

Let's Talk About...

Pectus excavatum surgery

Pectus excavatum [ex-cah-VAY-tum] occurs when a child's sternum (breastbone) sinks into their chest. A doctor usually notices this right after your child is born. Pectus excavatum is more common in boys, and it may be inherited (run in families).

What are the signs of pectus excavatum?

Signs of pectus excavatum include:

- A depression (indent or sunken area) in the chest
- A chest that looks uneven
- Feeling short of breath or tired

How is pectus excavatum diagnosed?

A doctor will look carefully at your child's chest. Your child may need:

- Pulmonary function (breathing) tests to check their breathing patterns
- An echocardiogram [ek-oh-CAR-dee-oh-gram], or heart function test
- A chest CT scan (x-rays) to measure the chest indentation

Usually, a child's ribs are connected to the sternum with cartilage (firm tissue). If the cartilage doesn't grow normally, the child's chest looks sunken.

How will the doctor know if my child needs surgery?

Your child may need surgery to repair the pectus excavatum if:

- Their ability to exercise changes
- They have trouble breathing
- They have chest pain
- They have significant body image concerns



- Breathing or heart tests show changes
- A chest CT scan shows a severe indentation
- A chest CT scan shows heart compression (ribs and sternum pushing on the heart)

What happens before surgery?

If your child needs pectus excavatum surgery, they may benefit from a posture and exercise program (which they can continue after surgery).

A healthcare provider will also measure your child for a stainless-steel or titanium bar (called a pectus or Nuss bar) that will be inserted in their chest.

On the day of surgery, a healthcare provider will give your child an IV (tiny tube into a vein) to receive medicine while they're in the hospital.

What happens during surgery?

During pectus excavatum surgery, the surgeon:

- 1 Makes two small incisions (openings), one on each side of your child's chest

- 2 Inserts the pectus or Nuss bar in your child's chest to bring the chest depression out
- 3 Closes the openings using Steri-Strips (small pieces of tape) or surgical glue

The bar stays in your child's chest for 2 to 3 years.

What happens after surgery?

After your child's surgery, they must:

- Take deep breaths using an incentive spirometer (device that tests breathing) every hour while they're awake to prevent lung problems
- Sleep flat on their back with only a small pillow under their head or sleep flat in a reclining armchair
- Avoid slouching, rolling, lying on their side, rotating, and bending
- Only get out of bed and walk with help

Your child will go home when they can control their pain with medicine taken by mouth and they are drinking enough fluid.

How do I care for my child at home?

Once your child is home:

- Keep the Steri-Strips covering the wound dry and in place for 1 to 2 weeks. Your child can get them wet 5 days after surgery, but pat them dry after your child showers. The Steri-Strips will fall off on their own.
- Have your child drink plenty of water and eat nutritious foods so they don't become dehydrated (low on body fluids) or constipated (unable to poop).
- Make sure your child showers 5 days after surgery. They can have sponge baths until then but should not get the wound or Steri-Strips wet.

What medicine does my child need?

You can give your child ibuprofen (Advil) 2 to 3 times a day for several weeks to reduce pain and swelling. Your child's doctor may also prescribe a stronger pain medicine the first week after surgery. Your child may also need antacids for an upset stomach (ibuprofen can irritate the stomach), a muscle relaxant (like Valium) to help with back pain or muscle spasms, and medicine for constipation.

What activities can my child do after surgery?

Have your child do only light activity for the first 4 weeks. They should also:

- Maintain good posture to keep the bar in place
- Bend at the hips, not at the waist
- Avoid slouching or slumping when they sit
- Walk for 5 to 10 minutes 2 to 3 times a day to help build strength

For the first 6 to 8 weeks after surgery, your child should not drive a car or do any heavy lifting, especially heavy school backpacks. After 6 to 8 weeks, your child should do aerobic activity, like running, and daily exercises, especially push-ups. They should avoid the following activities for the first 12 weeks after surgery:

- Karate
- Judo
- Skiing
- Snowboarding
- Gymnastics
- Contact sports
- Sports with a lot of torso twisting (golf, baseball, and swimming)

Your child may return to most of these sports after 12 weeks if they are careful. They should still avoid rough sports like football and boxing after 12 weeks.

When can my child return to school?

Your child can usually return to school 2 to 3 weeks after leaving the hospital. They must completely stop taking opioid pain medicine before returning to school. Once your child is at school again:

- They should not carry a backpack for 3 months (ask for a second set of books to keep at home).
- They should leave class 5 minutes before the bell rings (if possible) to avoid being bumped in the hallways.

Your child's doctor will send a note excusing your child from physical education (PE) classes at school for 3 months.

What can I expect for my child during the next few years?

After your child's pectus excavatum surgery:

- The bar will stay in place 2 to 4 years (an average of 3 years). After the surgeon removes the bar, your child must continue a 60-minute aerobic exercise program 3 times a week. A physical therapist can help with proper, safe training.
- You must report any trauma or blow to your child's chest to the surgeon immediately. If your child needs CPR (which is not likely), the person doing CPR must use increased force.
- The paddles must be placed anterior/posterior (front to back) if your child needs defibrillation for cardiac arrhythmia.
- They can have magnetic resonance imaging (MRI) tests, but the bar may interfere with images of the upper chest or belly. Healthcare providers recommend your child have a computerized tomography (CT) scan instead.
- Pectus excavatum can form again, but it is rare.

How do I protect my child while they have a bar in place?

To protect your child while the bar is in place:

- Order a medical ID bracelet for your child with the pectus bar information on it, and make sure they wear it.
- Make sure your child carries information about the pectus bar in case they set off a metal detector.

When should I call my child's surgeon?

Call your child's surgeon's office at 801.662.2950 (or call 801.662.1000 after-hours for the on-call provider) if your child has:

- A temperature higher than 102°F (39°C)
- A continual cough or any problems breathing
- Chest pain, especially with deep breaths
- Any chest injury that may cause the bar to move
- Redness, drainage, or swelling at the incision sites under the arms

The following table lists the possible benefits, risk, complications, and alternatives of pectus excavatum surgery. Talk with your child's doctor to determine if surgery is right for your child.

Benefits	Possible risks and complications	Alternatives
<p>The benefits of surgery may include:</p> <ul style="list-style-type: none"> • A chest that looks normal and has no indentation • Better body image • More room for the organs in the chest • Ability to breathe easier 	<p>The risks of pectus excavatum surgery may include:</p> <ul style="list-style-type: none"> • Bar moving out of place • Pain that lasts a month or more • Heart or lung damage during surgery • Pectus excavatum returning • Collapsed lung or fluid around the lung 	<p>There is not really an alternative to pectus excavatum surgery.</p>

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