CONDITION

Gastroesophageal reflux disease - children

Gastroesophageal reflux disease in children is repeated stomach reflux that causes troublesome symptoms or complications.

WHAT IT IS
Frequent stomach reflux causing troublesome symptoms or complications

BODY SYSTEM
Digestive system

MAIN SYMPTOMS
Heartburn, regurgitation, vomiting, feeding or swallowing problems

WHAT CAUSES IT
Weak or relaxed valve between stomach and esophagus

HOW IT IS DIAGNOSED
Clinical assessment; pH-impedance or endoscopy when needed

MAIN TREATMENT
Feeding changes, lifestyle measures, and acid-reducing medicines

CAN IT BE CURED?
Sometimes - often improves with growth or treatment

IS IT AN EMERGENCY?
Sometimes - breathing trouble, green vomit, or severe bleeding

LONG-TERM OUTLOOK
Most children improve; some need ongoing follow-up

Overview

Gastroesophageal reflux happens when stomach contents move backward into the esophagus, sometimes reaching the throat or mouth.

Reflux is common in healthy babies because their digestive system is still developing, they drink liquids, and they spend much of their time lying down. A baby who spits up but is comfortable, feeds well, and grows normally usually has uncomplicated reflux.

Gastroesophageal reflux disease, or GERD, means reflux regularly causes troublesome symptoms or complications, such as pain, feeding difficulty, inflammation of the esophagus, or poor weight gain.

Older children and teenagers may report heartburn, an acidic taste, or food returning to the

throat. Because other conditions can cause similar symptoms, assessment considers the child's age, growth, diet, medicines, and general health.

Symptoms

Babies cannot describe heartburn, so feeding, growth, and behavior provide important clues. Possible symptoms include:

Crying and irritability alone do not show that a baby has GERD.

Older children and teenagers may experience:

Cough, hoarseness, wheezing, and dental enamel damage can occur with reflux, but they have many other possible causes.

Green vomit, blood in vomit, forceful vomiting, a swollen abdomen, or significant breathing trouble are not typical of uncomplicated reflux and need prompt medical assessment.

- Frequent regurgitation or vomiting with discomfort
- Refusing feeds, pulling away, or crying during feeding
- Arching during or after feeds
- Coughing, gagging, or repeated swallowing while feeding
- Poor weight gain or slow growth
- Heartburn
- Sour or bitter liquid in the throat or mouth
- Upper abdominal or chest discomfort
- Nausea, belching, or repeated regurgitation
- Pain or difficulty when swallowing
- Symptoms that worsen after meals or when lying down

Causes and risk factors

The lower esophageal sphincter is a ring of muscle between the esophagus and stomach. Reflux occurs when it relaxes at the wrong time or does not form a strong barrier.

In babies, this muscle is still developing. Reflux often decreases as they grow, spend more time upright, and begin eating solid food.

Factors associated with a higher risk of GERD include:

Cow's milk protein allergy can resemble reflux, especially in babies, but it is a separate condition. It may also cause blood in the stool, eczema, or other symptoms.

- Premature birth
- Obesity in older children
- Hiatal hernia
- Conditions affecting muscles, nerves, or development
- Previous upper digestive system surgery
- Certain medicines
- Tobacco smoke exposure

Diagnosis

Diagnosis usually begins with a medical history and physical examination. A healthcare professional may ask about feeding, vomiting, pain, bowel movements, medicines, growth, and when symptoms occur.

For babies, feeding amount, technique, formula preparation, and weight gain can help distinguish uncomplicated reflux from a condition needing investigation.

Many children with typical symptoms do not need tests. Persistent, unusual, or treatment-resistant symptoms may be investigated with:

Other possible causes include food allergy, eosinophilic esophagitis, infection, constipation, migraine-related vomiting, and structural blockage.

- Esophageal pH-impedance monitoring: A thin tube measures acidic and non-acidic reflux over about a day and compares episodes with symptoms.
- Upper endoscopy: A flexible camera examines the upper digestive tract. Small tissue samples may be taken.
- Contrast imaging: X-rays taken after swallowing contrast can identify structural problems but do not usually confirm GERD.
- Swallowing or stomach-emptying studies: These may be used if aspiration, choking, or delayed stomach emptying is suspected.

Treatment and management

Treatment depends on age, symptoms, growth, and complications. Its goals are to reduce discomfort, support feeding and growth, and heal esophageal irritation.

For babies, a feeding review may identify feeds that are too large or frequent. Smaller, appropriately spaced feeds may help while still providing enough nutrition. Thickened feeds can reduce visible regurgitation in selected babies, but the product and method should be discussed with a qualified healthcare professional.

Breastfeeding can usually continue. A breastfeeding parent's diet should not be restricted routinely. A supervised cow's milk protein exclusion trial may be considered if allergy is suspected.

Babies must always sleep flat on their backs on a firm, level surface. Stomach or side sleeping, sleep positioners, wedges, and raising the head of a cot are not safe reflux treatments.

Older children may benefit from avoiding very large meals and not lying down immediately after eating. Excess weight should be addressed with age-appropriate, non-shaming support. Foods should only be removed if they consistently trigger symptoms; possible triggers include fatty foods, chocolate, caffeine, acidic foods, and spicy foods.

Proton pump inhibitors and histamine-2 receptor blockers may be prescribed for acid-related GERD or esophageal inflammation. They reduce acidity but do not stop every reflux episode.

These medicines are not routinely helpful for ordinary infant spitting up or unexplained crying. Treatment should be reviewed to check whether it works and remains necessary. Long-term acid suppression can have unwanted effects and should not continue without follow-up.

Surgery is uncommon. Fundoplication may be considered for severe, confirmed reflux with major complications when other treatments have failed. It can cause lasting side effects and may not stop every symptom.

Complications

Most childhood reflux causes no lasting harm. GERD can inflame the esophagus, causing pain, bleeding, or difficulty swallowing. Repeated inflammation can rarely narrow the esophagus, making food feel stuck.

Other possible complications include dental enamel damage, food refusal, limited intake, and poor growth.

Aspiration occurs when liquid or food enters the airway. Repeated coughing or breathing problems need careful assessment because reflux is not always the cause.

Barrett's esophagus is rare in children and mainly affects selected children with severe, long-standing GERD or other medical conditions.

Prevention

GERD cannot always be prevented. Appropriate feeding amounts may reduce reflux from an overly full stomach. Older children can avoid lying down soon after meals if this triggers symptoms.

Supporting healthy growth and avoiding tobacco smoke may help. Safe-sleep guidance must always take priority over attempts to position a sleeping baby for reflux.

Living with it and what to expect

Infant reflux often improves during the first year as the digestive system matures and the baby sits upright and starts solid foods. Persistent pain, feeding problems, or poor growth should be reviewed rather than assumed to be normal.

Older children may have symptoms that come and go. A short record of meals and symptoms can help identify patterns without encouraging unnecessary food restrictions.

Children with esophageal inflammation or long-term medicine use may need follow-up to review growth, swallowing, symptom control, and whether treatment remains necessary. Those with developmental, neurological, or structural conditions may need longer-term specialist care.

Most children can attend school, play sports, travel, and eat a broad diet. Schools may need information about medicines or significant feeding and swallowing difficulties.

When to get medical help

Arrange a routine appointment if symptoms repeatedly cause pain, interrupt sleep, affect eating, or interfere with school or daily activities. Babies should be assessed if they seem distressed during feeds, refuse feeds, or are not gaining weight as expected.

Seek prompt medical advice if a child has:

Call emergency services for serious trouble breathing, blue or gray lips or skin, collapse, reduced responsiveness, or vomiting a large amount of blood.

These signs may indicate another condition needing urgent assessment rather than severe

GERD.

- Pain or difficulty swallowing
- Food that seems to stick
- Repeated forceful vomiting
- Green or yellow-green vomit
- Blood in vomit or black, tar-like stool
- A swollen or very tender abdomen
- Signs of dehydration, such as much less urine, dry mouth, or unusual sleepiness
- Vomiting with fever, severe headache, or marked lethargy
- New vomiting beginning after 6 months of age or continuing well beyond infancy

Common questions

Is reflux the same as GERD in a baby?

No. Reflux is common in healthy babies. It is called GERD when it causes troublesome symptoms, poor growth, esophageal injury, or another complication.

When do babies usually grow out of reflux?

Many improve during the first year as they mature, sit upright, and begin solid foods. Symptoms that remain painful, affect feeding, or continue beyond infancy should be reassessed.

Does infant reflux medicine stop spitting up?

Not necessarily. Acid-reducing medicine like omeprazole or lansoprazole makes reflux less acidic but may not stop milk coming back up. It is not routinely used for a comfortable, growing baby who spits up.

Should I raise the head of my baby's cot?

No. Babies should sleep flat on their backs on a firm, level surface. Wedges, positioners, inclined cots, and side or stomach sleeping are not safe reflux treatments.

Which foods should a child with GERD avoid?

There is no single GERD diet. Avoid a food only when it repeatedly triggers symptoms. Broad restrictions can reduce nutrition and make meals stressful.

Can childhood GERD cause permanent damage?

Most children do not develop permanent damage. Severe or long-standing GERD can inflame or narrow the esophagus. Follow-up is important for painful swallowing, food sticking, bleeding, poor growth, or confirmed esophagitis.

Sources

- Rosen R, Vandenplas Y, Singendonk M, et al. Pediatric Gastroesophageal Reflux Clinical Practice Guidelines: Joint Recommendations of NASPGHAN and ESPGHAN . Journal of Pediatric Gastroenterology and Nutrition . 2018;66(3):516-554.
- National Institute of Diabetes and Digestive and Kidney Diseases. Acid Reflux (GER and GERD) in Children . Symptoms, diagnosis, and treatment information.
- National Institute for Health and Care Excellence. Gastro-oesophageal reflux disease in children and young people: diagnosis and management . NICE guideline NG1.
- Lightdale JR, Gremse DA, American Academy of Pediatrics Section on Gastroenterology, Hepatology, and Nutrition. Gastroesophageal Reflux: Management Guidance for the Pediatrician . Pediatrics . 2013;131(5):e1684-e1695.
- Moon RY, Carlin RF, Hand I, American Academy of Pediatrics Task Force on Sudden Infant Death Syndrome. Sleep-Related Infant Deaths: Updated 2022 Recommendations for Reducing Infant Deaths in the Sleep Environment . Pediatrics . 2022;150(1):e2022057990.