

Appendicitis

A plain-English guide for you and your family

WHAT IS HAPPENING

The appendix is a small finger-shaped pouch attached to the first part of your large intestine, usually in the lower right side of your belly. It holds infection-fighting cells but has no known essential job in adults. When the opening of the appendix gets blocked—by a hard piece of stool called a fecalith (a stone-like lump of poop), swollen tissue from a recent infection, or rarely a tumor—pressure builds up inside the closed tube. That rising pressure squeezes blood vessels shut, starving the appendix wall of oxygen and food. Bacteria that normally live in the intestine multiply fast in the trapped, low-oxygen space. The wall begins to die, and the appendix becomes a balloon of pus. Pain typically starts vague and centered around the belly button because the appendix shares deep nerve pathways with the small intestine. Within hours, swelling spreads to the peritoneum (the lining that wraps your belly organs), and the pain shifts sharply to the lower right side, right over the dying appendix. You may lose your appetite, feel sick to your stomach, throw up, and run a fever as your immune system floods the area with white blood cells to fight infection. If the appendix wall bursts, bacteria and pus spill into the belly, causing peritonitis (infection of the belly lining) and sometimes an abscess (a walled-off pocket of pus). None of these signs is random—each one points back to the same upstream problem: a blocked tube that has lost its blood supply and is dying. Trace it backward from the bedside: fever and high white count mean infection; right-lower-belly tenderness means the lining is swollen; the moving pain tells you when deep swelling became surface irritation. Your body is buying time by walling off the infection and raising the alarm, but only antibiotics and surgery can stop the dominos once the tube is blocked.

What you might feel

- Belly-button pain that moves to the lower-right side
- No appetite (you don't want to eat at all)
- Feeling sick to your stomach and throwing up
- Low fever (100–101°F at first; higher if the appendix bursts)
- Tenderness at McBurney's point (lower-right belly, about one-third the way from your hip bone to your belly button)

- Your belly muscles tighten up on their own when touched (guarding), or your whole belly feels rock-hard (rigidity)
- Rebound tenderness (pain when the doctor presses slowly and then lets go suddenly — called Blumberg's sign)
- Rovsing's sign (you feel pain in your lower-right belly when the doctor presses your lower-left side)
- Psoas sign (pain when you lie on your left side and straighten your right leg backward, or when the doctor lifts your right leg while you're on your back)
- Obturator sign (pain when the doctor bends your right knee and rotates your hip inward)

Call the doctor right away if...

- Board-hard belly everywhere (diffuse rigidity) — the appendix has burst and bacteria are spreading through your whole abdomen (diffuse peritonitis — infection all over the belly lining); you need emergency surgery right now.
- Fever above 102°F plus a racing heart (over 120 beats per minute) or low blood pressure (top number under 90) — your body is losing the fight against infection (sepsis — a whole-body response to infection that can shut down organs); you need IV fluids, powerful antibiotics, and close monitoring in the hospital, possibly the ICU.
- Your pain suddenly gets better for a few minutes, then comes roaring back worse and spreads everywhere — classic sign the appendix just popped; when it bursts, pressure drops and pain eases briefly, then bacteria flood your belly and pain explodes.
- Confusion, extreme sleepiness, or not making sense — your brain isn't getting enough oxygen or your blood is poisoned by infection (septic shock — dangerously low blood pressure from infection); life-threatening without immediate treatment.
- Pregnant beyond the first three months with right-sided or unusual belly pain — the growing uterus pushes the appendix upward and hides the usual signs; a burst appendix is more dangerous for both mom and baby, so any belly pain in pregnancy needs urgent evaluation.

What the care team will do

- Make the patient NPO (nothing by mouth—no food, water, gum, or ice chips) and hang a sign above the bed.
- Start a large-bore IV (18-gauge or bigger) and run normal saline or lactated Ringer's solution at 125 to 150 mL per hour in adults.

- Give IV antibiotics exactly as ordered—common regimens include ceftriaxone 1 to 2 grams plus metronidazole 500 mg, or piperacillin-tazobactam 3.375 grams—within one hour of the order.
- Monitor vital signs every 1 to 2 hours: temperature, heart rate, blood pressure, respiratory rate, and oxygen saturation; immediately report fever above 102°F, heart rate over 120, systolic BP under 90, or respiratory rate over 24.
- Position the patient in semi-Fowler's (head of bed up 30 to 45 degrees) with knees slightly bent, and do not palpate (press on) the abdomen repeatedly.
- Measure and record urine output every hour using a Foley catheter if ordered, or ask the patient to use a urinal or bedpan; report output less than 30 mL per hour (0.5 mL/kg/hour).
- Keep the patient comfortable with IV pain medication (avoid giving oral pills since the patient is NPO), but assess and document pain location and severity before and after each dose.
- Prepare for surgery by ensuring informed consent is signed, removing jewelry and dentures, confirming the surgical site is marked, and checking that preoperative labs (complete blood count, basic metabolic panel) and imaging (ultrasound or CT scan) are complete and in the chart.

Medicines you may be given — and why

NPO (nothing by mouth)

Before surgery, your stomach must be empty. If you have food or liquid inside and you throw up while you are asleep under anesthesia, that material can slip into your lungs instead of out your mouth. Food or acid in the lungs causes a serious infection called aspiration pneumonia. Keeping your stomach empty protects your airway and lungs during the operation.

Intravenous (IV) fluids (normal saline or lactated Ringer solution)

When your appendix is inflamed, you often have a fever, vomit, and stop eating and drinking. All of these make you lose water from your body. Your blood volume drops—like a car running low on coolant. IV fluids are sterile salt water delivered straight into your vein. They refill your blood vessels, keep your blood pressure steady, and make sure your organs (kidneys, brain, heart) get enough flow and oxygen to work properly.

Morphine or fentanyl

These drugs attach to special docking sites (called opioid receptors) on nerve cells in your spinal cord and brain. When the drug locks onto those receptors, it blocks pain signals traveling from your belly up to your brain. Your inflamed appendix still sends alarm signals, but your brain does not receive them clearly, so you feel much less pain.

Ondansetron (Zofran)

When your appendix is inflamed and your gut is irritated or blocked, nerve signals travel to a vomiting control center in your brainstem (called the chemoreceptor trigger zone). That center releases a chemical messenger called serotonin, specifically the 5-HT₃ type, which triggers waves of nausea and makes you vomit. Ondansetron blocks the 5-HT₃ receptors (the locks that serotonin normally opens) on nerve cells. With the locks blocked, the vomit command cannot go through, and you feel much less sick to your stomach.

Ceftriaxone plus metronidazole (or piperacillin-tazobactam as a single agent)

Your appendix is a small pouch attached to your large intestine (colon), which is full of bacteria. When the appendix gets blocked and inflamed, bacteria multiply inside the trapped space. If the appendix wall tears open (perforates), bacteria spill into your belly and cause a dangerous infection called peritonitis. Antibiotics kill bacteria before, during, and after surgery to prevent that infection. Ceftriaxone kills many common gut bacteria like *Escherichia coli* and some *Streptococcus* species (gram-negative and some gram-positive bacteria). Metronidazole kills anaerobic bacteria (bacteria that live without oxygen, like *Bacteroides fragilis*) that thrive in the colon. Piperacillin-tazobactam is a single drug that covers both aerobic and anaerobic bacteria at once. These antibiotics damage the bacterial cell wall—the strong outer shell that keeps bacteria alive. When the wall breaks, water rushes in, the bacteria burst, and they die.

Where this information comes from

- World Society of Emergency Surgery (WSES) 2020 appendicitis guideline
- American College of Surgeons (ACS) clinical practice guideline for appendicitis
- American College of Emergency Physicians (ACEP) clinical policy on suspected appendicitis
- Cochrane systematic review on imaging for acute appendicitis

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