



Gallstones

Overview

Gallstones are hardened deposits of digestive fluid that can form in your gallbladder. Your gallbladder is a small, pear-shaped organ on the right side of your abdomen, just beneath your liver. The gallbladder holds a digestive fluid called bile that's released into your small intestine.

Gallstones range in size from as small as a grain of sand to as large as a golf ball. Some people develop just one gallstone, while others develop many gallstones at the same time.

People who experience symptoms from their gallstones usually require gallbladder removal surgery. Gallstones that don't cause any signs and symptoms typically don't need treatment.

Symptoms

Gallstones may cause no signs or symptoms. If a gallstone lodges in a duct and causes a blockage, the resulting signs and symptoms may include:

- Sudden and rapidly intensifying pain in the upper right portion of your abdomen
- Sudden and rapidly intensifying pain in the center of your abdomen, just below your breastbone
- Back pain between your shoulder blades
- Pain in your right shoulder
- Nausea or vomiting

Gallstone pain may last several minutes to a few hours.

When to see a doctor

Make an appointment with your doctor if you have any signs or symptoms that worry you.

Seek immediate care if you develop signs and symptoms of a serious gallstone complication, such as:

- Abdominal pain so intense that you can't sit still or find a comfortable position
- Yellowing of your skin and the whites of your eyes (jaundice)
- High fever with chills

Causes

It's not clear what causes gallstones to form. Doctors think gallstones may result when:

- **Your bile contains too much cholesterol.** Normally, your bile contains enough chemicals to dissolve the cholesterol excreted by your liver. But if your liver excretes more cholesterol than your bile can dissolve, the excess cholesterol may form into crystals and eventually into stones.
- **Your bile contains too much bilirubin.** Bilirubin is a chemical that's produced when your body breaks down red blood cells. Certain conditions cause your liver to make too much bilirubin, including liver cirrhosis, biliary tract infections and certain blood disorders. The excess bilirubin contributes to gallstone formation.
- **Your gallbladder doesn't empty correctly.** If your gallbladder doesn't empty completely or often enough, bile may become very concentrated, contributing to the formation of gallstones.

Types of gallstones

Types of gallstones that can form in the gallbladder include:

- **Cholesterol gallstones.** The most common type of gallstone, called a cholesterol gallstone, often appears yellow in color. These gallstones are composed mainly of undissolved cholesterol, but may contain other components.
- **Pigment gallstones.** These dark brown or black stones form when your bile contains too much bilirubin.

Risk factors

Factors that may increase your risk of gallstones include:

- Being female
- Being age 40 or older
- Being a Native American
- Being a Hispanic of Mexican origin
- Being overweight or obese
- Being sedentary
- Being pregnant
- Eating a high-fat diet
- Eating a high-cholesterol diet
- Eating a low-fiber diet
- Having a family history of gallstones
- Having diabetes
- Having certain blood disorders, such as sickle cell anemia or leukemia
- Losing weight very quickly

- Taking medications that contain estrogen, such as oral contraceptives or hormone therapy drugs
- Having liver disease

Complications

Complications of gallstones may include:

- **Inflammation of the gallbladder.** A gallstone that becomes lodged in the neck of the gallbladder can cause inflammation of the gallbladder (cholecystitis). Cholecystitis can cause severe pain and fever.
- **Blockage of the common bile duct.** Gallstones can block the tubes (ducts) through which bile flows from your gallbladder or liver to your small intestine. Severe pain, jaundice and bile duct infection can result.
- **Blockage of the pancreatic duct.** The pancreatic duct is a tube that runs from the pancreas and connects to the common bile duct just before entering the duodenum. Pancreatic juices, which aid in digestion, flow through the pancreatic duct.

A gallstone can cause a blockage in the pancreatic duct, which can lead to inflammation of the pancreas (pancreatitis). Pancreatitis causes intense, constant abdominal pain and usually requires hospitalization.

- **Gallbladder cancer.** People with a history of gallstones have an increased risk of gallbladder cancer. But gallbladder cancer is very rare, so even though the risk of cancer is elevated, the likelihood of gallbladder cancer is still very small.

Prevention

You can reduce your risk of gallstones if you:

- **Don't skip meals.** Try to stick to your usual mealtimes each day. Skipping meals or fasting can increase the risk of gallstones.
- **Lose weight slowly.** If you need to lose weight, go slow. Rapid weight loss can increase the risk of gallstones. Aim to lose 1 or 2 pounds (about 0.5 to 1 kilogram) a week.
- **Eat more high-fiber foods.** Include more fiber-rich foods in your diet, such as fruits, vegetables and whole grains.
- **Maintain a healthy weight.** Obesity and being overweight increase the risk of gallstones. Work to achieve a healthy weight by reducing the number of calories you eat and increasing the amount of physical activity you get. Once you achieve a healthy weight, work to maintain that weight by continuing your healthy diet and continuing to exercise.

By Mayo Clinic Staff

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