only slowly appearing but there have been at least two published studies that have shown no more risk of iron deficiency with BLW than with the conventional approach – provided the baby is offered iron-rich foods from the outset. Let's not forget, too, that BLW is not new: parents have been doing it for generations. The only new thing is that it now has a name, so it's able to be talked about. If it were dangerous to introduce solid foods this way we would know by now.
- When the recommended minimum age for complementary feeding first changed, most of the information about how to go about it didn't. Even today, many parents are advised to start with fruit and vegetables, only adding meat and other iron-rich foods after a few weeks. At six months, what the vast majority of babies are just beginning to need are small amounts of iron and zinc, found mostly in meat, eggs and pulses, not quantities of carbohydrate-rich foods (such as carrot, apple and rice) that are low in iron. Iron-rich foods should be introduced from around six months for all babies, ideally as the very first solid foods.
- For a long time, cereal, such as baby rice or porridge, was a baby's first solid food. This is still the case in many countries today. Cereal was originally promoted as a first food, not because it was nutritious but because it was cheap, plentiful, and easy to feed to young babies. When the importance of iron was recognised the baby-food manufacturers were quick to 'fortify' their products with this vital nutrient. The result was that industrially produced cereals continued to be promoted in preference to foods that were naturally rich in iron. And yet there is more available iron in a tiny amount of meat or egg than there is in a whole bowlful of baby rice.
- In the past, parents were encouraged to systematically cut down their baby's milk feeds at the same time as they introduced solids, and to replace breastmilk with equivalent nutrients in the form of solid food. (Unfortunately, some are still advised to do this.) This is why there used to be such a lot of emphasis on persuading babies to eat 'enough' of certain foods. However, breastmilk is the most concentrated, well-balanced and easily digested form of nutrition available to humans. (Indeed, if it were possible to replace it adequately with a combination of other foods we wouldn't need formula!) Most babies simply don't need other foods until around six months, when the aim is to *complement* (or add to) their milk feeds, not replace them. *Offering* foods that contain the iron that the baby may be beginning to need, and allowing her to control the amount she eats, mean she is able to get the best balance of solid foods and breastmilk (or formula).

- Research into foods for babies is heavily influenced by the baby food industry. Companies that make and sell foods aimed at babies are very keen to convince parents and professionals that their ultra-processed, 'fortified' products are better than fresh, home-cooked food. Much of the research into infant feeding is funded by these companies and they have a lot of control over how studies are designed (for example using their products) and the way in which the findings are made public. This inevitably skews what we think we know about what babies need.

Good sources of iron

Animal products are undeniably the best source of iron for humans, since they contain haem iron (from the animal's blood), which is the most readily absorbed variety. Red meat contains the most iron, followed by poultry, eggs, fish and seafood. Liver contains a lot of iron but it also contains high levels of vitamin A and toxins, so it shouldn't be eaten more than once or twice a week. Non-haem iron, from plants, is less well absorbed but the absorption is increased if foods rich in vitamin C are eaten at the same meal. Good plant sources include beans, peas and lentils, with dried fruits, such as apricots, figs and prunes, and most green leafy vegetables (but not spinach) also providing reasonable quantities. Ironically, 'fortified' cereals (such as baby rice or porridge) are not good sources of iron because the iron that is added to them is less easily absorbed than the naturally occurring iron found in other foods.

Babies who may need extra iron

Preterm babies, those born weighing less than normal for their gestational age, and those whose umbilical cord is clamped and cut before it has finished pulsating (for whatever reason) *may* need additional iron before they reach six months. However, there is no evidence that the best way for them to get this is through solid foods – not least because of the risk that giving them solids will start to reduce their intake of breastmilk, exposing them to the risks of infection and other illnesses. It is likely that the most appropriate way to ensure that babies at risk of premature iron depletion get enough iron is to give them supplements in the form of medicine. A blood test is an easy way to establish whether a baby is at risk, so if you are in any doubt about your baby's need for iron, discuss it with your doctor.

In summary, there are a lot of alarmist reports about iron, many of them influenced by the baby food industry or based on outdated or irrelevant research. All the majority of babies need, from around six months, is the *opportunity* to eat foods that are rich in iron at least once each day. That way they can start to increase their iron intake naturally, as soon as their body tells them they need to.

Gill Rapley, June 2019