

# Gastroesophageal Reflux in Infants

*National Digestive Diseases Information Clearinghouse*



National  
Institute of  
Diabetes and  
Digestive  
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## What is gastroesophageal reflux (GER)?

Gastroesophageal reflux (GER) occurs when stomach contents reflux, or back up, into the esophagus during or after a meal. The esophagus is the tube that connects the mouth to the stomach. A ring of muscle at the bottom of the esophagus opens and closes to allow food to enter the stomach. This ring of muscle is called the lower esophageal sphincter (LES). The LES normally opens to release gas after meals. With infants, when the LES opens, stomach contents often reflux into the esophagus and out the mouth, resulting in regurgitation, or spitting up, and vomiting. GER can also occur when babies cough, cry, or strain.

## What are the symptoms of GER?

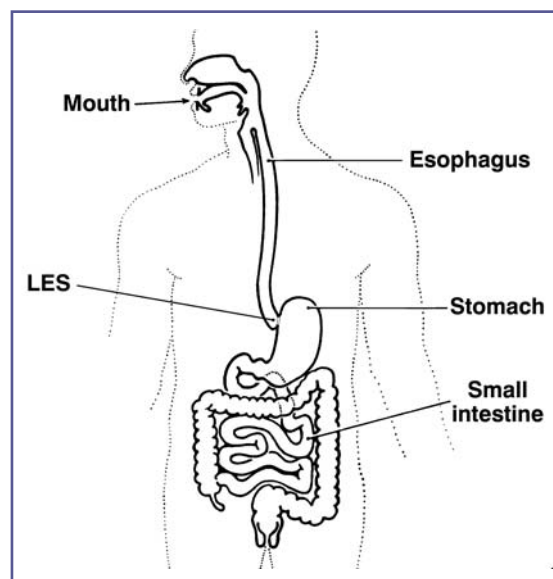
GER is common in healthy infants. More than half of all babies experience reflux in the first 3 months of life, but most stop spitting up between the ages of 12 to 24 months. Only a small number of infants have severe symptoms. An infant with GER may experience

- spitting up
- vomiting
- coughing
- irritability
- poor feeding
- blood in the stools

In a small number of babies, GER results in symptoms that cause concern. These symptoms include

- poor growth due to an inability to hold down enough food
- irritability or refusing to feed due to pain
- blood loss from acid burning the esophagus
- breathing problems

These problems can be caused by disorders other than GER. Your health care provider will need to determine whether GER is the cause of your child's symptoms.



*Digestive system noting the mouth, esophagus, lower esophageal sphincter (LES), stomach, and small intestine.*



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## How is GER diagnosed?

An infant who is consistently spitting up or vomiting may have GER. The doctor or nurse will talk with you about your child's symptoms and examine your child. Tests may be ordered to help determine whether your child's symptoms are related to GER. Sometimes treatment is started without tests. If the infant is healthy, content, and growing well, often no tests or treatment are needed.

## What is the treatment for GER?

The treatment for reflux depends on an infant's symptoms and age. Some babies may not need treatment because GER often resolves by itself. Healthy babies may only need their feedings thickened with cereal and to be kept upright after eating. Overfeeding can aggravate reflux, so your health care provider may suggest different ways of handling feedings. For example, smaller quantities with more frequent feedings can help decrease the chances of

regurgitation. If a food allergy is suspected, you may be asked to change the baby's formula. Breastfeeding mothers may be asked to change their own diets for 1 to 2 weeks. If a child is not growing properly, higher-calorie food or tube feeding may be recommended.

When an infant is uncomfortable, has difficulty sleeping or eating, or does not grow, your health care provider may suggest a trial of medication to decrease the amount of acid in the stomach. Any potential complications related to the medication will be explained. However, most infants don't need medication and outgrow reflux by 1 or 2 years of age.

\* If medication is needed, treatment will often start with a class of medications called H2-blockers, also called H2-receptor agonists. These drugs help keep acid from backing up into the esophagus. H2-blockers are often used to treat children with GER because they come in liquid form. H2-blockers include

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

A second class of medications often used to reduce stomach acid is proton-pump inhibitors (PPIs), which block the production of stomach acid. PPIs include

- esomeprazole (Nexium)
- omeprazole (Prilosec)
- lansoprazole (Prevacid)
- rabeprazole (Aciphex)
- pantoprazole (Protonix)

\* The authors of this fact sheet do not specifically endorse the use of drugs for children that have not been tested in children ("off label" use). Such a determination can only be made under the recommendation of the treating health care provider.

### **Call your child's health care provider right away if any of the following occur:**

- vomiting large amounts or persistent projectile (forceful) vomiting, particularly in infants younger than 2 months old
- vomiting fluid that is green or yellow or that looks like coffee grounds or blood
- difficulty breathing after vomiting or spitting up
- refusing food that seems to result in weight loss or poor weight gain
- excessive crying and irritability

## Specific Instructions for Infants with GER

- If you feed your baby with a bottle, add up to 1 tablespoon of rice cereal to 2 ounces of infant milk. You can add cereal to expressed milk if you are breastfeeding. If the mixture is too thick for your baby you can change the nipple size or cut a little “x” in the nipple.
- Burp your baby after he’s consumed 1 or 2 ounces of formula. For breast-fed infants, burp after feeding on each side.
- Do not overfeed. Talk with your infant’s doctor or nurse about the amount of formula or breast milk that your baby is consuming.
- When possible, hold your infant upright in your arms for 30 minutes after feedings.
- Infants with GER should usually sleep on their backs, as is suggested for all infants. Rarely, a physician may suggest alternative sleep positions.

## Points to Remember

- GER occurs when stomach contents back up into the esophagus.
- GER is common in infants but most grow out of it.
- In infants, GER may cause spitting up, vomiting, coughing, poor feeding, or blood in the stools.
- Treatment depends on the infant’s symptoms and age and may include changes in eating and sleeping habits. Medication may also be an option. Only rarely and in severe cases is surgery required.

## Hope Through Research

The National Institute of Diabetes and Digestive and Kidney Diseases, through its Division of Digestive Diseases and Nutrition, supports basic and clinical research into gastrointestinal diseases. Researchers are studying the risk factors for developing GER and what causes the LES to open, with the aim of improving future treatment for GER. They are also studying the efficacy and safety of drug therapy for the treatment of GER in children and investigating the effectiveness of medications compared with surgery.

## For More Information

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