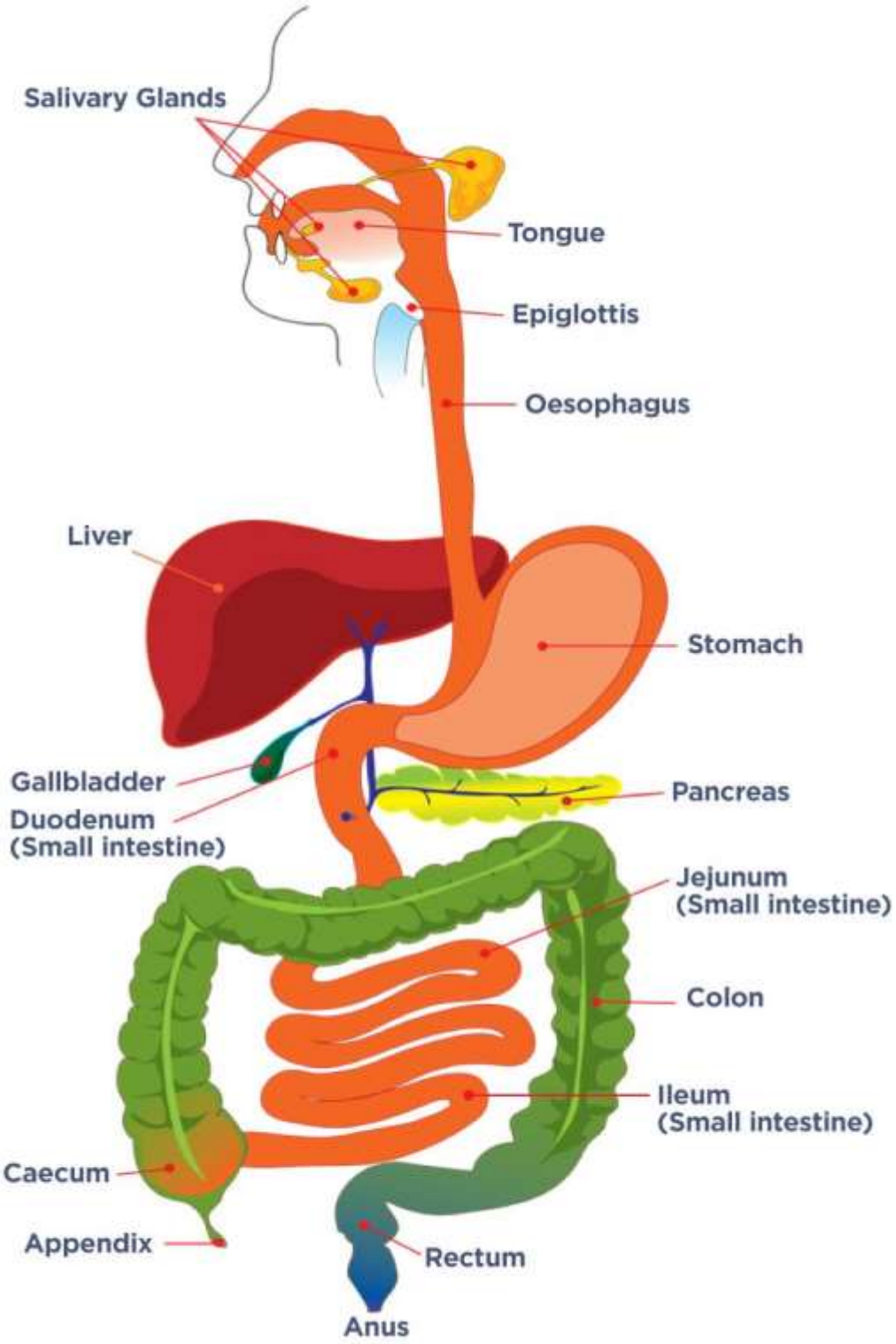
THE DIGESTIVE SYSTEM



Gallstones
Information Leaflet

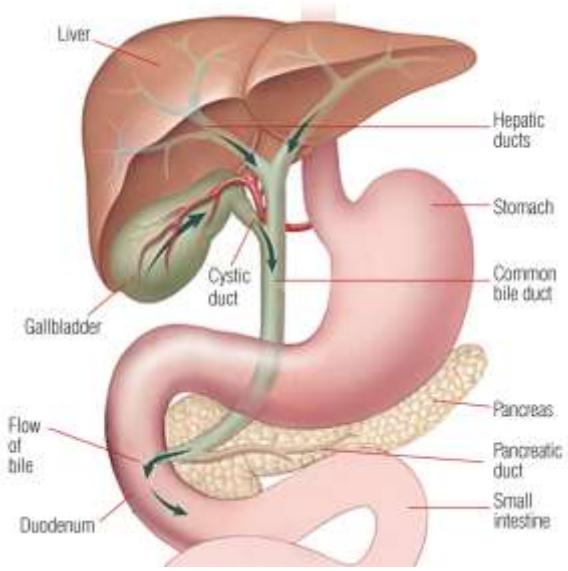
This factsheet is about gallstones

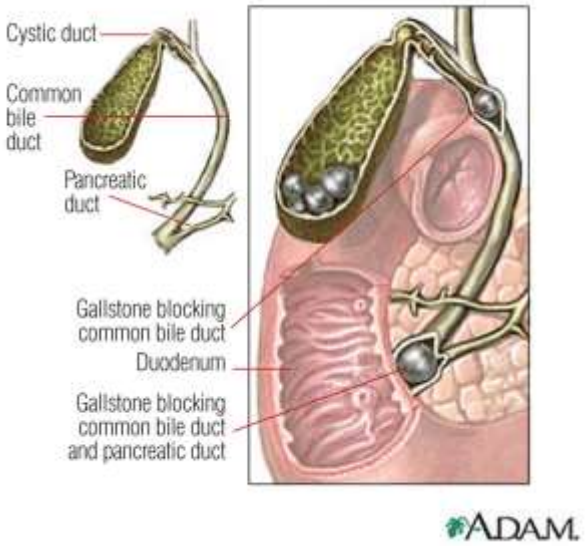
Gall is an old-fashioned word for bile, a liquid made in the liver and stored in the gall bladder (a small bag that sits just under the liver). When we eat, the gall bladder empties the bile along a tube (called the bile duct) that leads to the intestines. Once there, the bile mixes with the food that we have eaten to help with digestion. Gallstones are small solid lumps that can form in bile and can give rise to a variety of symptoms.

Gallstones are very common. The incidence reports show that one in six men and one in three women suffer from gallstones at some point in their life. The prevalence of gallstones in Europe is around 10-15%. By the age of 60 nearly a quarter of women (and a rather smaller number of men) will have developed some gallstones. The condition is commoner in women especially those who have had children and who are overweight. Recently the incidence of gallstones in much younger women and even teenagers has been rising. Overall gallstones seem to be more common generally, possibly as a result of changes in our diet over the last two generations.

How do gallstones occur?

Bile is a mixture of different chemicals. When the bile can no longer hold these chemicals in a liquid solution, gallstones start to form. Starting as tiny crystals, they can grow to resemble gravel and can end up the size of pebbles. Sometimes, there is just a single stone; often there are several and it is not unknown for the gallbladder to contain literally dozens of small stones. Bile contains a lot of cholesterol, a fatty substance that can cause disease in the arteries and in fact the bile process is one way in which the body clears itself of excess cholesterol. However, bile may contain so much cholesterol that when it is stored in the gall bladder the cholesterol separates out as little crystals, which may lump together to form a gallstone. Most gallstones contain cholesterol.





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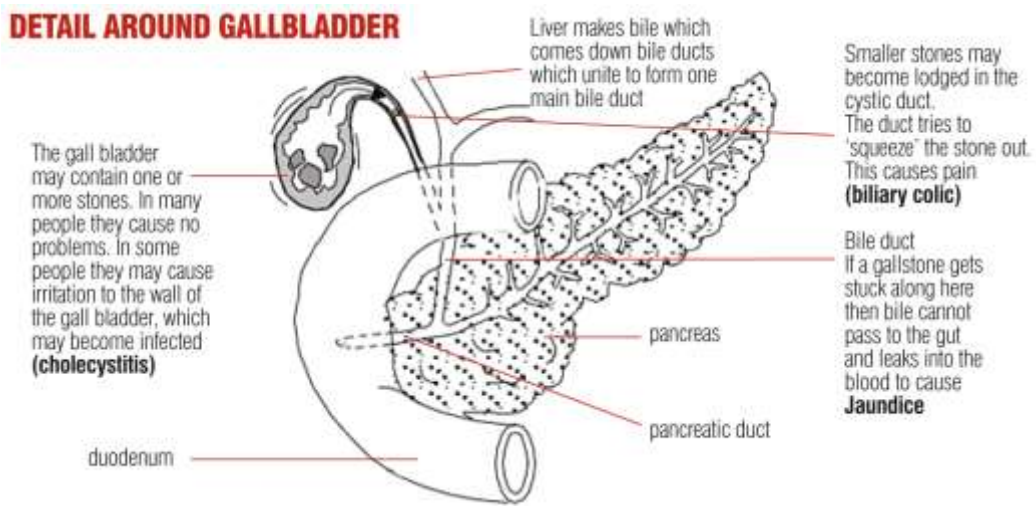
What are the causes?

There are many risk factors that have been linked to gallstone disease such as increased age, being female and family history. The majority of people who have gallstones are unaware that they have them.

What are the usual symptoms?

Around two out of three people have gallstones but have no sign of any symptoms so often they are only found incidentally during investigation for another condition. Gallstones usually only give rise to symptoms if they move from the gall bladder into one of the tubes (known as bile ducts) that lead from the gall bladder and from the liver to the intestine. Complications can include:

- **Biliary colic:** if the gallstones get stuck in the narrow neck of the gall bladder this can cause pain, which can be quite severe. Biliary colic is a pain that is felt in the top of the stomach, either in the middle of, or just under the ribs on the right hand side. It is generally a continuous pain but may come in waves. It is usually rather more severe than 'indigestion' and it is not uncommon for patients to feel so uncomfortable that they may seek medical advice. The pain usually lasts for a few hours and then goes away. Occasionally patients may feel sick or may vomit. The pain often follows a meal and may be noticed most often in the evenings, but one of the features of biliary colic is that it may occur at any time. Biliary colic is the most common symptom of gallstones.
- **Cholecystitis:** the stones may cause inflammation in the wall of the gall bladder, known as cholecystitis.
- **Jaundice (sometimes called yellow jaundice):** this is caused because the body is unable to get rid of bilirubin, which is a yellow chemical that occurs normally in the body. Bilirubin comes from red blood cells that have reached the end of their natural life and is one of the body's waste products that the liver has to deal with. The liver gets rid of bilirubin by mixing it in with bile. If a gallstone blocks the main duct leading from the liver into the intestine, bilirubin can't get out of the body and a yellow colour can be seen in the eyes and the skin. Some of the pigment does escape into the urine making it look a very dark colour whilst stools can be very pale.



How are gallstones diagnosed?

The doctor might suspect gallstones if the patient reports pains anywhere round the top of the abdomen, particularly if these have been lasting for a matter of hours at a time and coming and going in waves. The presence of jaundice adds to the likelihood of this diagnosis and a visual check for signs of jaundice would be carried out. In addition, the doctor will carry out a physical examination to determine whether there is soreness at the top of the abdomen. If these findings point to a diagnosis of gallstones, it is usual for the patient to be referred for further investigation. These can include:

- **Blood tests:** these will be carried out to determine whether there are signs of jaundice or inflammation.
- **Ultrasound scan:** this is where a small flat probe is moved over the upper abdomen in the region of the liver and gall bladder. Gallstones reflect ultrasound very well and unless they are deep in the abdomen or hidden behind some gas in the intestine, are easily detected on the screen.
- **CT or MRI scan:** if the ultrasound scan does not give a clear result then other tests may be needed such as a CT or MRI scan.

What treatment is available?

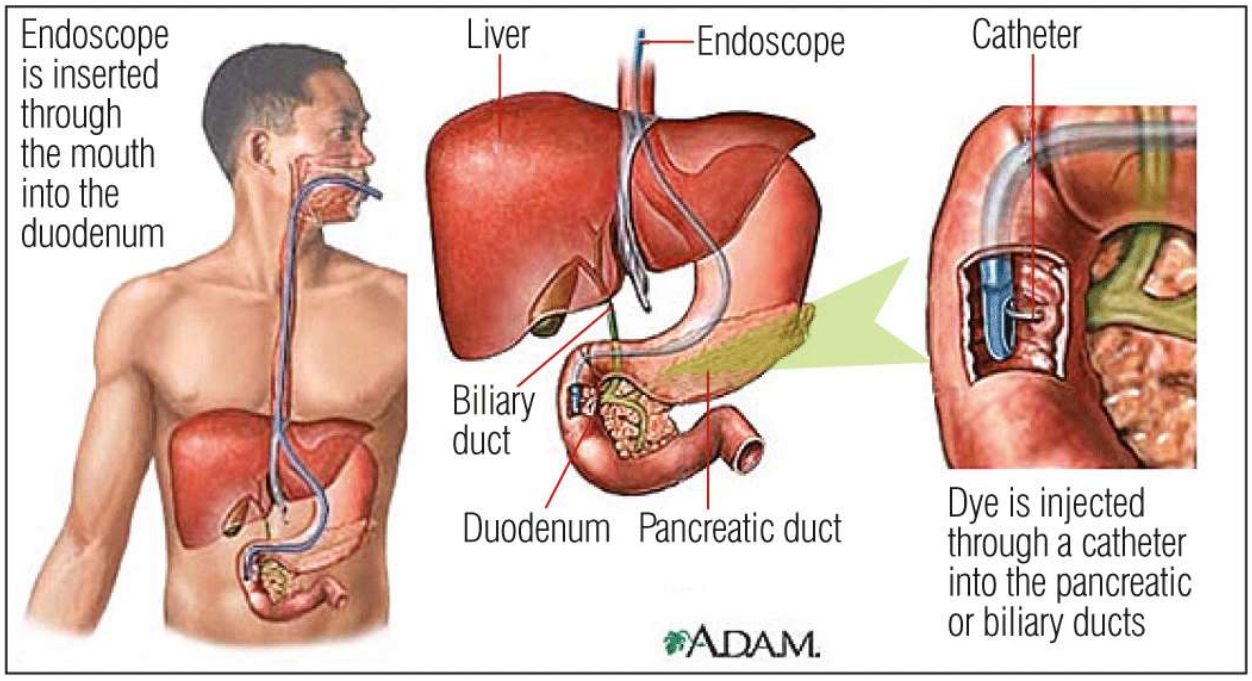
If the gallstones are not causing any symptoms, then it may not be necessary to have any treatment at all. Even if you have a single attack of pain from gallstones, there may be no further trouble for many years, if ever, as this usually means that a single stone has travelled all the way out of the gall bladder, down the bile duct, into the intestine and has been passed naturally, so that in effect the patient has cured himself or herself of the problem.

If gallstones are causing pain then they have to be removed. This can be done in several ways:

- **Surgery:** if the gallstones are all contained in the gall bladder, then the simplest method is to have a small operation to remove the gall bladder and the stones within it. Nowadays, this is usually done via keyhole surgery, a procedure from which the patient will recover within just a day or two - a huge improvement from the much larger operations that were necessary for gallstones in the past. There is no question that, for most people, keyhole surgery is currently the best option for treating gallstones.
- **Endoscopic Retrograde Cholangio-Pancreatography (ERCP):** this is where stones in the bile duct are removed with an endoscope. With ERCP, a flexible endoscope is passed through the mouth, down to the stomach to reach the opening of the bile duct into the intestine. A tiny tube is then passed through the endoscope and inserted into the lower end of the bile duct. Initially a dye is squirted through this tube so that an x-ray picture of the duct can then be taken (a cholangiogram) and also, if required, a picture of the pancreatic duct (pancreatogram), hence ERCP. If the cholangiogram confirms the presence of a stone in the duct this can either be removed or the bottom end of the duct can be enlarged so that the stone can pass out naturally. Alternatively, small drainage tubes (stents) may be inserted around the stones to allow the bile to flow freely again. These advantageous techniques mean that an operation can be avoided, which is particularly useful in older or frailer patients.
- **Shock Waves:** in a very small number of centres, gallstones can be broken up by using shock waves.

- **Dissolving the gallstones:** this is where bile acids are taken by mouth in an attempt to dissolve the gallstones. This treatment is rarely now used because it is a lengthy process, success rates were modest and recurrence of gallstones was frequent. However, some centres will still prescribe it with the aim to soften up the stones before a procedure is carried out.
- **Gall Bladder Removal:** the gall bladder, whilst useful, is not essential to the body and its removal (known as a cholecystectomy) should raise no problems for those who undergo it. If there is no gall bladder, bile just dribbles continuously into the intestine, rather than being reserved purely for after meals, as is the case if the gall bladder is functioning normally. There is no problem with digestion and most people do not have any after-effects from their gall bladder having been removed, although a minority of people still get symptoms and may have to alter their diets slightly. Sometimes other conditions such as Irritable Bowel Syndrome (IBS) can cause pains that seem to be coming from the gall bladder, and these will not improve after cholecystectomy. The operation to remove the gallbladder is extremely common with more than 60,000 performed on the NHS every year.

It is important to note that people who are high risk of stone formation may, after time, develop further stones in the bile ducts and potentially suffer symptoms again. If this happen, the patient is treated with ERCP.



What to ask your doctor?

- I am getting stomach pains – have I got gallstones?
- I think I have gallstones, what should I do?
- Will diagnosis be painful for me?
- Are gallstones dangerous?

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For more information about research in this area please contact Guts UK Charity on

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