

Pediatric Umbilical Hernia Repair



Umbilical Hernia Location



The most common symptoms are:

- A bulge in the abdominal area that often increases with crying or straining.
- An umbilical hernia usually does not cause pain in children.²
- Increasing sharp abdominal pain and vomiting can mean that the hernia is strangulated. This is a surgical emergency and immediate treatment is needed.

Risks of not having an operation—The hernia may cause pain and increase in size. If the intestine becomes squeezed in the hernia sac (incarceration), there may be sudden pain, vomiting, and the need for an immediate operation.

Possible risks include—Complications are rare. There is a very small rate of wound infection and hematoma (collection of blood) after an umbilical hernia repair in children. There may also be a 2% risk of recurrence on long term follow up.³

The Condition

An umbilical hernia occurs when part of the intestine or fatty tissue bulges through a weak muscle not completely closed around the hole (belly button, navel) left by the umbilical cord. A reducible hernia can be pushed back into the opening or decrease in size when lying flat. When intestine or abdominal tissue fills the hernia sac and cannot be pushed back, it is called irreducible or incarcerated. A hernia is strangulated if the intestine is squeezed in the hernia pouch and the blood supply to the intestine is cut off. This is a surgical emergency.¹ A congenital hernia develops in the fetus during pregnancy and is present at birth.

Umbilical hernias are one of the most common conditions in children. They occur equally among boys and girls and in 15 to 23% of newborns. They are very common in African-American, Hispanic and low birth-weight infants.

The risk of incarceration of umbilical hernia in children is rare (less than 1 in 100) but premature infants have 2x the risk. More than 2/3 of incarcerations occur before age 1 year.

Treatment Options

Surgical Procedure

Open hernia repair—An incision is made along the inferior edge of the umbilicus. The surgeon will repair the hernia by suturing (sewing) the muscle closed.

Watchful Waiting

Many small (< 1-1.5 cm) umbilical hernias will close on their own as the child grows between birth and 4 years of age, eliminating the need for surgical repair. Umbilical hernias often resolve over time and watchful waiting may be advised until the 5th birthday.³

Benefits and Risks of Your Child's Operation

Benefits—An operation is the only way to repair a hernia that has not closed on its own. A child will be able to return to their normal activities in a short amount of time, and, in most cases, discomfort from the procedure will last only a few days.

Expectations

Before your operation—Evaluation may include blood work and urinalysis. The surgeon and anesthesia provider will discuss your child's health history, home medications, and pain control options.

The day of the operation—Your child will not eat or drink for six hours before the operation (verify the recommended time with your surgeon or anesthesiologist). Check with the doctor's office to see if your child should take their routine medication. A parent can usually stay with the child in the OR waiting area and again during recovery.

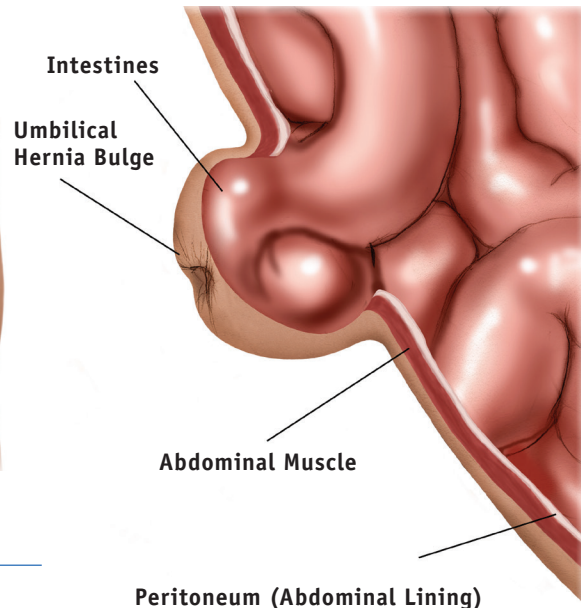
Your child's recovery—Your child will likely go home from the recovery room within a few hours for small hernia procedures but may need to stay in the hospital longer following complex repairs.

Call your child's surgeon if your child has severe pain, stomach cramping, chills or a high fever (over 101°F or 38.3°C), odor or increased drainage from the incision, or has no bowel movements for three days.

SURGICAL PATIENT EDUCATION PROGRAM

Prepare for the Best Recovery

Umbilical Hernia Surgical Repair



Surgical Treatment

The type of operation depends on hernia size, location, and if it is a repeat hernia. The child's age, health, anesthesia risk, and the surgeon's expertise are also important. Surgical repair is usually performed by a pediatric general surgeon. An operation is the only treatment for a hernia repair.

Surgical repair of an umbilical hernia in children may be needed if:

- The hernia is painful and stuck in a bulging position (incarcerated)
- Blood supply is affected (strangulated)
- The hernia has not closed by age 5
- The defect is large or bothersome in appearance²

Open Hernia Repair

Suture repair is the primary type of umbilical hernia repair for infants and children. The surgeon makes an incision near the hernia site, and the bulging tissue is gently pushed back into the abdomen. Sutures are used to close the muscle.

Pushing the umbilical hernia back into the abdomen and taping or strapping a coin to the umbilical area to try to close the hernia is not effective and is not recommended.

Peritoneum (Abdominal Lining)

- **For suture-only repair (Herniorrhaphy):** The hernia sac is removed. And the tissue along the muscle edge is sewn together. The umbilicus is then fixed back to the muscle. This procedure is often used for small defects.
- The skin is closed using subcuticular absorbable sutures or surgical glue.
- General anesthesia is typically required to perform the surgical repair.

Nonsurgical Treatment

Watchful waiting is recommended for children who have no symptoms. In 95% of cases, umbilical hernias less than 1 cm in diameter usually close on their own within 5 years of age.⁵ After age 5, repair is recommended.

Fluids and Anesthesia

Let your anesthesia provider know if your child has allergies, neurologic disease (epilepsy), heart disease, stomach problems, lung disease (asthma), endocrine disease (diabetes,

thyroid conditions), loose teeth and any medications they are taking. An intravenous line (IV) will be started to give your child fluids and medication. This is usually inserted after your child is asleep in the operating room.

General anesthesia is most often used, and your child will be asleep and pain free for this surgery.

A tube will be placed down your child's throat to help your child breathe during the operation. For spinal anesthesia, a small needle with medication will be placed in their back alongside the spinal column. They will be awake but pain free.

Length of Stay

If your child is having local anesthesia, they will usually go home the same day. They may need to stay longer if they have had laparoscopic surgery with general anesthesia, a larger hernia with mesh repair, an incarcerated hernia, nausea, or vomiting. All hospitals allow a parent to stay overnight in a room with their child.

When to Contact Your Surgeon

Contact your surgeon if your child has:

- Pain that will not go away
- Pain that gets worse
- A fever of more than 101°F or 38.3°C
- Vomiting
- Swelling, redness, bleeding, or bad smelling drainage from the wound site
- Strong or continuous abdominal pain or swelling of the abdomen
- No bowel movement 2 to 3 days after the operation

Risks of this Procedure

RISKS	WHAT CAN HAPPEN	KEEPING YOU INFORMED
Immediate postoperative pain	Postoperative pain following umbilical hernia repair in children is not severe and lasts only a few days. ⁴	<p>Your child may receive some “numbing medicine” (local anesthetic) at the surgery site. Sometimes this can be used to numb the surrounding area (a regional block).</p> <p>Most children only need ibuprofen or Tylenol for pain for a few days, taken by mouth every 4-6 hours if needed.</p>
Long-term pain	There are no reports of long-term pain in follow-up visits up to one year after repair.	Your child’s pain should decrease within a few days. Follow up with the doctor if your child is still uncomfortable.
Sedation and anesthesia	<p>Breathing problems such as decreased oxygen levels, stridor (noisy breathing) and spasms of the larynx, or apnea (temporary lack of breathing) occurred in less than 1 in 100 pediatric surgeries. Increased secretions or vomiting occurred in less than 1 in 100 pediatric sedation or anesthesia procedures.⁷</p> <p>Serious adverse effects were rare, and no deaths were reported in over 30,000 cases.⁸ Your child’s anesthesia provider will suggest the best option.</p>	<p>Breathing, heart rate and rhythm, body temperature, blood pressure, and blood oxygen levels will be checked throughout the surgery.</p> <p>After general anesthesia, kids go to the post-anesthesia care unit (PACU) or recovery room. Parents or caregivers can join their child here and be with them while they wake up. Your child may feel groggy and a little confused when waking up. Other common side effects can include nausea or vomiting, chills or shakiness, or a sore throat (from the breathing tube).</p>
Seroma	A seroma (collection of fluid) occurred in .02% of repairs. ⁴	Seromas can form around the former hernia site. Most seromas will disappear on their own. Removal of fluid with a sterile needle may be required.
Hematoma	A hematoma (collection of blood) occurred in .06% of cases of pediatric umbilical hernia repair. ⁴	A pressure dressing may be applied for a few days after surgery. Currently, there is no evidence that a pressure dressing decreases the risk of developing a hematoma. ⁹
Infection	Wound infections occurred in .07% of repairs in children. ¹⁰	The incision will be held together with Steri-strips and covered with a clear dressing. ⁴ Wash hands before caring for the incision site. Notify the doctor’s office of any signs of infection such as fever, pain, redness, or swelling at the site.
Incarceration and strangulation	Both incarceration and strangulation requiring emergency surgery occur in less than 1 in 100 children with umbilical hernias. ¹¹	Surgical outcome is good in children, even with incarcerated or strangulated hernias, as long as fluid and electrolyte balance is corrected and the hernia is repaired quickly. ¹⁰
Recurrence (hernia comes back)	There is a 2% chance that the hernia will come back after umbilical hernia repair.	Laparoscopic repair is recommended for recurrent hernias, as the surgeon avoids previous scar tissue.
Death	No surgical deaths are reported directly related to umbilical hernia repair in children.	Your surgical team will closely monitor your child for any complications.

Risks of this Procedure

The Day of Your Operation

Follow the guidelines by your surgeon for when your child should stop eating or drinking before the operation.⁰

- They should bathe or shower and clean their abdomen with mild antibacterial soap.
- They should brush their teeth and rinse their mouth with mouthwash.

What to Bring

- Insurance card and identification
- List of medicines
- Loose-fitting, comfortable clothes
- Slip-on shoes that don't require your child to bend over
- Favorite toy or book for recovery period

What You Can Expect

Safety Checks

An identification (ID) bracelet and allergy bracelet with your child's name and hospital/clinic number will be placed on their wrist. These should be checked by all health team members before providing any procedures or giving your child medication. The surgeon will mark and initial the operation site.

After the Operation

Your child will be moved to a recovery room where their heart rate, breathing rate, oxygen saturation, and blood pressure will be closely watched. Be sure all visitors wash their hands.

Thinking Clearly

If general anesthesia is given, it is not unusual for some children to feel upset and confused as anesthesia is wearing off. Your child may need more sleep than usual the first day home, and allowing them to wake naturally should help.

Nutrition

When your child wakes up from the anesthesia, they will be able to drink small amounts of liquid. If they do not feel sick, they can return to their regular diet.

Activity

- Your child will slowly increase their activity. They should get up and walk every hour or so to prevent breathing problems, pneumonia, and constipation.
- There is no lifting, climbing, or strenuous physical activity for several weeks following surgical repair of umbilical hernia.
- Children can usually return to normal activities within a few days. Depending on the size of the hernia, activity like PE classes may be restricted for 1 to 2 weeks.

Wound Care

- Always wash your hands before and after touching near the incision site.
- Your child may have Steri-Strips over the incision site. These will fall off in 7 to 10 days. There may be a clear dressing over the Steri-Strips which can usually be removed after 48 hours.
- Your child may shower or bathe after 2 days but avoid prolonged soaking.
- A small amount of drainage from the incision may occur. If the dressing is soaked with blood, call your surgeon.

Pain after Umbilical Hernia Repair

Most children have mild pain after the repair of an umbilical hernia. Children's acetaminophen (Tylenol), ibuprofen, or Tylenol with hydrocodone (Lortab elixir) can be used to relieve pain, with most children needing only 1 to 2 doses. Throat lozenges or popsicles for sore throat pain or dryness from the tube placed in the throat during anesthesia can also help.

GLOSSARY

Blood tests: Tests usually include a Chem-6 profile (sodium, potassium, chloride, carbon dioxide, blood urea nitrogen and creatinine) and complete blood count (red blood cell and white blood cell count).

General anesthesia: A treatment with certain medicines that puts you into a deep sleep so you do not feel pain during surgery.

Hematoma: A collection of blood that has leaked into the tissues of the skin or in an organ, resulting from cutting in surgery or the blood's inability to form a clot.

Local anesthesia: The loss of sensation only in the area of the body where an anesthetic drug is applied or injected.

Seroma: A collection of serous (clear/yellow) fluid.

Urinalysis: A visual and chemical examination of the urine, most often used to screen for urinary tract infections and kidney disease.

DISCLAIMER

Important Note on the Use of This Document

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