DIAGNOSING REFLUX

What is GERD?

Gastroesophageal reflux disease (GERD), is what happens when acid in the stomach—and sometimes nonacidic stomach contents—flow into the esophagus, the tube that carries food from the mouth to the stomach, causing uncomfortable symptoms.

After your baby swallows, milk moves down the esophagus with the help of muscle contractions. It is then deposited into the stomach, where digestion continues. In babies with GERD, the lower esophageal sphincter—a ring of muscles that acts as a valve between the esophagus and stomach—is often not functioning correctly. As a result, stomach acid and food particles are able to reflux, or flow back, into the esophagus.

How is GERD diagnosed?

Most often, GERD is a symptom based diagnosis. If symptoms are typical of reflux disease then it is often the case that treatment will be started prior to any testing. If your baby responds well to treatment then it may even be the case that no testing is needed at all, unless the doctor has reason to believe there may be another medical condition at play.

Reflux is one thing. As we know, spitting up is quite common in young children and in babies who are otherwise happy and healthy, not usually a reason to be concerned. When the reflux is continuous over time and causes painful and uncomfortable symptoms? That's when it becomes GERD. The clinical definition is when four or more symptoms last longer than four weeks and are impacting quality of life and/or causing pain.

There are also several other conditions that fit under the GERD umbrella:

Infant NERD (non erosive reflux disease)
If the pain associated with reflux disease is not accompanied by any damage to the esophagus, this condition is known as non-erosive reflux disease or NERD

Infant EERD (erosive esophageal reflux disease)
If the reflux is causing inflammation and ulceration of the esophagus, this condition is known as erosive esophagitis. Untreated, this can lead to a precancerous condition known as Barrett's esophagus.

Infant LPR (laryngopharngeal reflux, commonly known as silent reflux disease)
Silent reflux occurs when stomach acid travels up the esophagus and into the throat. Although babies with silent reflux may not spit up at all, it is often said 'silent reflux isn't silent!' Babies suffering from this condition may cry excessively and be hard to console due to the resulting pain. Silent reflux is often seen in babies in conjunction with conditions such as laryngomalacia.

The laryngeal tissues are not meant to withstand acid the way that our stomachs are and repeated acid exposure tends to cause swelling. Increased swelling and ulceration then results in further collapsing of these tissues into the airway and causes further obstructive symptoms. The longer these tissues are exposed to acid the more laryngeal sensation is dulled or inhibited. This can lead to worrying symptoms such as coughing and choking during feedings- both which are common with laryngomalacia.

The primary symptoms of LPR/silent reflux tend to be felt in the throat and include:

- Hoarseness
- Sore throat
- Stridor
- Wheezing
- Apnea
- Difficulty swallowing
- The sensation of mucous in the throat and/or post-nasal drip
- Laryngomalacia

More generally, there are a number of symptoms that can impact any infant with GERD. Keeping track of these helps create an invaluable record and a clear picture of your baby's reflux that you can share with their healthcare practitioner and use to guide treatment.

Mild to moderate GERD symptoms in infants can include:

- Crying during or directly after eating
- Crying when laying flat
- Difficulty sleeping unless inclined
- Excessive gas
- Excessive nursing/comfort feeding
- Consistent fussiness, irritability and/or restlessness
- Sneezing regularly without presence of colds/illness
- Spitting up
- Spitting up through the nose
- Recurring or abundant hiccups
- Wet burping
- Rubbing nose/hitting nose and face
- General malaise or listlessness
- Grunting
- Gulping/hard swallowing
- Sleep apnea and snoring
- Shaking head back and forth or up and down
- Twisting body, which may be especially noticeable after feedings

Moderate to Severe GERD symptoms in infants can include:

- Gagging and choking (before, during and/or after feedings)
- Asthma
- Recurrent upper respiratory infections
- Ear Infections / Hearing Loss
- Bradycardia (slower than normal heart rate)
- Episode of BRUE (Brief Resolved Unexplained Event)
- Inconsolable crying
- Chronic cough
- Dehydration
- Failure to thrive
- Pneumonia
- Interruptions in breathing
- Sandifer's Syndrome (can resemble seizure-like activity)
- Swollen throat/ bleeding esophagus
- Projectile vomiting
- Feeding aversions

What kind of testing is available?

In babies and young children, GERD is often a symptoms based diagnosis. In some cases further testing may be necessary. Here are some of the tests your child may be offered.

Barium Swallow/ Swallow Study

A barium swallow test, also called an upper GI series, is an X-ray test to examine the upper digestive tract. During this procedure, your baby will drink a small dose of liquid barium, which temporarily coats the lining of the esophagus, the stomach, and the intestines and is illuminated on X-rays. The barium allows a radiologist to examine these structures as the liquid goes down. A barium swallow is often used along with other tests to give your baby's doctor more information about the esophagus and can help diagnose any swallowing problems.

Impedance–pH Testing

During an impedance–pH test, your baby's doctor (usually a gastroenterologist) will measure the pH (acidity) levels in their esophagus during a 24-hour period. The doctor also uses impedance technology to measure how much liquid and air are going up and down their esophagus during this time. This test can determine whether your baby has acidic or nonacidic GERD, which could help with planning treatment.

During this procedure, the doctor will insert a catheter—a thin, flexible tube—through the nose, down the esophagus, and into the stomach. The doctor tapes the catheter to the nose, wraps it around one ear, and then connects it to a small device. The device records measurements from the catheter for the next 24 hours. The doctor will also ask you to keep your own written record during this time of any symptoms you see your child experiencing. They can eat and sleep normally during this procedure, but some children may be admitted overnight depending on how well they tolerate the catheter to avoid them pulling it out on their own.

Upper Endoscopy

During an upper endoscopy, a flexible tube with a camera at its tip is used to examine the esophagus, stomach, and upper part of the small intestine. While your child is sedated (typically this is done via general anaesthesia in children) the doctor looks for any irritation, inflammation, or other complications to determine the severity of GERD.

If the doctor detects potential abnormalities in the lining of the esophagus, he or she may remove a small piece of esophageal tissue in a procedure known as a biopsy. This tissue is closely examined under a microscope to determine the risk of developing Barrett's esophagus. An upper endoscopy is also used to confirm the presence of a hiatal hernia, one of the causes of reflux (though less common in children).