GER & GERD in Infants

Gastroesophageal reflux (GER) happens when stomach contents come back up into the esophagus. Infants—babies younger than 2 years—with GER spit up liquid mostly made of saliva and stomach acid. Stomach acid that touches the lining of the infant's esophagus can cause heartburn, also called acid indigestion.

GER is common in infants. About half of all infants spit up, or regurgitate, many times a day in the first 3 months of their lives. In most cases, infants stop spitting up between the ages of 12 and 14 months.[1]

Doctors also refer to GER as

- acid indigestion
- acid reflux
- acid regurgitation
- heartburn
- reflux

GERD is a more serious and long-lasting form of GER in which acid reflux irritates the esophagus.

Difference between GER and GERD

Infants with symptoms that prevent them from feeding or those with GER that lasts more than 12 to 14 months may actually have GERD. If you think your infant has GERD, you should take him or her to see a doctor or a pediatrician.

GERD is common in infants. Two-thirds of 4-month-olds have symptoms of GERD. By 1 year old, up to 10 percent of infants have symptoms of GERD.[1]

Symptoms of GERD in infants

The main symptom of gastroesophageal reflux disease (GERD) in infants is spitting up more than they normally do. Infants with GERD can also have some or all of the following recurring symptoms:

- arching of the back, often during or right after feeding
- colic—crying that lasts for more than 3 hours a day with no medical cause
- coughing
- gagging or trouble swallowing
- irritability, particularly after feeding
- pneumonia—an infection in one or both of the lungs
- poor feeding or refusal to feed
- poor growth and malnutrition
- poor weight gain
- trouble breathing
- vomiting
- weight loss
- wheezing—a high-pitched whistling sound that happens while breathing

Causes

Gastroesophageal reflux (GER) happens when an infant's lower esophageal sphincter is not fully developed, and the muscle lets the stomach contents back up the esophagus. Once the stomach contents move up into the esophagus, the infant will regurgitate, or spit up. Once an infant's sphincter muscle fully develops, he or she should no longer spit up.

GERD happens when an infant's lower esophageal sphincter muscle becomes weak or relaxes when it shouldn't. This weakness or relaxation lets the stomach contents come back up into the esophagus.

Call a doctor right away if an infant

- vomits large amounts
- has regular projectile, or forceful, vomiting, particularly in infants younger than 2 months
- vomits fluid that is
    - ❏ green or yellow
    - ❏ looks like coffee grounds
    - ❏ contains blood
- has problems breathing after vomiting or spitting up
- often refuses feedings, causing weight loss or poor growth
- cries 3 or more hours a day and is more irritable than usual
- shows signs of dehydration, such as having dry diapers or extreme fussiness

Diagnosis

Initial gastroesophageal reflux (GER) diagnoses Is based on infant's symptoms and medical history. If symptoms of GER do not improve with feeding changes and anti-reflux medicines, further testing may be needed.

Several tests can help a doctor diagnose GERD and depending on the severity of the condition the doctor may order more than one test to make a diagnosis.

Upper gastrointestinal (GI) endoscopy and biopsy

In an upper GI endoscopy, a gastroenterologist, surgeon, or other trained health care professional uses an endoscope to see inside an infant's upper GI tract. This procedure takes place at a hospital or an outpatient center. A health care professional will use an upper GI endoscopy especially if an infant has growth or breathing problems.

An intravenous (IV) needle is placed into one of the veins in the infant's arms, hands, or feet to give him or her medicines to keep him or her relaxed during the endoscopy procedure. The infant will receive extra oxygen throughout the procedure. The health care professional carefully feeds the endoscope down the infant's esophagus and into the stomach and duodenum. A small camera mounted on the endoscope sends a video image to a monitor, allowing close examination of the lining of the upper GI tract. The endoscope pumps air into the infant's GI tract, making them easier to see.

The doctor may perform a biopsy with the endoscope by taking a small piece of tissue from the lining of the infant's esophagus. He or she won't feel the biopsy. A pathologist examines the tissue in a lab.

In most cases, the procedure only diagnoses GERD if the infant has moderate to severe symptoms

Upper GI series

An upper GI series looks at the shape of an infant's upper GI tract.
An x-ray technician performs this procedure at a hospital or an outpatient center. A radiologist reads and reports on the x-ray images. The infant doesn't need anesthesia. If possible, you shouldn't feed the infant before the procedure. Check with the doctor about what to do to prepare the infant for an upper GI series.
During the procedure, a health care professional will give the infant liquid contrast (barium) in a bottle or mixed with food to coat the inner lining of the upper GI tract. The x-ray technician takes several x-rays as the contrast moves through the GI tract. The technician or radiologist will often change the position of the infant to get the best view of the GI tract. The barium shows up on the x-ray and can help find problems related to GERD.
For several days afterward, the infant may have white or light-colored stools from the barium. A health care professional will give you specific instructions about the infant's feeding and drinking after the procedure.

Esophageal pH and impedance monitoring

The most accurate procedure to detect acid reflux is esophageal pH and impedance monitoring. Esophageal pH and impedance monitoring measures the amount of acid or liquid in an infant's esophagus while he or she does normal things, such as eating and sleeping.
This procedure takes place at a hospital or outpatient center. A nurse or physician places a thin flexible tube through the infant's nose into the stomach. The tube is then pulled back into the esophagus and is secured in place with tape to the infant's cheek. The end of the tube in the esophagus measures when and how much acid or liquid comes into the esophagus from the stomach. The other end of the tube attaches to a monitor outside his or her body that records the measurements. The placement of the tube is sometimes done while a child is sedated after an upper endoscopy, but can be done while an infant is fully awake.
Most infants will stay overnight in the hospital for 24 hours after the tube is placed.
This procedure is most useful to the doctor if you keep a diary of when, what and how much food the infant ate and his or her GERD symptoms after feeding. The gastroenterologist can see how the symptoms, certain foods, and certain times of day relate to one another. The procedure can also show whether or not reflux triggers any breathing problems.

Treatment

Treatment for GERD depends on an infant's symptoms and age and may involve feeding changes, medicines, or surgery.

Feeding changes

A doctor may first recommend treating an infant's GERD by changing the way you feed him or her. The doctor may suggest that you

- Add up to 1 tablespoon of rice cereal for every 2 ounces of formula in the infant's bottles. If the mixture is too thick, you can change the nipple size or cut a little "x" in the nipple to make the opening larger. Do not change formulas unless the doctor tells you to.
- Add rice cereal to breast milk stored in a bottle for breastfed babies.
- Burp infants after they have 1 to 2 ounces of formula, or burp breastfed infants after nursing from each breast.
- Avoid overfeeding infants. Follow the amount of formula or breast milk recommended.
- Hold infants upright for 30 minutes after feedings.
- Try putting infants on a hydrolyzed protein formula for 2 to 4 weeks if the doctor thinks he or she may be sensitive to milk protein. The protein content of this type of formula is already broken down or "predigested."

Over-the-counter and prescription medicines

A doctor may recommend medicines that treat GERD by decreasing the amount of acid in the infant's stomach. The doctor will only prescribe a medicine if the infant still has regular GERD symptoms and if

- you have tried making feeding changes
- the infant has problems sleeping or feeding
- the infant does not grow properly

The doctor will often prescribe a medicine on a trial basis and will explain any possible complications. You shouldn't give an infant any medicines unless told to do so by a doctor.

H2 blockers: H2 blockers decrease acid production. They provide short-term or on-demand relief for infants with GERD symptoms. They can also help heal the esophagus.
A doctor may prescribe an H2 blocker, such as

- cimetidine (Tagamet HB)
- famotidine (Pepcid AC)
- nizatidine (Axid AR)
- ranitidine (Zantac 75)

Proton pump inhibitors (PPIs): PPIs lower the amount of acid the infant's stomach makes. PPIs are better at treating GERD symptoms than H2 blockers. They can heal the esophageal lining in infants. Doctors often prescribe PPIs for long-term GERD treatment.
An infant needs to be given these medicines on an empty stomach so that his or her stomach acid can make them work.
Several types of PPIs are available by a doctor's prescription, including

- esomeprazole (Nexium)
- lansoprazole (Prevacid)
- omeprazole (Prilosec, Zegerid)
- pantoprazole (Protonix)

- rabeprazole (AcipHex)

Surgery

A pediatric gastroenterologist will only use surgery to treat GERD in infants in severe cases. Infants must have severe breathing problems or a physical problem that causes GERD symptoms for surgery to be an option.