# Abdominal Adhesions

*National Digestive Diseases Information Clearinghouse*

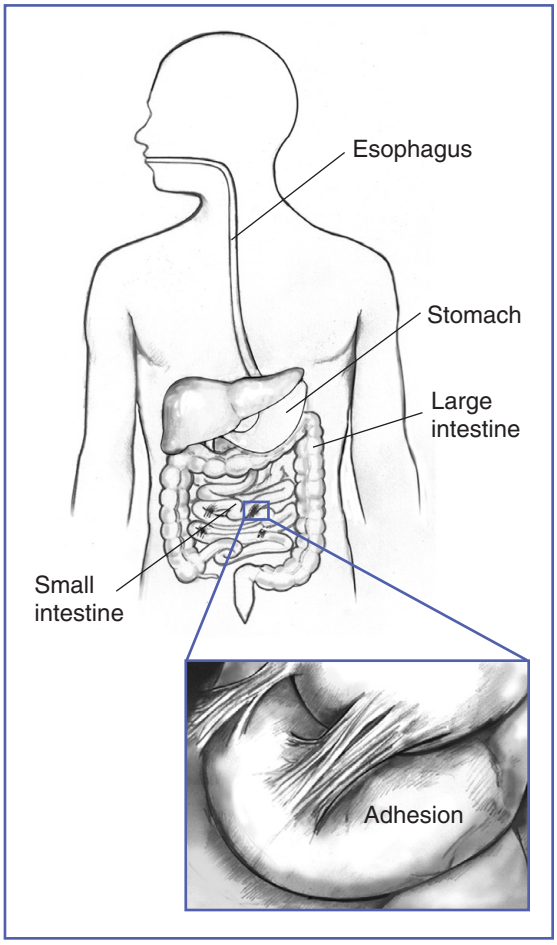
National Institute of Diabetes and Digestive and Kidney Diseases

## What are abdominal adhesions?

Abdominal adhesions are bands of fibrous tissue that can form between abdominal tissues and organs. Normally, internal tissues and organs have slippery surfaces, preventing them from sticking together as the body moves. However, abdominal adhesions cause tissues and organs in the abdominal cavity to stick together.

## What is the abdominal cavity?

The abdominal cavity is the internal area of the body between the chest and hips that contains the lower part of the esophagus, stomach, small intestine, and large intestine. The esophagus carries food and liquids from the mouth to the stomach, which slowly pumps them into the small and large intestines. Abdominal adhesions can kink, twist, or pull the small and large intestines out of place, causing an intestinal obstruction. Intestinal obstruction, also called a bowel obstruction, results in the partial or complete blockage of movement of food or stool through the intestines.

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## What causes abdominal adhesions?

Abdominal surgery is the most frequent cause of abdominal adhesions. Surgery-related causes include

- cuts involving internal organs
- handling of internal organs
- drying out of internal organs and tissues
- contact of internal tissues with foreign materials, such as gauze, surgical gloves, and stitches
- blood or blood clots that were not rinsed away during surgery

Abdominal adhesions can also result from inflammation not related to surgery, including

- appendix rupture
- radiation treatment
- gynecological infections
- abdominal infections

Rarely, abdominal adhesions form without apparent cause.

## How common are abdominal adhesions and who is at risk?

Of patients who undergo abdominal surgery, 93 percent develop abdominal adhesions.[1] Surgery in the lower abdomen and pelvis, including bowel and gynecological operations, carries an even greater chance of abdominal adhesions. Abdominal adhesions can become larger and tighter as time passes, sometimes causing problems years after surgery.

## What are the symptoms of abdominal adhesions?

In most cases, abdominal adhesions do not cause symptoms. When symptoms are present, chronic abdominal pain is the most common.

## What are the complications of abdominal adhesions?

Abdominal adhesions can cause intestinal obstruction and female infertility—the inability to become pregnant after a year of trying.

Abdominal adhesions can lead to female infertility by preventing fertilized eggs from reaching the uterus, where fetal development takes place. Women with abdominal adhesions in or around their fallopian tubes have an increased chance of ectopic pregnancy—a fertilized egg growing outside the uterus. Abdominal adhesions inside the uterus may result in repeated miscarriages—a pregnancy failure before 20 weeks.

[1]Ward BC, Panitch A. Abdominal adhesions: current and novel therapies. *Journal of Surgical Research.* 2011;165(1):91–111.

### Seek Help for Emergency Symptoms

A complete intestinal obstruction is life threatening and requires immediate medical attention and often surgery. Symptoms of an intestinal obstruction include

- severe abdominal pain or cramping
- nausea
- vomiting
- bloating
- loud bowel sounds
- abdominal swelling
- the inability to have a bowel movement or pass gas
- constipation—a condition in which a person has fewer than three bowel movements a week; the bowel movements may be painful

A person with these symptoms should seek medical attention immediately.

## How are abdominal adhesions and intestinal obstructions diagnosed?

Abdominal adhesions cannot be detected by tests or seen through imaging techniques such as x rays or ultrasound. Most abdominal adhesions are found during surgery performed to examine the abdomen. However, abdominal x rays, a lower gastrointestinal (GI) series, and computerized tomography (CT) scans can diagnose intestinal obstructions.

- **Abdominal x rays** use a small amount of radiation to create an image that is recorded on film or a computer. An x ray is performed at a hospital or an outpatient center by an x-ray technician, and the images are interpreted by a radiologist—a doctor who specializes in medical imaging. An x ray does not require anesthesia. The person will lie on a table or stand during the x ray. The x-ray machine is positioned over the abdominal area. The person will hold his or her breath as the picture is taken so that the picture will not be blurry. The person may be asked to change position for additional pictures.
- A **lower GI series** is an x-ray exam that is used to look at the large intestine. The test is performed at a hospital or an outpatient center by an x-ray technician, and the images are interpreted by a radiologist. Anesthesia is not needed. The health care provider may provide written bowel prep instructions to follow at home before the test. The person may be asked to follow a clear liquid diet for 1 to 3 days before the

procedure. A laxative or an enema may be used before the test. A laxative is medication that loosens stool and increases bowel movements. An enema involves flushing water or laxative into the rectum using a special squirt bottle.

For the test, the person will lie on a table while the radiologist inserts a flexible tube into the person's anus. The large intestine is filled with barium, making signs of underlying problems show up more clearly on x rays.

- **CT scans** use a combination of x rays and computer technology to create images. The procedure is performed at a hospital or an outpatient center by an x-ray technician, and the images are interpreted by a radiologist. Anesthesia is not needed. A CT scan may include the injection of a special dye, called contrast medium. The person will lie on a table that slides into a tunnel-shaped device where the x rays are taken.

## How are abdominal adhesions and intestinal obstructions treated?

Abdominal adhesions that do not cause symptoms generally do not require treatment. Surgery is the only way to treat abdominal adhesions that cause pain, intestinal obstruction, or fertility problems. More surgery, however, carries the risk of additional abdominal adhesions. People should speak with their health care provider about the best way to treat their abdominal adhesions.

Complete intestinal obstructions usually require immediate surgery to clear the blockage. Most partial intestinal obstructions can be managed without surgery.

## How can abdominal adhesions be prevented?

Abdominal adhesions are difficult to prevent; however, certain surgical techniques can minimize abdominal adhesions.

Laparoscopic surgery decreases the potential for abdominal adhesions because several tiny incisions are made in the lower abdomen instead of one large incision. The surgeon inserts a laparoscope—a thin tube with a tiny video camera attached—into one of the small incisions. The camera sends a magnified image from inside the body to a video monitor. Patients will usually receive general anesthesia during this surgery.

If laparoscopic surgery is not possible and a large abdominal incision is required, at the end of surgery a special filmlike material can be inserted between organs or between the organs and the abdominal incision. The filmlike material, which looks similar to wax paper and is absorbed by the body in about a week, hydrates organs to help prevent abdominal adhesions.

Other steps taken during surgery to reduce abdominal adhesions include

- using starch- and latex-free gloves
- handling tissues and organs gently
- shortening surgery time
- using moistened drapes and swabs
- occasionally applying saline solution

## Eating, Diet, and Nutrition

Researchers have not found that eating, diet, and nutrition play a role in causing or preventing abdominal adhesions. A person with a partial intestinal obstruction may relieve symptoms with a liquid or low-fiber diet, which is more easily broken down into smaller particles by the digestive system.

## Points to Remember

- Abdominal adhesions are bands of fibrous tissue that can form between abdominal tissues and organs. Abdominal adhesions cause tissues and organs in the abdominal cavity to stick together.
- Abdominal surgery is the most frequent cause of abdominal adhesions. Of patients who undergo abdominal surgery, 93 percent develop abdominal adhesions.
- In most cases, abdominal adhesions do not cause symptoms. When symptoms are present, chronic abdominal pain is the most common.
- A complete intestinal obstruction is life threatening and requires immediate medical attention and often surgery.
- Abdominal adhesions cannot be detected by tests or seen through imaging techniques such as x rays or ultrasound. However, abdominal x rays, a lower gastrointestinal (GI) series, and computerized tomography (CT) scans can diagnose intestinal obstructions.
- Surgery is the only way to treat abdominal adhesions that cause pain, intestinal obstruction, or fertility problems.

## Hope through Research

The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) conducts and supports basic and clinical research into many digestive disorders.

Clinical trials are research studies involving people. Clinical trials look at safe and effective new ways to prevent, detect, or treat disease. Researchers also use clinical trials to look at other aspects of care, such as improving the quality of life for people with chronic illnesses. To learn more about clinical trials, why they matter, and how to participate, visit the NIH Clinical Research Trials and You website at *www.nih.gov/health/clinicaltrials.* For information about current studies, visit *www.ClinicalTrials.gov.*

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