



Pediatric Surgery

GASTROESOPHAGEAL REFLUX REPAIR OR "WRAP" SURGERY

AT CHILDREN'S HOSPITAL OF PITTSBURGH OF UPMC, we believe parents and guardians can contribute to the success of this surgery and invite you to participate. Please read the following information to learn about the surgery and how you can help.

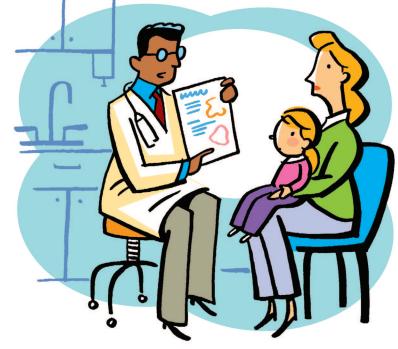
Fast Facts About the "Wrap" Surgery

- The gastroesophageal reflux repair or "wrap" surgery corrects Gastroesophageal Reflux Disease (GERD). GERD is a digestive disorder that causes acids in the stomach to flow back up into the esophagus, the "foodpipe" or swallowing tube that carries food from the mouth to the stomach.
- Your child's surgery will take place at Children's Hospital in Lawrenceville.
- Your child's surgery will be done under general anesthesia, which means that he or she will be sound asleep during the surgery.
- When general anesthesia is needed, there are special rules for eating and drinking that must be followed in the hours before surgery.
- There are two techniques for the repair surgery:
 - The laparoscopic technique, in which the surgeon makes small incisions (cuts) in the skin and inserts tiny scopes or cameras to see inside the body while doing the repair.
 This surgical technique is used most often for wrap surgeries done at Children's Hospital.
 - The traditional "open" technique, in which the surgeon makes a large incision to give a full view of the areas involved in the repair surgery.
- The surgery takes between 1 and 2 hours.
- The hospital stay is typically 2 to 4 days if done laparoscopically or about 1 week for the open method.

What Is Gastroesophageal Reflux Repair?

Normally, stomach contents and acid are stopped from coming back up into the

esophagus (es-SOF-uh-gus) by a muscle at the bottom of the esophagus. When this muscle doesn't work properly, the contents of the stomach flow back into the esophagus. The backward flow is called "reflux."



If uncorrected, the acid can harm the lining of the esophagus by causing ulcers, scars, or bleeding. The stomach contents also can come up the esophagus and enter the lungs. This is called "aspiration" (as-per-A-shun) and can cause cough, airway irritation, or even pneumonia.

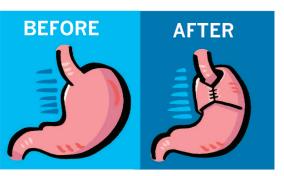
In most cases, reflux can be treated with medication taken by mouth; but for those children whose symptoms have not improved with medication, surgery is recommended.

The gastroesophageal (GAS-tro-ee-sof-uh-JEE-ul) repair surgery is often referred to as a "wrap" because the upper portion of the

stomach is wrapped around the lower portion of the esophagus. The wrap tightens or narrows the opening of the esophagus as it enters into the stomach. After the surgery, the wrap keeps food and fluids from backing up into the esophagus from the stomach.

This surgery is done under general anesthesia. General anesthesia makes your child's whole body go

to sleep and is needed for this surgery so that his or her reflexes will be completely relaxed. General anesthesia makes the surgery easier and safer to do because your child will not feel any pain or have any memory of the surgery.



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Tests Needed Before Surgery

Once the decision for surgical treatment is made, your doctor may need your child to have a few tests to make sure that the surgery is right for your child. Your child's doctor may order:

- An upper GI study to look at the GI (gastrointestinal) tract to examine the esophagus, stomach and part of the small intestine.
- A gastric emptying exam to see how quickly a meal clears from the stomach.
- A pH probe study to measure the acidity in the esophagus.
- An esophageal biopsy to confirm continued acid reflux.

These tests are done through the Gastroenterology Department of Children's Hospital of Pittsburgh.

The Surgery

Once your child has been registered, he or she will be taken to a "holding area" where you will meet the anesthesiologist and your surgeon. A pediatric anesthesiologist—a doctor who specializes in anesthesia for children—will give the medications that will make your child sleep during the surgery. At this time, you will be able to ask any questions about the procedure.

Once questions are answered and the operating room is prepared, your child will be taken into the operating room and given an anesthetic to make him or her go to sleep.

When your child is asleep, the surgery will begin. If using the laparoscopic (*lap-a-ro-SKOPP-ic*) technique:

- The surgeon will use small instruments to work through 4 or 5 small incisions (cuts) in the skin in the abdomen or tummy.
- A small camera will be inserted through another small incision.
- The surgeon will fill the abdomen with air to inflate it to create a working space and help him or her see more easily during the surgery.
- Once the procedure is done, the surgeon will close the incisions with sutures (SOO-chers) or stitches that dissolve on their own.

If the surgery is done using an "open" procedure, an incision is made in the upper abdomen.

- In both techniques, the upper part of the stomach is wrapped around the lowest part of the esophagus and placed into position using dissolvable sutures.
- The "wrap" of stomach tissue increases pressure on the muscle at the bottom of the esophagus, keeping stomach contents and acid from going back into the esophagus.
- Your surgeon also will decide whether or not a gastrostomy (gas-STROSS-te-mee) tube will be used during the surgery. The gastrostomy tube is inserted through an incision to help "burp" air from the stomach and also may be used for feedings in infants and children.

Home Preparation

When general anesthesia is needed, there are important rules for eating and drinking that must be followed in the hours before the surgery. One business day before your child's surgery, you will receive a phone call from a nurse between the hours of 1 and 9 p.m. (Nurses do not make these calls on weekends or holidays.) Please have paper and a pen ready to write down these important instructions.

■ The nurse will give you specific eating and drinking instructions for your child based on your child's age. Following are the **usual** instructions given for eating and drinking. No matter what age your child is, you should follow the specific instructions given to you on the phone by the nurse.

For children older than 12 months:

After midnight the night before the surgery, do not give any solid food or non-clear liquids. That includes milk, formula, juices with pulp, coffee, and chewing gum or candy.

For infants under 12 months:

- Up to 6 hours before the scheduled arrival time, formulafed babies may be given formula.
- Up to 4 hours before the scheduled arrival time, breastfed babies may nurse.

For all children:

- Up to 2 hours before the scheduled arrival time, give only clear liquids. Clear liquids include water, Pedialyte®, Kool-Aid®, and juices you can see through, such as apple or white grape juice.
- In the 2 hours before the scheduled arrival time, give nothing to eat or drink.



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Going to Sleep

Before the surgery, a member of the anesthesia staff will meet with you to take your child's vital signs, weight, and medical history. As the parent or legal guardian, you will be asked to sign a consent form before the anesthesia is given.

- The anesthesiologist will meet with you and your child to review your child's medical information and decide which kind of sleep medication your child should get.
- If your child is very scared or upset, the doctor may give a special medication to help him or her relax. This medication is flavored and takes effect in 10 to 15 minutes.
- If you wish, you may go with your child to the room where the surgery will be done and stay as the sleep medication is given.
 - Younger children will get their sleep medication through a "space mask" that will carry air mixed with medication.
 Your child may choose a favorite scent to flavor the air flowing through the mask. There are no shots or needles used while your child is still awake.
 - Older children may choose between getting their medication through the mask or directly into a vein through an intravenous (IV) line.
 - When your child has fallen asleep, you will be taken to the waiting room. If it has not already been done, an IV will be started so that medication can be given to keep your child sleeping throughout the surgery.

While Asleep

While your child is asleep, his or her heart rate, blood pressure, temperature, and blood oxygen level will be checked continuously.

- Your child might have a breathing tube placed while he or she is asleep. If a breathing tube is used, your child might have a sore throat after the surgery.
- To keep your child asleep during the surgery, he or she might be given anesthetic medication by mask, through the IV tube or both. When the surgery is over, the medications will be stopped and your child will begin to wake up.

Waking Up

When your child is moved to the recovery room, you will be called so that you can be there as he or she wakes up.

Your child will need to stay in the recovery room to be watched until he or she is alert and his or her vital signs are stable. The length of time your child will spend in the recovery room will vary because some children take longer than others to wake up after anesthesia.

- Children coming out of anesthesia react in different ways. Your child might cry, be fussy or confused, feel sick to his or her stomach, or vomit. These reactions are normal and will go away as the anesthesia wears off.
- While your child is in recovery, your surgeon will talk to you about the surgery. That is a good time to ask questions about pain medication, diet and activity.

A Parent's/Guardian's Role During the Surgery

The most important role of a parent or guardian is to help your child stay calm and relaxed before the surgery. The best way to help your child stay calm is for you to stay calm.

- You are encouraged to talk to your child or hold his hand before the surgery, while sleep medication is given, and while in recovery.
- You may bring along a "comfort" item—such as a favorite stuffed animal or "blankie"—for your child to hold before and after the surgery

After the Surgery

Your child will have an IV for getting pain medication for as long as he or she needs it after the surgery (usually about 1 day for the laparoscopic procedure and 2 to 3 days for the open procedure). After this time, your child will be prescribed a pain medication to be taken by mouth.

While in the hospital, your child will be encouraged to get out of bed by the next day.

At Home After the Surgery

If your child had the laparoscopic procedure, he or she will have Steri-Strips™ covering the small incisions. Steri-Strips are adhesive strips that are sometimes used on shallow cuts instead of stitches to hold the edges of the cut together. They will dry up and fall off on their own as the incision heals.

If your child had an open procedure, he or she may have Steri-Strips covered by a gauze bandage or dressing over the incision. This dressing will be changed during your child's hospital stay. You will be given instructions on how to care for

the dressing when your child leaves the hospital. The Steri-Strips will fall off on their own as the incision heals.

If your child comes home with a gastrostomy tube, you will be given instructions on how to care for it before leaving the hospital.

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After the surgery, there will be a mild swelling of the wrap while the surgery heals. This swelling should go down within 2 weeks. Your child should have mostly liquids for the first 2 weeks after surgery.

 Liquids may be clear (such as Popsicles®, Gatorade®, and water) or unclear (such as ice cream, milk and soup).

 Solids may be introduced slowly during this time.

Your child also should avoid eating certain foods.

- Carbonated beverages should be avoided for several weeks and possibly for the rest of your child's life. You may slowly introduce small amounts of soda into your child's diet when he or she is feeling better to see if it can be tolerated.
- Corn, beans, peas, onions, broccoli, cauliflower, tomato products, and citrus fruits should be avoided.
- No chocolate or peppermint.
- Avoid pepper and coarse cereals with bran.
- Foods that may get lodged in the area of the "wrap," such at hot dogs, French fries, dry chicken, or wadded-up bread, should be avoided. If your child does eat these foods, they should be well chewed or cut into very small pieces.

After the laparoscopic procedure, your child may go back to normal activity in about 1 to 2 weeks. After an open procedure, your child may go back to normal activity in about 2 to 3 weeks. At this time, your child may return to school. He or she may go back to gym class after the follow-up visit with your surgeon, usually about 2 to 4 weeks after the surgery.

When To Call the Surgeon

You may call the office at any time with questions regarding your child's procedure.

You should call right away if:

- Your child has a high fever (102 degrees F).
- Your child has an unexplained fever, (i.e., not related to another illness, such as an ear infection).

Complications

- After surgery, your child may not be able to burp or vomit easily. This condition usually is outgrown, but if it is not, your child may need to adjust his or her diet to treat it.
- Swallowing problems can occur from a wrap that is too tight. These problems can usually be treated by having the doctor dilate (stretch) the narrowed area.
 - A long-term problem may occur if the wrap comes undone or moves into the chest. If that should happen, your child would be treated according to his or her symptoms.
 - During surgery, other complications may occur, such as bleeding, infection, perforation (puncturing) of the esophagus or stomach, reaction to the anesthesia, or gas escaping from the abdomen during the surgery. Although these complications are rare, your surgeon will discuss them with you before your child's surgery.

Questions

If you have any specific questions about your child's surgery, you should discuss them with the surgeon *before* the surgery. You may call the Division of Pediatric Surgery at Children's Hospital and ask to speak with your child's surgeon, or speak with him or her during the pre-surgical examination on the day of the surgery.

Special Needs

If your child has any special needs or health issues you feel the doctor needs to know about, please call the Division of Pediatric Surgery at Children's Hospital *before* the surgery and ask to speak with a nurse. It is important to notify us *in advance* about any special needs your child might have.

Division of Pediatric Surgery

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To see the list of all available patient procedures descriptions, please visit www.chp.edu/procedures.