

Gastroesophageal Reflux: A Cause of Breathing Problems in Children

Gastroesophageal reflux happens when food that has been swallowed comes back up from the stomach and into the esophagus. Children and adults have some reflux every day. When a baby spits up, that is reflux. Reflux often causes no problems or pain. In fact, most of the time we don't know when it happens. Reflux is a concern only when there is too much of it or it causes problems.

What causes reflux?

Most of the time, when we swallow, food goes down the throat through the esophagus and into the stomach. The esophageal sphincter is a muscle at the bottom of the esophagus that relaxes so food can enter the stomach. Then it closes to keep stomach contents from going back into the esophagus. Reflux may occur if this muscle relaxes at the wrong time or relaxes too much. The stomach makes acid to help digest the food we eat. When someone has reflux, the acid comes up along with the food. Because of this acid when someone has reflux the esophagus or the airway may become irritated.

How does gastroesophageal reflux cause breathing problems?

When the stomach contents go back up the esophagus, the contents may enter the nose, trachea (windpipe) or lungs. Aspiration occurs when stomach contents, liquids or food enters the lungs.

What are the symptoms of reflux?

Adults may complain of heartburn, indigestion or a feeling that food is stuck in the throat. While we think babies may have the same symptoms, we don't know for sure. The most common symptoms that babies seem to have with reflux are vomiting and colicky pain. They also may have symptoms such as:

- Wheezing (a whistling sound when breathing). This may be constant or occasional
- Chest congestion or rattling (noisy breathing)
- Choking or gagging
- Apnea (stop breathing for 20 seconds or longer)

In older children, reflux may cause:

- Croup (high-pitched, barking cough)
- Frequent cough
- Hoarseness and other problems with the voice box
- Poorly controlled asthma

Breathing problems that may cause reflux in children include:

- Bronchopulmonary dysplasia
- Cystic fibrosis
- Asthma



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Diagnosing Reflux

Most of the time, just by hearing the parents' story and seeing the child is enough to make the diagnosis. Sometimes we may need to do some tests. The two most common tests used to diagnose reflux are the barium swallow (also called upper GI series or esophagram) and the pH probe test.

- **Barium swallow** is a special x-ray. The child swallows a chalky-white liquid called barium that can be seen on x-rays. A video x-ray machine follows the barium so doctors can see if there are twists, kinks or narrow spaces in the upper bowels (intestines). It also may show the barium move from the stomach back into the esophagus. If this is seen during the barium swallow, it often means that reflux is causing the problem. Yet, there are many children who have severe reflux and show a normal barium swallow.
- **pH probe** is a small tube with a sensor device on the end. It goes through the child's nose and down to the top of the stomach. The sensor measures the acid that leaves the stomach. The sensor may be left in place for about 24 hours. The pH probe is more accurate than the barium swallow for finding reflux. But some children with breathing problems caused by reflux may have a normal pH probe result.

No test is 100% accurate. Sometimes the best way to diagnose reflux is to treat it with medication and see if the symptoms improve.

Treating Reflux

In most cases, the baby's reflux will get better on its own. This often happens between 6 and 12 months of age, when the baby sits up more often and eats more solid foods. But reflux may last longer than a year. Some children may get reflux later on or never outgrow it. Some infants who have wheezing caused by reflux may get asthma. Also, colds and other respiratory infections might make reflux worse.

Common treatments for reflux include:

- **Positioning:** Infants with reflux should not be slumped in an infant seat. This increases the pressure in their stomachs and could worsen reflux. Some infants do best when lying on their stomach. It may help to raise the head of the crib slightly. The American Academy of Pediatrics suggests that most babies sleep on their backs because it may lower the chances for SIDS (sudden infant death syndrome) but an exception is made for children with reflux. Ask your doctor if this position is recommended for your child.
- **Diet:** Many people think spitting up and other problems that may be due to reflux are caused by allergies or milk sensitivity, yet that is often not the problem. If your baby's formula was changed and it has helped, you should stick with it. Most infants with reflux are better off if they drink less fluids and take more solids. Babies who drink formula should drink no more than one can of formula (26 to 32 ounces) each day. It is best to give it in small amounts (four to six ounces each feeding). It also helps to thicken the formula with rice cereal (one tablespoon per ounce of formula). You may need to make a larger hole in the nipple. If you are breastfeeding, please continue to do so. Ask your doctor about adding solids to your baby's diet. Older children should avoid spicy foods, caffeinated drinks (including sodas and tea), and chocolate.
- **Medicine:** Medication is the most common treatment for reflux. Some decrease stomach acid, while others help the stomach empty more quickly.

Common medications prescribed for reflux are:

Zantac (ranitidine) is the drug most often used to decrease stomach acid. It comes as a liquid and is given two to four times each day. It has no major side effects.

Prilosec (omeprazole) may work better to decrease stomach acid and is given one to two times each day. It only comes in capsule form. The capsule can be opened and the powder sprinkled into food. This drug has no major side effects.

Reglan (metoclopramide) helps the stomach empty more quickly. It is taken four times each day, 15 to 30 minutes before each meal and at bedtime. Rarely, Reglan may cause side effects. Young infants may have tense or stiff muscles. Children with epilepsy seem to have a greater risk of having seizures when taking Reglan.

- **Surgery:** Children who still have severe breathing problems in spite of taking medication may need surgery to control reflux. In those very few children who do need surgery, the most common surgery is called a Nissen fundoplication. With this surgery, the top part of the stomach (the fundus) is wrapped around the bottom of the esophagus to create a collar. Then every time the stomach contracts (squeezes), the collar around the esophagus squeezes to prevent reflux.