CONDITION

Gastroschisis

Gastroschisis is a birth defect in which a baby's bowel develops outside the abdomen through an opening beside the belly button.

WHAT IT IS
Birth defect leaving bowel outside the abdomen

BODY SYSTEM
Digestive system and abdominal wall

MAIN SYMPTOMS
Exposed bowel, swollen bowel, feeding difficulty, abdominal swelling

WHAT CAUSES IT
Unknown; likely combined genetic and environmental influences

HOW IT IS DIAGNOSED
Prenatal ultrasound or examination at birth

MAIN TREATMENT
Newborn stabilization, surgical closure, nutritional support

CAN IT BE CURED?
Yes - surgery closes abdominal opening

IS IT AN EMERGENCY?
Yes - exposed bowel needs immediate newborn care

LONG-TERM OUTLOOK
Usually good; complex cases may have lasting bowel problems

Overview

Gastroschisis is a condition present at birth. An opening forms in the baby's abdominal wall, usually just to the right of the belly button. Part of the intestine, or bowel, passes through this opening and develops outside the body.

The exposed bowel has no protective membrane. Contact with amniotic fluid can make it irritated, swollen, or thickened. Less often, other abdominal organs also pass through the opening.

The baby needs specialist care immediately after birth. The bowel must be protected, returned to the abdomen, and the opening closed. Nutritional support is needed while the bowel recovers and begins working.

In simple gastroschisis, the bowel is intact. Complex gastroschisis includes another bowel problem, such as a blockage, narrowing, hole, twisted segment, or loss of blood supply. Complex cases usually need more treatment and a longer hospital stay.

Gastroschisis differs from an omphalocele. In an omphalocele, organs come through the belly button and are covered by a membrane. Omphalocele is also more often associated with chromosome or other organ conditions.

Symptoms

Gastroschisis usually causes no symptoms that a pregnant person can feel. It is often found during a routine pregnancy ultrasound.

After birth, the main sign is bowel visible outside the baby's abdomen. It may look swollen, thickened, or discolored, although appearance alone does not show how well it will work.

The baby cannot safely feed by mouth immediately. The inflamed bowel may move food slowly. After surgery, signs that it is not ready for feeding can include:

These problems are monitored closely in the neonatal intensive care unit, or NICU.

- A swollen abdomen
- Green fluid draining from a stomach tube
- Vomiting when feeds begin
- Slow passage of stool
- Difficulty increasing milk feeds

Causes and risk factors

The exact cause is unknown. Gastroschisis develops early in pregnancy while the abdominal wall is forming and may result from combined developmental, genetic, and environmental influences.

It usually occurs by itself rather than as part of an inherited syndrome. Most affected babies do not have a chromosome condition, and gastroschisis generally does not follow a simple inherited pattern.

It is more common in babies born to younger pregnant people. Tobacco use during pregnancy has also been associated with a higher likelihood. These associations do not prove what caused an individual case, and gastroschisis often occurs without known risk factors.

Ordinary daily activities do not cause the bowel to move outside the abdomen. A medical review of medicines, health conditions, and possible exposures often finds no specific cause.

Diagnosis

Gastroschisis is commonly diagnosed before birth by ultrasound, which may show bowel floating freely in the amniotic fluid beside the abdomen.

Maternal serum alpha-fetoprotein, or AFP, may be higher than expected. AFP does not confirm gastroschisis but may prompt a detailed ultrasound.

After diagnosis, further scans may monitor:

Ultrasound cannot always predict how well the bowel will work. Some blockages or damaged areas are found only during surgery or when feeding begins.

If gastroschisis was not detected during pregnancy, it is diagnosed immediately at birth by examination. Imaging and blood tests may then assess the baby's health and possible complications.

Planning usually involves maternal-fetal medicine specialists, newborn doctors, and pediatric surgeons. Delivery at a hospital with a NICU and pediatric surgery service can avoid transfer after birth.

- The baby's growth
- Amniotic fluid levels
- The bowel's appearance and size
- Blood flow and general well-being

Treatment and management

Treatment begins immediately after delivery. The exposed bowel is placed in a sterile plastic covering to reduce heat and fluid loss, and the team checks that it is not twisted or compressed. A tube is passed through the nose or mouth into the stomach to drain fluid and air. The baby receives intravenous fluids, pain relief, and usually antibiotics like amoxicillin or doxycycline .

The abdominal opening is then closed. The method depends on the bowel's condition, the size of the abdomen, and the baby's stability.

With primary closure, the surgeon returns the bowel to the abdomen and closes the opening in

one procedure. This is possible only if the bowel fits without creating unsafe pressure.

With staged closure, the bowel is placed in a sterile pouch called a silo and gradually moved into the abdomen over several days. The opening is then closed, sometimes in an operation and sometimes at the bedside using the umbilical cord or a dressing technique.

The baby receives nutrition through a vein, called parenteral nutrition, until bowel movement improves and stomach drainage decreases. Small milk feeds are then introduced gradually. Breast milk can often be expressed and stored until feeding starts.

Blocked, perforated, twisted, or badly damaged bowel may require additional surgery. A damaged section may be removed and the healthy ends joined. Occasionally, a temporary stoma is created so stool can leave through the abdominal wall.

Gastroschisis alone does not always require a cesarean birth. Timing and method of delivery depend on the pregnancy, the baby's condition, and available services.

Complications

Many babies, especially those with simple gastroschisis, recover without major long-term complications. Early problems can include infection, feeding intolerance, and bowel blockage. A central intravenous line used for nutrition can become infected or develop a blood clot.

Long-term parenteral nutrition can affect the liver. The team monitors blood tests and increases milk feeds when the bowel is ready.

Complex gastroschisis may include intestinal atresia, in which part of the bowel is closed or missing. Other problems include a bowel hole, tissue damage from poor blood supply, or volvulus, where the bowel twists and restricts blood flow.

Removing a large amount of bowel can cause short bowel syndrome, meaning the remaining intestine cannot absorb enough fluid and nutrients. This may require prolonged nutritional support and specialist follow-up.

Internal scar tissue, called adhesions, can block the bowel months or years later. Green vomiting, severe abdominal pain, or increasing abdominal swelling may indicate a blockage.

Prevention

There is no proven way to prevent gastroschisis because its cause is unknown. It usually cannot be predicted from family history and is not caused by one specific action.

Avoiding tobacco, alcohol, and recreational drugs supports fetal health but cannot guarantee

prevention. Folic acid prevents some brain and spinal cord defects but has not been shown specifically to prevent gastroschisis.

Discuss prescription and over-the-counter medicines with a qualified healthcare professional before pregnancy or as soon as pregnancy is known. Do not stop an important medicine without medical advice.

After a previous affected pregnancy, pre-pregnancy or early pregnancy counseling can review individual circumstances and ultrasound plans. Recurrence is uncommon, but personal risk requires specialist assessment.

Living with it and what to expect

The baby usually spends several weeks in the NICU, although complex cases may require months of care. Recovery takes longer when the bowel is blocked, damaged, or shortened.

Parents may be able to provide expressed milk, change diapers, comfort the baby, and have skin-to-skin contact when the medical team says it is safe.

After discharge, follow-up may involve pediatric surgery, pediatric care, dietitians, and feeding specialists. Appointments monitor growth, hydration, feeding, stool patterns, development, and the surgical wound.

Most children with simple gastroschisis eventually eat by mouth and participate in ordinary activities. Some have reflux, constipation, loose stools, food aversion, or slow early growth. Feeding therapy or nutritional support may help.

Children with short bowel syndrome or other complex problems may need medicines, special nutrition, further surgery, or long-term intravenous nutrition.

The repaired opening does not usually reopen. The child will have a scar and may have a different-looking belly button. Activity restrictions are generally temporary, but follow the surgical team's advice about lifting, bathing, tummy time, and other activities.

Because scar tissue can cause bowel obstruction later, families should keep records of the diagnosis and operations for future healthcare teams.

When to get medical help

A prenatal diagnosis needs timely specialist follow-up but is not usually an emergency for the pregnant person. Contact the maternity team promptly for reduced fetal movement, labor symptoms, leaking fluid, or other concerns they have asked you to report.

If a baby is unexpectedly born with bowel outside the abdomen, call emergency services immediately. Do not push the bowel inside. Keep the baby warm and follow the emergency operator's instructions.

After surgery and discharge, seek urgent medical assessment for:

Call emergency services if the child has trouble breathing, becomes blue or gray, is unresponsive, or appears severely unwell.

Contact the regular care team for slow weight gain, ongoing reflux, frequent diarrhea or constipation, feeding difficulties, or concerns about the scar.

- Green or bright yellow-green vomit
- A rapidly swelling or very painful abdomen
- Repeated vomiting with inability to keep feeds down
- Bloody stool
- Fever in a young baby or unusual difficulty waking
- No stool or gas with vomiting and abdominal swelling
- Redness, drainage, or opening of the surgical wound

Common questions

Is gastroschisis the same as an omphalocele?

No. Gastroschisis occurs beside the belly button and has no covering membrane. An omphalocele occurs through the belly button, has a membrane, and is more often linked with chromosome or other organ conditions.

Can gastroschisis be seen on ultrasound?

Yes. Ultrasound can show bowel outside the abdomen. Follow-up scans monitor growth and bowel appearance but cannot predict every problem after birth.

Will my baby survive gastroschisis?

Most babies with simple gastroschisis survive when specialist newborn and surgical care is available. The outlook is less certain with extensive bowel damage, severe infection, very early birth, or short bowel syndrome.

How long will my baby stay in hospital?

The baby stays until the bowel works, milk feeds provide enough nutrition, and growth is stable. This often takes several weeks; complex cases may require several months.

Will my baby be able to eat normally?

Many children eventually eat a normal diet. Feeds begin slowly, and some need feeding therapy or nutritional support. Significant bowel loss may cause long-term absorption problems.

Can I have a vaginal birth if my baby has gastroschisis?

Often, yes. Gastroschisis alone does not automatically require cesarean birth. The care team plans the safest timing, location, and method of delivery.

Sources

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