

# Appendectomy

The appendix is a small structure at the base of the colon that looks like a stalk or a worm. When the appendix becomes inflamed or infected (**appendicitis**), it needs to be removed with a surgical procedure called an **appendectomy**. Appendectomies are one of the most commonly performed operations, with approximately 1 in 2000 persons requiring an appendectomy during his or her lifetime.

## SIGNS AND SYMPTOMS OF APPENDICITIS

- Abdominal pain
- Nausea and vomiting
- Fever
- Loss of appetite
- Constipation or diarrhea
- Fatigue and listlessness
- Irritability in younger children

## TESTING AND DIAGNOSIS

A medical history is taken and physical examination is performed to determine possible causes of abdominal pain. There are many reasons for abdominal pain besides appendicitis. These include gastroenteritis, indigestion, constipation, diverticulitis, gallbladder disease, hernias, ulcer disease, female reproductive system disease (including ovarian **torsion** [a twisted ovary]), pelvic inflammatory disease, miscarriage of a pregnancy, and ruptured ovarian cysts), male reproductive system disease, bladder infection, kidney or bladder stones, and other less common problems.

The abdominal pain usually associated with appendicitis often starts around the **umbilicus** (belly button), then concentrates in the lower right part of the abdomen. It is made worse by movement or by pressing on the abdomen and quickly releasing that pressure (**rebound tenderness**).

Tests usually include a complete blood cell count (looking for an increase in white blood cells as evidence of an infection), blood chemistries, an abdominal ultrasound, or a computed tomography (CT) scan of the abdomen. Regular x-rays or other tests may be ordered to look for other causes of the symptoms. Electrocardiogram (ECG), chest x-ray, and further testing may be needed, depending on your medical condition.

## TYPES OF APPENDECTOMY

- **Open appendectomy**, the traditional operation for appendicitis, requires a medium-sized **incision** (cut) in the lower right part of the abdomen. The appendix is removed through this incision after surgically separating it from the base of the colon. Open appendectomy usually requires general anesthesia but in some cases may be performed with spinal anesthesia.
- **Laparoscopic appendectomy** is performed using a few small (often less than an inch long) incisions and the assistance of television-type cameras that allow the surgeon to see the appendix and the other internal organs. This technique is most often used for early appendicitis and has an overall shorter recovery time than open appendectomy. If the appendix has **ruptured** (burst) or if there is scar tissue from previous operations, the laparoscopic approach may not be possible and an open appendectomy is necessary. Laparoscopic appendectomy requires general anesthesia for the operation.
- Some cases of appendicitis may be handled in a nonemergency manner if antibiotics are given while waiting. Operations may safely be delayed for certain individuals. Surgeons make that decision on a case-by-case basis.

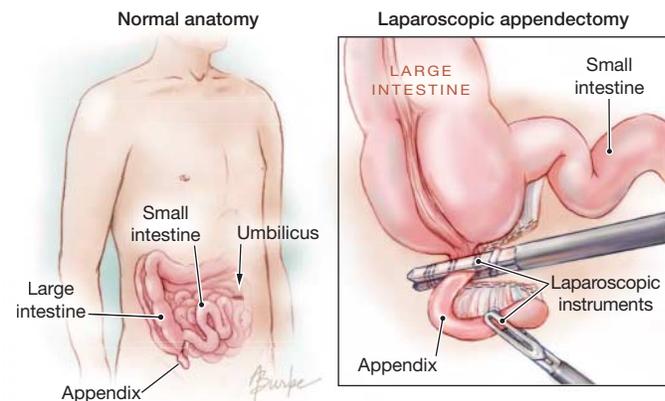
## FOR MORE INFORMATION

- American College of Surgeons  
[www.facs.org](http://www.facs.org)
- Society of American Gastrointestinal and Endoscopic Surgeons  
[www.sages.org](http://www.sages.org)

## INFORM YOURSELF

To find this and previous JAMA Patient Pages, go to the Patient Page Index on JAMA's Web site at [www.jama.com](http://www.jama.com). Many are available in English and Spanish. A Patient Page on acute appendicitis in children was published in the July 25, 2007, issue; one on hernias was published in the May 25, 2011, issue; one on acute abdominal pain was published in the September 27, 2006, issue; and one on general anesthesia was published in the March 9, 2011, issue.

Sources: Centers for Disease Control and Prevention, American College of Surgeons, Society of American Gastrointestinal and Endoscopic Surgeons, American College of Emergency Physicians



Janet M. Torpy, MD, Writer

Alison E. Burke, MA, Illustrator

Robert M. Golub, MD, Editor

The JAMA Patient Page is a public service of JAMA. The information and recommendations appearing on this page are appropriate in most instances, but they are not a substitute for medical diagnosis. For specific information concerning your personal medical condition, JAMA suggests that you consult your physician. This page may be photocopied noncommercially by physicians and other health care professionals to share with patients. To purchase bulk reprints, call 312/464-0776.

**JAMA**  
COPY FOR  
YOUR PATIENTS