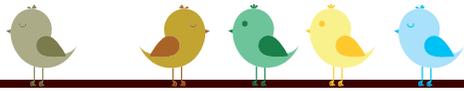


Is your baby getting enough iron?

Practical tips and easy iron-rich
meal ideas for babies





WHY DOES MY BABY NEED IRON?

Babies need lots of iron because they are growing so rapidly. In the first 12 months, their birth weight triples. Iron helps babies grow by carrying oxygen to every part of the body. It ensures they develop physically, is essential for brain development and their ability to learn, and helps them fight infection.

Which are the best sources of iron?

Iron is found in a number of foods, including red meat. In general, the redder the meat, the higher the iron content.

But not all iron is the same. Haem iron (found in red meat, fish and poultry) is more easily absorbed, with about a quarter being used. Whereas only about 5% of non-haem iron (found in green vegetables, bread and cereals) is absorbed. Red meat can help increase the absorption of non-haem iron by up to four times. Vitamin C has a similar effect. Eating a combination of foods high in both haem and non-haem iron helps provide an iron-rich diet.

Haem Iron Foods (Easily Absorbed)

Excellent Sources

- Liver*, kidney
- Lean beef, lamb

Good Sources

- Lean chicken, pork
- Fish, including canned fish

*While liver is an excellent source of iron, it is also rich in vitamin A. Vitamin A is important for health, but too much can be harmful to babies. Limit liver to about 3 teaspoons (15 grams) a week.

When first introducing liver to your baby, keep a piece in the freezer and simply grate some into simmering, almost cooked vegetables before puréeing.

Non-Haem Iron Foods (Poorly Absorbed)

- Infant cereal with added iron, porridge**
- Peas, spinach, silverbeet, broccoli, cauliflower
- Dried apricots, prunes, other dried fruit, finely chopped**
- Baked beans, cooked dried beans, lentils, split peas
- Puha, taro leaves
- Wholemeal bread (avoid coarse, grainy types)

** From 8 months

How much iron does my baby need?

Your baby's iron needs can be met with a combination of:

- Milk feeds
- Cooked lean beef or lamb and vegetables
- Iron-fortified infant cereal with fruit to increase iron absorption

How much food does my baby need?

Babies tend to eat according to the amount they need. Every baby is unique; some days they will eat more than other days. Offer small portions of nutritious foods each day and trust your baby to decide how much to eat. Some babies will turn their head away when full.

A happy, contented baby, growing well, is the best sign your baby is getting all the nutrients they need.

Could my baby be iron deficient?

If you can tick any of the boxes below, or are concerned about your baby's iron level, talk to your doctor or Plunket nurse.

- Recurrent infections
- Grumpy and irritable
- Tired and lethargic
- Difficulty sleeping
- Pale
- Feels the cold
- Reduced appetite
- Reduced weight gain
- Digestive problems





WHY ARE IRON-RICH FOODS SO IMPORTANT?

For the first six months babies obtain all the iron they need from their own iron stores combined with their milk feeds. Although breast milk is quite low in iron, it is very well absorbed. Breast-fed babies rarely lack iron.

By around six months of age your baby's iron stores are beginning to run out. Iron needs increase and are particularly high between six and nine months. At this time, a range of solid food must be introduced gradually. It is important these early foods are 'good' or 'excellent' sources of easily absorbed iron (see page 2), such as lean beef and lamb, to ensure iron needs are met.

YOUR BABY'S FOOD JOURNEY...

Smooth Stage

babies around 6 months

To begin with, make your baby's puréed foods very soft, smooth and moist. Purée cooked meat such as mince, casserole, steak, liver or kidney in a baby mouli or food processor. Mix with a little of baby's milk to achieve a smooth consistency. Alternatively, purée cooked meat with vegetables (such as potato, pumpkin, carrot or kumara). Start by offering one or two teaspoons a day after a milk feed, using a small, shallow plastic teaspoon. Gradually increase the amount offered. If a new food is rejected, continue to offer it until it becomes familiar.



Mashed Stage

babies 7 to 8 months

Introducing texture into your baby's food encourages your baby to chew, developing muscles for speech. Purée/chop cooked meat and vegetables coarsely in a food processor.



Chopped Stage

babies from 8 months

Babies can be encouraged to feed themselves from around 8 months old. Begin offering solid food before milk feeds. Slice cooked meat into strips and serve with pasta pieces, or bread/toast fingers, and soft fruit and vegetable slices. Grilled lamb cutlets are good for teething gums, avoiding bones with sharp edges. Never leave your baby alone when eating.



Toddlers and Family Foods

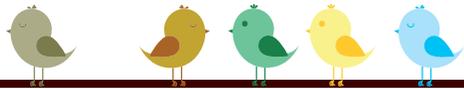
around 12 months

Toddlers should be encouraged to eat family meals but they can be fussy. Some days they happily eat anything, other days they pick like sparrows. This is perfectly normal. Although not growing as fast as babies, toddlers are very active and still need plenty of iron. They often eat small meals, so ensure their food is nutritious and contains easily absorbed iron (see page 2). No single food provides all your toddler's iron needs - variety is the key.



Meat Handling Tips

- Always wash your hands thoroughly before preparing food and after handling raw meat.
- All utensils and chopping boards used for preparing raw meats should be washed thoroughly after use, and before being used to prepare other foods.
- Store raw and cooked meats separately in the fridge, with raw meat on the bottom shelf.
- Put left-over meat into the fridge in a tightly covered container as quickly as possible. Discard all food kept at room temperature for over 2 hours.



"When we were rowing, we needed iron-rich beef and lamb to ensure we performed at our best. Now we're helping Tom and Lucy do the same. Their favourite is beef mince and kumara; Tom needs it puréed and Lucy loves it mashed!"

Caroline Meyer and Georgina Earl (née Evers-Swindell)

IRON-RICH RECIPES FOR YOU AND YOUR BABY

BEEF MINCE AND KUMARA

Ingredients

- 300 to 450g lean Quality Mark beef mince
- 1 cup peeled, grated kumara
- 2 cups peeled, grated apple
- 1 cup water

Method

1. Put mince, apple and kumara into a saucepan. Add water and bring slowly to the boil.
2. Simmer gently for about 45 minutes, stirring often, until reduced and thick but still moist.
3. Purée to a smooth consistency.

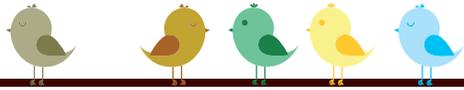
You may find it useful to cook a larger batch of puréed meals, such as this one, then freeze in small portions to use later. Purées can be frozen in an ice cube tray. When solid, transfer to a plastic bag, seal and return to the freezer.



Adapting the family meal

Once your baby is comfortable eating red meat, you can begin preparing meals for your baby from the family meal.

Meals need to be bland for your baby, but flavours can be 'revved' up at the end of cooking for the rest of the family, as indicated in some of the following recipes.



SHEPHERD'S PIE

Ingredients

- 500g lean Quality Mark beef or lamb mince
- 1 Tbsp oil
- 420g jar pasta sauce*
- 1 stalk celery, finely chopped
- 6 button mushrooms, sliced
- 1 carrot, peeled and finely chopped
- 1 courgette and/or other seasonal green vegetables, finely chopped
- 4 medium potatoes, peeled and quartered

*Leave this ingredient out for babies around 6 months - see Smooth Stage on opposite page for more details.

Method

1. Pre-heat oven to 180°C.
2. Brown mince in the oil in a hot pan, breaking the mince up into small pieces with the back of a spoon. This is best done in two batches.
3. Stir in pasta sauce* and vegetables except the potatoes.
4. Cover and simmer gently for 15 minutes.
5. Boil the potatoes in unsalted water until tender. Drain and mash.
6. Spoon mixture into a pie dish and top with mashed potato.
7. Bake at 180°C for 15 minutes or until top is golden.
8. Serve with steamed green vegetables.



Smooth Stage

babies around 6 months

*At this age, leave out the pasta sauce. Purée the meat and vegetable mixture. Mix with a little of baby's milk if necessary to achieve a smooth consistency.



Mashed Stage

babies 7 to 8 months

Purée the meat and vegetable mixture to a lumpy, mashed consistency so your baby can experience the different textures.



Chopped Stage

babies from 8 months

Serve the layers separately so your baby can experience different tastes and textures. Serve with some steamed green vegetables chopped into bite-sized pieces.

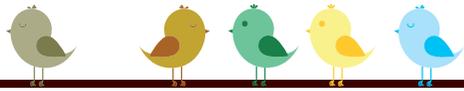


Toddlers and Family Foods

from 12 months

For additional flavours, add garlic or Worcestershire sauce once mince is cooked through. Serve in a small bowl with steamed green vegetables and encourage your toddler to eat with a fork.





MUSTARD ROAST BEEF

Ingredients

- 600 - 800g piece of lean Quality Mark beef such as whole sirloin, topside, bolar or chuck
- 2 Tbsp mild mustard
- 2 Tbsp oil
- 4 medium potatoes and/or kumara, peeled and quartered
- 4 carrots, peeled and cut into chunks
- 2 leeks or other seasonal vegetables, cut into chunks

Method

1. Place the beef on a rack in a roasting dish. Roast in a pre-heated oven at 180°C for 45 minutes.
2. Remove from the oven and spread the mustard over the top of the beef.
3. Toss the vegetables in the oil and scatter around the beef. Return to the oven for a further 45 minutes or until the meat is tender and the vegetables cooked. Remove from the oven and allow the meat to stand for 10 minutes before carving. Place the vegetables in the oven at 100°C to keep warm.
4. Serve the roast beef thinly sliced with the vegetables.



Smooth Stage

babies around 6 months

Take a selection of the meat, potato and vegetables and purée to a smooth paste. If a little dry, moisten with baby's milk or some meat juices from the pan.



Mashed Stage

babies 7 to 8 months

Take a selection of the meat, potato and vegetables and purée to a lumpy, mashed consistency.



Chopped Stage

babies from 8 months

Cut the meat and vegetables into small bite-sized pieces or give the vegetables as finger food.

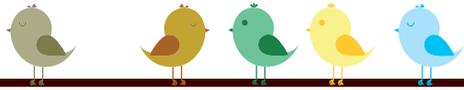


Toddlers and Family Foods

from 12 months

Cut up the meat and vegetables and encourage your toddler to eat with a fork.





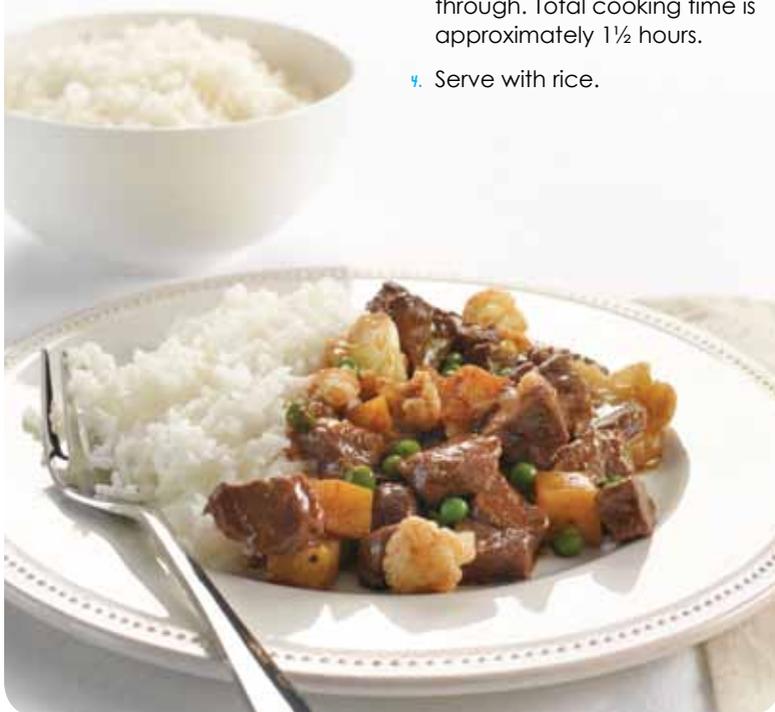
CASSEROLE LAMB

Ingredients

- 500g lean diced Quality Mark lamb
- 1 tsp oil
- 1½ cups reduced-salt beef or vegetable stock or ½ tsp reduced-salt stock powder to 1½ cups water
- 1 small potato, peeled and diced
- ½ cup cauliflower, diced
- ¼ cup frozen peas

Method

1. Heat the oil in a large frying pan and brown the lamb. Add the stock, cover and simmer for 30 minutes. Simmer gently to ensure the meat remains tender.
2. Add the potato and cook a further 30 minutes before adding the cauliflower. Cook until the vegetables are tender.
3. Add the peas and heat through. Total cooking time is approximately 1½ hours.
4. Serve with rice.



Smooth Stage

babies around 6 months

Purée the meat and vegetable mixture. Mix with a little of baby's milk if necessary to achieve a smooth consistency.



Mashed Stage

babies 7 to 8 months

Purée the meat, vegetables and rice together to a lumpy, mashed consistency.



Chopped Stage

babies from 8 months

Cut the meat and vegetables into smaller pieces and serve them separately so your baby can begin to distinguish different tastes and textures.

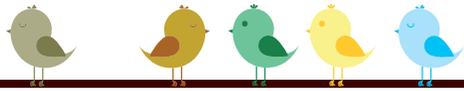


Toddlers and Family Foods

from 12 months

When browning the lamb, add a diced onion. Add 1 tsp of curry paste and 2 Tbsp sultanas with the stock. Cut up sultanas as necessary.





MEATY HOT POT

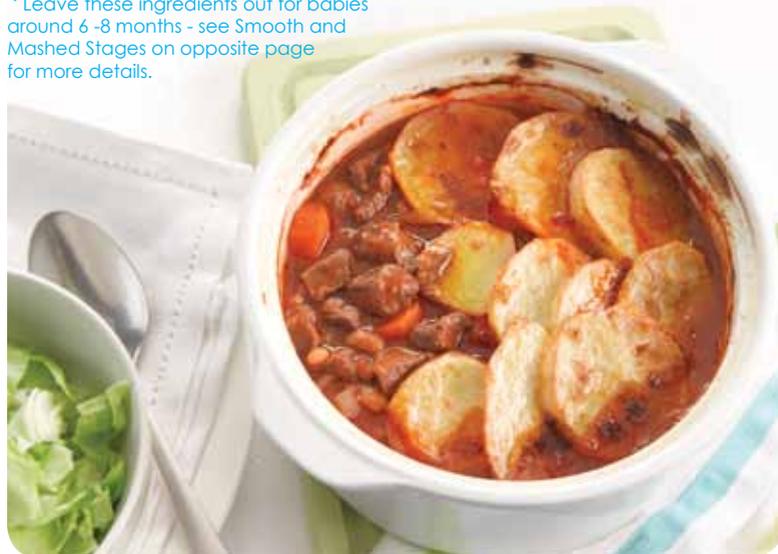
Ingredients

- 500g lean diced Quality Mark beef or lamb casserole meat such as beef chuck, blade steak or boneless lamb
- 420g can baked beans
- ½ small swede or kumara, peeled and cubed
- 2 carrots, peeled and chopped
- 1 onion, peeled and chopped*
- 2 Tbsp tomato purée*
- 1¼ cups water
- 2 large potatoes, peeled and thinly sliced
- 1 tsp oil

*Leave these ingredients out for babies around 6-8 months - see Smooth and Mashed Stages on opposite page for more details.

Method

1. Pre-heat the oven to 180°C.
2. In a large casserole dish, mix together the meat, beans, swede or kumara, carrots, onion* and tomato purée*.
3. Stir the water into the casserole mix.
4. Cover and cook at 180°C for ½ hour.
5. Remove the casserole from the oven and top with sliced potatoes, brushed with oil.
6. Return to the oven, uncovered for 1 hour. Serve with seasonal vegetables.



Smooth Stage

babies around 6 months

*Leave out the tomato purée and reduce the amount of onion until your baby is familiar with the flavour. Purée the meat and vegetables. Mix with a little of baby's milk if necessary to achieve a smooth consistency.



Mashed Stage

babies 7 to 8 months

*Leave out the tomato purée. Purée the meat and vegetables to a lumpy, mashed consistency.



Chopped Stage

babies from 8 months

Chop up the large pieces of meat and vegetables into bite-sized pieces and serve separately so your baby can experience different tastes and textures.

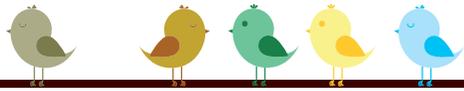


Toddlers and Family Foods

from 12 months

Cut up the meat and vegetables as necessary, encouraging your toddler to use a fork.





MOROCCAN DICED LAMB

Ingredients

- 500g lean diced Quality Mark lamb
- 1 Tbsp oil
- 1 onion, peeled and diced*
- ½ tsp ground cumin*
- ½ tsp paprika*
- 1 carrot, peeled and diced
- 12 dried apricots, diced
- 300g can chickpeas
- 1 cup reduced-salt beef stock or ½ tsp reduced-salt beef stock powder to 1 cup water

*Reduce the amount of these ingredients for babies around 6 months - see Smooth Stage on opposite page for more details.

Method

1. Pre-heat oven to 160°C.
2. Heat oil in a frying pan and brown diced lamb well. Place in a casserole dish.
3. Add the onion*, cumin* and paprika* to the pan and cook in the residue oil until lightly brown. Scatter over the lamb.
4. Add carrots, apricots, chickpeas (including liquid from the can) and stock.
5. Place casserole dish in oven and cook at 160°C for approximately 1½ hours until the lamb is tender.
6. Serve with seasonal vegetables and mashed potato or couscous.



Smooth Stage

babies around 6 months

*To begin with you may need to reduce the amount of spices and onion until your baby is familiar with the flavours. Purée the meat and vegetable mixture. Mix with a little of baby's milk if necessary to achieve a smooth consistency.



Mashed Stage

babies 7 to 8 months

Purée the meat and vegetables into a lumpy, mashed consistency so your baby can experience the different textures.



Chopped Stage

babies from 8 months

Chop up any large pieces of meat and serve with mashed potato and chopped vegetables.

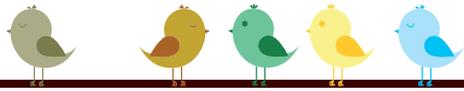


Toddlers and Family Foods

from 12 months

Chop up any large pieces of meat as necessary. Serve with couscous or flat bread as an alternative to potato.





AGE*	IRON STATUS	FOOD TEXTURE	FOOD NEEDS	SPECIAL NOTES
Birth to around 6 months	Good iron stores at birth	Liquid	Milk feeds only	Don't introduce cows' milk or solids.
Around 6 months	Baby's iron stores are diminishing	Puréed, soft and smooth (see page 4)	<p>When ready, at around 6 months, start to introduce slowly:</p> <ul style="list-style-type: none"> • Iron-fortified infant cereal • Puréed fruit without skin, pips or seeds, cooked to soften if necessary, eg apple, pear, ripe banana, apricot, melon, plums • Puréed, cooked, peeled vegetables, eg potato, kumara, carrot, pumpkin, broccoli, cauliflower, parsnips, taro, puha, capsicum, raw avocado • Puréed, cooked meats, eg lamb, beef, pork, liver, kidney, chicken, fish • Puréed, cooked legumes, eg baked beans, lentils 	Offer solids after milk feeds. Start with ½ - 2 teaspoons of new foods, one at a time.
7-8 months	Baby has high iron needs	Puréed, minced, finely chopped or mashed (see page 4)	<p>Increase the variety of foods slowly with:</p> <ul style="list-style-type: none"> • Cooked and mashed egg • Soy foods, eg tofu, temph • Yoghurt, cooked milk puddings, cheese • Well-cooked finely chopped pasta and noodles • Rusks, crackers, bread and toast 	Offer solids after milk feeds. 2 tablespoons to ½ cup, 2-3 times/day increasing to 3-4 meals/day plus 1-2 snacks as required.
8-12 months	Baby has high iron needs	Chopped finger foods, wedges, slices or strips (see page 5)	<p>Introduce slowly:</p> <ul style="list-style-type: none"> • Shellfish and other seafood • Smooth peanut butter • Salad vegetables, eg tomatoes, cucumber • Soft raw fruits, eg orange, kiwifruit, pineapple, berry fruits • Breakfast cereals, eg breakfast biscuits, porridge, infant muesli 	<p>Offer solids before milk feeds.</p> <p>Leave until after 12 months:</p> <ul style="list-style-type: none"> • Whole cows' milk as a main drink • Wholegrain muesli, rye cereals, honey

*Age of introduction provided as a guide only.
 Reference: Ministry of Health (2008). Food and Nutrition Guidelines for Healthy Infants and Toddlers (Aged 0-2).



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For more information about iron and health and/or recipes please contact:
Beef + Lamb New Zealand Inc

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