

Patient information from the BMJ Group

GORD in children

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GORD in children

It's very common for babies and young children to bring up partly digested food from their stomach. This usually doesn't cause problems and most children grow out of it. But if it happens frequently or causes problems, doctors call it gastro-oesophageal reflux disease (GORD). If your child has GORD, they may need treatment.

We've brought together the best research about GORD in children and weighed up the evidence about how to treat it. You can use our information to talk to your doctor and decide which treatments are best for your child.

What is GORD?

If your child has gastro-oesophageal reflux disease (GORD), they bring up partly digested food from their stomach into the tube that links their mouth and stomach. The tube is called the oesophagus. Sometimes food can come all the way up into the throat or mouth and the child may be sick.

A ring of muscle at the lower end of the oesophagus, where it joins the stomach, usually prevents food from being brought back up (regurgitated). The muscle is called the **lower oesophageal sphincter**. It acts like a **valve**. When you eat, the muscle opens up so that food can go from your oesophagus into your stomach. The muscle then closes up so that the food stays in the stomach until it is broken down and moves into the gut.

In babies and young children, this muscle may not work properly. So they sometimes bring up their food, and may be sick. In many children, there's nothing wrong with the muscle, and we don't fully understand why it opens when it shouldn't. ^[1]

GORD can be worrying, but most of the time it's not a serious problem. Children normally grow out of it. ^[2]

Babies and young are more likely to get GORD if: ^[3]

- The ring of muscle at the bottom of the oesophagus (the oesophageal sphincter) hasn't fully developed. This is more likely in premature babies
- The stomach gets too full

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- Part of the stomach gets pushed up into the chest, through a gap in the diaphragm (a large, thin muscle that separates the lungs and the stomach). This is called a **hiatus hernia**. If this happens, your child may need an operation to close the gap
- Food moves too slowly down the oesophagus.

When partly digested food goes up into the oesophagus, it is often quite acidic. This is because acid is produced in the stomach to help break food down, before it moves into the gut. If acid gets into the oesophagus it can make the oesophagus sore and inflamed. This is called **oesophagitis**.

What are the symptoms of GORD in children?

The most obvious symptom of GORD in children is being sick.

Most babies sometimes bring up their food. It only becomes a problem if it happens often, and if your child has other symptoms such as: ^[3] ^[4]

- Stomach pain
- Feeding difficulties
- Failure to thrive and grow
- Being irritable and crying a lot
- Frequent back-arching.

You should talk to your doctor if your baby:

- Brings up a large amount of most feeds
- Brings up vomit that looks like coffee grounds. This might mean your child's stomach or oesophagus is bleeding
- Doesn't feed properly
- Seems distressed a lot of the time
- Isn't gaining weight properly.

Older children with GORD tend to have symptoms more like those of adults, such as: ^[5]

- **Heartburn** (a burning sensation in their chest)
- Trouble swallowing

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- A lump in their throat
- Bad-tasting, watery fluid coming into the mouth.

For more, see [What are the symptoms of GORD?](#) in our section on heartburn.

There are lots of reasons why young children may have symptoms like these. Your doctor can check if it is GORD.

Your doctor will usually decide what is wrong by: ^[5]

- Examining your child
- Asking questions about your child's symptoms.

Your doctor may suggest you keep a diary of how much food your child takes, and how often food is brought back up. You may need to weigh your child regularly, or have your child weighed at the clinic, to keep a check on whether they are losing or putting on weight.

Occasionally, your doctor may refer you to see a specialist at hospital, who may do other tests such as: ^[5]

- Taking an **X-ray** of your child's oesophagus and stomach
- Measuring the amount of acid in your child's oesophagus
- Putting a narrow tube through your child's mouth and down into the oesophagus to look inside and, if necessary, taking a sample of tissue. This is called a **biopsy**.

How common is GORD in children?

It is very common for babies and young children to bring up food.

About half of babies under 3 months of age bring up food at least once a day. ^[4] Bringing up food from time to time isn't usually a problem. However, if it happens a lot, and if your child gets other symptoms, like looking uncomfortable, crying a lot, or arching their back, it's a good idea to talk to your doctor or health visitor.

Only about 14 in 100 babies under 3 months of age have frequent, persistent problems with bringing up food. ^[4]

One study found that the most common age for children to get problems with bringing up food was 5 months. ^[6] About 25 in 100 babies had a persistent problem at this age. But by the time they were 7 months old, only 7 in 100 babies still had recurrent vomiting.

What treatments work for GORD in children?

Not all children need treatment for GORD. Your child is likely to need treatment only if there are other problems, such as not growing or thriving because he or she isn't keeping down enough food.

- Thickening your baby's feed should make vomiting or bringing up food less likely. But you can't do this if you're breastfeeding.
- Infants and children are less likely to bring up their food if they have a supplement called sodium alginate mixed with their food or dissolved in water after their meals.
- If nothing else works, an operation may help. But it has risks.

Which treatments work best? We've looked at the best research and given a rating for each treatment according to how well it works.

For help in deciding which treatment is best for you, see [How to make the best decisions about treatment](#).

Treatment Group 1

Treatments for GORD in children

Treatments that are likely to work

- [Feed thickeners for infants](#)
- [Sodium alginate](#)

Treatments that work, but whose harms may outweigh benefits

- [Different sleeping positions for infants](#)
- [Metoclopramide](#)

Treatments that need further study

- [Sleeping with the head raised](#)
- [Domperidone](#)
- [H2 blockers](#)
- [Proton pump inhibitors](#)
- [Fundoplasty](#)

What will happen to my child?

Most children stop bringing up their food by the time they are 12 to 18 months old.

By the time they are 10 to 12 months old, only 1 in 30 children is still having problems and bringing up food, compared with nearly a quarter at the age of 6 months. ^[4] ^[7]

It's very rare for these problems to lead to complications. But some children do have problems. These can include: ^[3]

- An oesophagus that bleeds and is painful. The child may cough up blood, and get **anaemia** caused by the loss of blood
- Breathing problems, such as coughing, breathlessness, and wheezing
- Failure to thrive, grow, and develop at the usual rate for the child's age.

Treatments:

Feed thickeners for infants

In this section

If you thicken your baby's food, your baby is less likely to bring it back up. ^[8] You can get products to thicken milk (brand names Nestargel, Carobel) or use ready-thickened feeds (brand names Enfamil AR, SMA Staydown).

You may be able to get these from your pharmacy or on prescription from your doctor. It's always best to talk to your doctor before changing your baby's feed.

There have been quite a lot of studies on thickening feeds to treat gastro-oesophageal reflux. But some were small, didn't last very long, and weren't of very high-quality. ^[2]

In one larger study with more than 100 children aged 2 weeks to 4 months, babies who had the pre-thickened formula Enfamil AR brought food up on fewer occasions than babies who used a standard formula. Children who had the thickened feed were also less likely to choke or gag. ^[9]

Thickening feeds helps children to keep them down, but they may be more likely to:

- Cough when they have thicker feeds ^[2]
- Get **diarrhoea** if they have a feed thickened with carob flour ^[2]
- Put on too much weight. Feeds thickened with rice cereal have more **calories** than unthickened feeds. So your doctor may want you to weigh your child regularly.

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If you use a thickened feed, you'll probably need to make the hole in the teat of your child's bottle a little bigger, so that the feed will come out properly.

You can't use food thickeners if you are breastfeeding your baby. Experts recommend that you should give your baby only breast milk for the first six months, if possible. ^[10] So, if you're breastfeeding and your baby is having problems with bringing up food, your doctor may suggest you use another treatment instead, such as sodium alginate.

Sodium alginate

In this section

Babies and children are less likely to regurgitate their food if they have sodium alginate (brand name Gaviscon Infant) mixed with their feed or dissolved in water after their meal. If your child is under 12 months old, talk to your doctor before using this treatment.

Sodium alginate forms a gel in the stomach to stop acid and food going back up. It doesn't normally cause any side effects.

But it should not be given to:

- Premature babies, unless it has been prescribed by a doctor
- Children who are feverish, have **diarrhoea**, or are vomiting a lot. This is because it contains more sodium than may be good for these children
- Children whose feed is already thickened.

There haven't been many studies of sodium alginate in children with problems bringing up food. The largest study that we found looked at 90 babies under 1 year old. The babies who had sodium alginate typically vomited three times a day, compared with five times a day for those who took a dummy treatment (called a **placebo**). ^[11]

Another study, with 20 children, showed that taking sodium alginate halved the number of times that food went up from their stomach into their oesophagus each day (the oesophagus is the tube that connects the mouth to the stomach). ^[12]

But two other studies, also with small numbers of children, didn't show that children benefited from sodium alginate. ^{[13] [14]}

Different sleeping positions for infants

In this section

Lying babies on their stomach or on their left side when they go to sleep may make them less likely to bring up their food. But it's not a good idea, because putting babies to sleep

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face down increases the risk of a cot death (sometimes called [sudden infant death syndrome](#) , or SIDS).

One small study of premature babies showed that they brought up less food when sleeping on their stomach or on their left side, than when they were lying on their right side. ^[15]

But babies who sleep face down are nearly 14 times more likely to die suddenly in their sleep, and babies who sleep on their side are three-and-a-half times more likely to die suddenly in their sleep. ^[16]

So, the best advice is to put babies on their back to go to sleep. ^{[17] [18]}

Metoclopramide

In this section

Taking a medicine called metoclopramide (brand name Maxolon), may reduce the frequency of regurgitation, lessen the amount of food brought up, and improve other symptoms of GORD. ^{[2] [19]}

But it isn't used a lot for GORD as it can cause muscle spasms, especially in children. It's only used in children who have severe vomiting that won't stop. ^[20]

Metoclopramide works by tightening the ring of muscle at the end of the oesophagus where it joins the stomach (oesophageal sphincter). This helps to stop acid and food from flowing back into the oesophagus from the stomach. But there's not much evidence to show that it helps young children who bring back up their food. ^[2]

We found two studies with a total of 100 young children, which showed that metoclopramide reduced symptoms of GORD. ^[2] But the small benefits are likely to be outweighed by the risk of muscle spasms.

This treatment is usually only used if other treatments haven't worked. So you would usually only be offered it for your child if you saw a specialist.

Sleeping with the head raised

In this section

If your child sleeps with their head higher than the rest of their body (if you raise the head of the bed, for example), this may make it more difficult for acid and food to get up their oesophagus from their stomach.

But we don't know if sleeping with the head raised will help to stop children bringing up food. There hasn't been enough research and there's not much evidence to show that it helps children with GORD.

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We found a review of three small studies, which compared the effects of sleeping with the head up or lying flat, but they showed different results.

Two studies showed no benefit from keeping the head up, while one study showed that it did help. ^[2]

Domperidone

In this section

We don't know if taking a medicine called domperidone (brand name Motilium) helps children with GORD. There hasn't been enough good research. However, studies do show that it can raise the chance of serious heart problems, such as an irregular heartbeat. As a result, it is no longer approved as a treatment for GORD in the UK, either for children or adults. ^[21]

Domperidone tightens the ring of muscle at the end of the oesophagus where it joins the stomach (the oesophageal sphincter). In theory, this helps to stop acid and food flowing back into the oesophagus from the stomach.

H2 blockers

In this section

We don't know whether taking medicines called H2 blockers will help children with GORD. There has been very little good research. Talk to your doctor before trying these medicines.

H2 blockers work by reducing the amount of acid in the stomach. This means that less acid goes up into the oesophagus, where it can cause painful heartburn.

H2 blockers are often used to treat indigestion and heartburn in adults. These are some of their names (and their brand names):

- cimetidine (Tagamet)
- famotidine (Pepcid)
- nizatidine (Axid)
- ranitidine (Zantac).

But we don't know whether H2 blockers are useful in children. Only small studies have been done.

These drugs are usually only used if other treatments haven't worked. So you would usually only be offered them for your child if you saw a specialist.

Proton pump inhibitors

In this section

We don't know whether it is helpful for children with GORD to take medicines called proton pump inhibitors (PPIs). There hasn't been enough good research.

PPIs work by reducing the amount of acid in the stomach. This means that less acid goes up into the oesophagus where it can cause painful heartburn.

These medicines are often used in adults with heartburn and indigestion.

Some common PPIs (and their brand names) are:

- esomeprazole (Nexium)
- lansoprazole (Zoton)
- omeprazole (Losec, Zanol)
- pantoprazole (Protium)
- rabeprazole (Pariet).

There isn't much evidence about the use of PPIs in children. Most studies suggest that they don't improve symptoms in infants compared with a dummy treatment (placebo).

[\[22\]](#) [\[23\]](#) [\[24\]](#)

You can buy omeprazole yourself from a pharmacy, but it's not recommended for anyone under 18. It's best to talk to your doctor first, rather than giving this medicine to your child yourself.

These drugs are usually only used if other treatments haven't worked. So you would usually only be offered them for your child if you saw a specialist.

Fundoplication

In this section

If your child has very bad problems with GORD and other treatments haven't helped, your doctor may suggest your child has an operation. The operation is carried out to strengthen the valve between the child's oesophagus and stomach (the oesophageal sphincter). But we don't know how well the operation works because there hasn't been any good research. ^[25]

During the operation, called **fundoplication**, the upper part of the stomach is pulled up and wrapped around the lower part of the oesophagus. It is then stitched in place. The

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result is that part of the oesophagus passes through a ring of tight stomach muscle. This helps to keep the oesophageal sphincter closed, so that acid and food cannot go up into the oesophagus from the stomach.

We found some reports of children who'd had the operation. After the operation about 9 in 10 of these children no longer brought up food.^[26] ^[27] But we don't know if they would have got rid of their problems without surgery. The studies didn't compare them with children who didn't have an operation.

Having an operation always carries a risk of problems, such as infection or blood clots. In one study, up to 8 in 100 children died after surgery for severe GORD. All the children who died had other disabilities as well.^[26]

Further informations:

Glossary:

valve

A valve is a piece of tissue, located in a tube or passageway in your body, that keeps materials or fluid flowing in one direction, by preventing them from flowing backwards. There are valves in your veins, for example, which keep blood flowing towards your heart and stop blood from flowing back away from your heart.

inflammation

Inflammation is when your skin or some other part of your body becomes red, swollen, hot, and sore. Inflammation happens because your body is trying to protect you from germs, from something that's in your body and could harm you (like a splinter) or from things that cause allergies (these things are called allergens). Inflammation is one of the ways in which your body heals an infection or an injury.

heartburn

Heartburn is a painful, burning sensation in the chest. It happens, often after meals, when the contents of the stomach pass back up into the oesophagus. The oesophagus is the tube that runs from the mouth to the stomach.

X-ray

X-rays are pictures taken of the inside of your body. They are made by passing small amounts of radiation through your body and then onto film.

biopsy

Biopsy is when doctors remove some tissue from a part of your body, so that it can be examined under a microscope.

anaemia

Anaemia is when you have too few red blood cells. Anaemia can make you get tired and breathless easily. It can also make you look pale. Anaemia can be caused by a number of different things, including problems with your diet, blood loss and some diseases.

diarrhoea

Diarrhoea is when you have loose, watery stools and you need to go to the toilet far more often than usual. Doctors say you have diarrhoea if you need to go to the toilet more than three times a day.

calories

A calorie is a unit that is used to tell how much energy is found in food. But when we talk about how many calories food contains, we actually mean kilocalories, or kcal, which contain 1,000 'small' calories. When your body stores energy instead of using it, you get heavier. This is why you gain weight if you eat foods that are high in calories and the energy is stored instead of used. If your daily calorie intake is the same as the amount of energy your body uses up, your weight will remain the same. If you consume more calories than your body uses, you put on weight. Foods containing fat are high in calories.

placebo

A placebo is a 'pretend' or dummy treatment that contains no active substances. A placebo is often given to half the people taking part in medical research trials, for comparison with the 'real' treatment. It is made to look and taste identical to the drug treatment being tested, so that people in the studies do not know if they are getting the placebo or the 'real' treatment. Researchers often talk about the 'placebo effect'. This is where patients feel better after having a placebo treatment because they expect to feel better. Tests may indicate that they actually are better. In the same way, people can also get side effects after having a placebo treatment. Drug treatments can also have a 'placebo effect'. This is why, to get a true picture of how well a drug works, it is important to compare it against a placebo treatment.

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