

[www.corecharity.org.uk](http://www.corecharity.org.uk)

INFORMATION ABOUT

# GALLSTONES

WHAT WHY  
WILL HOW OR  
IF WHEN

IN ASSOCIATION WITH:

**core**  
FIGHTING GUT AND LIVER DISEASE

**bsg**  
BRITISH SOCIETY OF  
GASTROENTEROLOGY

**PCSG**  
Primary Care Society  
for Gastroenterology

# GALLSTONES

Gall is an old-fashioned word for what we now call bile. Usually bile is a liquid but gallstones are small solid lumps that can form in bile and can give rise to a variety of symptoms.

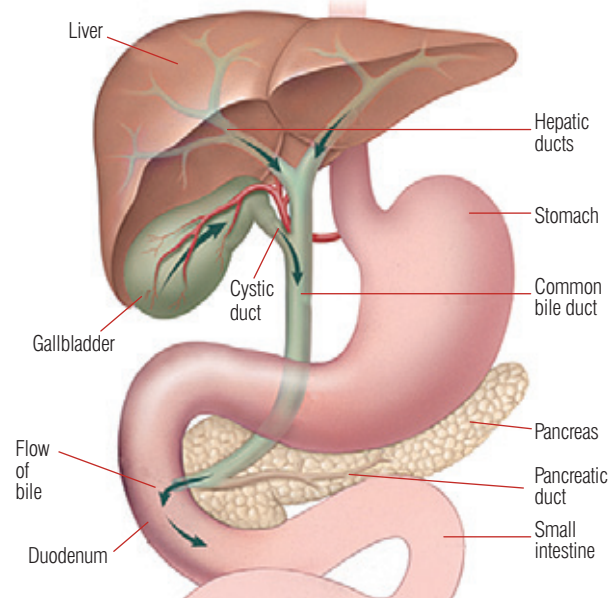
Bile is made in the liver but the body stores it in a small bag just under the liver called the gall bladder. When we eat, the gall bladder empties the bile along a tube (called the bile duct) that leads to the intestines. Once there, the bile mixes with the food that we have eaten to help with digestion.

## WHY DO GALLSTONES FORM?

Gallstones start as tiny crystals, then grow to resemble gravel, and may end up looking like 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 is a mixture of different chemicals. When the bile can no longer hold these chemicals in a liquid solution, gallstones start to form.

The majority of gallstones contain cholesterol. You may have heard of

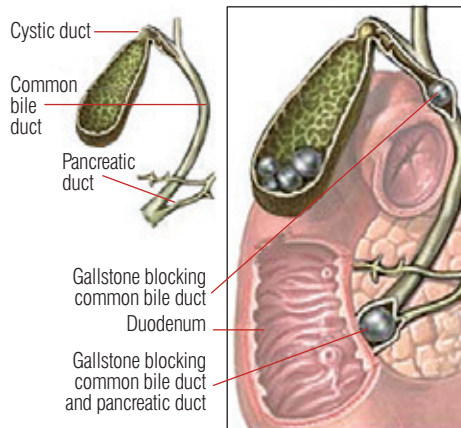
cholesterol as a fatty substance in our diet that can cause disease in arteries. Cholesterol may be bad for arteries but the liver finds it very useful. Bile contains lots of cholesterol and indeed it is an important way for the body to clear itself of any excess. Bile may contain so much cholesterol that when it is stored in the gall bladder the cholesterol may separate out as little crystals, which may lump together to form a gallstone<sup>1</sup>.



## WHO GETS GALLSTONES?

Gallstones are very common, but most people who have them do not know. The incidence reports show that one in six men and one in 3 women suffer from gallstones at some point in their life<sup>2</sup>. The prevalence of gallstones in Europe is around 10-15% with prevalence rates differing all over the world<sup>3</sup>.

By the age of 60 nearly a quarter of women (and a rather smaller number of men) will have developed some gallstones. The old saying that gallstones are seen in people with all the 'Fs' (fair, fat, female, fertile and forty) has some truth in it, since gallstones are commoner in women, especially those who have had children and who are overweight. However the age at which gallstones may give symptoms has changed a lot in recent years, and doctors see gallstones in much younger women, sometimes even teenagers, although it is certainly true to say they become commoner as we get older. They do seem to be getting rather more common generally, possibly as a result in changes in our diet over the last two generations. There are many risk factors that have been linked to gallstone disease such as increased age, female sex and family history<sup>4</sup>.



## DO THEY ALWAYS CAUSE SYMPTOMS?

Although gallstones may give rise to a number of different symptoms, they can be found quite incidentally in, for example, somebody who is having x-rays or ultrasound scans done for a completely different reason. In that situation, such stones are best left alone unless they go on to cause symptoms. This only happens in a minority of patients. Around 2 out of 3 people have gallstones but have no sign of any symptoms<sup>5</sup>. Indeed doctors think that most people who get gallstones at some stage during their life are never aware that they have them.

## WHAT SYMPTOMS MAY GALLSTONES CAUSE?

It is not always clear why gallstones should cause problems for one individual yet leave another quite unaware of their presence. 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 the intestine. If they get stuck in the narrow neck of the gall bladder this can cause pain, which can be quite severe. This type of pain is called biliary colic. Alternatively, the stones may cause inflammation in the wall of the gall bladder (known as cholecystitis<sup>6</sup>).

If a stone gets into the main duct leading from the liver into the intestine it can give rise not only to pain from biliary colic but it may block the flow of bile from the liver altogether which causes jaundice (see below). By far the commonest symptom caused by gallstones is biliary colic.

## WHAT IS BILIARY COLIC?

Biliary colic is a pain that is felt in the top of the stomach, either in the middle or just under the ribs on the right hand side. It is usually a continuous pain but may come in waves<sup>7</sup>. 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 most irritating features of biliary colic is that it may occur at any time.

## WHAT IS JAUNDICE?

Jaundice (sometimes called yellow jaundice) is caused because the body is unable to get rid of bilirubin, which is a yellow chemical that occurs normally in the body<sup>8</sup>. Bilirubin comes from red blood cells that have reached the end of their natural life, and it 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. So, 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 in the urine making it look a very dark colour.

## WHAT MIGHT MAKE MY DOCTOR SUSPECT THAT I HAVE GALLSTONES?

Your doctor might suspect gallstones if you have been getting pains anywhere round the top of your abdomen, particularly if these have been lasting for a matter of hours at a time, and coming and going. If you develop jaundice as well, your doctor would feel that it was very probable that you had gallstones. Your doctor would examine you to see if there was any soreness in the top of your abdomen, which is often the case, and might look at the whites of your eyes to see if there is any sign of jaundice.

## WHAT TESTS MIGHT I HAVE?

Your doctor would probably arrange for you to have some blood tests to look for signs of inflammation or jaundice. The best test for gallstones is an ultrasound scan. This is a very easy scan to have, as a little probe is moved over the upper abdomen in the region of the liver and gall bladder, and usually it is very easy to pick out gallstones on the screen. Gallstones reflect ultrasound very well and are easily detected, unless they are

deep in the abdomen or hidden behind some gas in the intestine. If the ultrasound scan does not give a clear result then other tests may be needed. Fortunately there are a number of different ways of scanning the gallbladder that enable doctors to say with confidence whether or not you have gallstones.

## WHAT IF I DON'T WANT SURGERY?

If you have had episodes of pain that your doctor thinks are due to gallstones, it is likely that you will be offered surgery unless you are so unfit that an operation would be too risky. If you do not like the idea of surgery, you might choose to wait and see what happens to you. It is likely you will continue to have bouts of pain but most people with gallstones do not develop other complications. A small number of people will get jaundice but this can usually be readily treated as described previously. Rarely, a gallstone can block the pancreas. This leads to a potentially serious complication called acute pancreatitis. If you are going to choose not to have surgery, do ensure that you are aware of the small risk that you are running.

## HOW ARE GALLSTONES TREATED?

If they 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. 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. Gallstones have to be physically removed. This is usually done in one of two ways. 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<sup>9</sup>. Nowadays, these operations can often be done with keyhole surgery, which means that patients recover from

the operation within just a day or two, a huge improvement from the much larger operations that used to be necessary for gallstones in the past. It is seen as a very safe procedure.

The other way of dealing with gallstones, by endoscopy, is used for stones that have found their way into the common bile duct and caused a blockage there. Such stones can often be treated with ERCP (see below). Occasionally doctors might recommend other sorts of treatment.

Dissolving gallstones by taking bile acids by mouth has largely gone out of vogue because treatment was lengthy, success rates were modest and recurrence of gallstones was frequent. In a very small number of patients, gallstones can be broken up by using shock waves. There is no question that, for most people, surgery is currently the best option for treating gallstones.

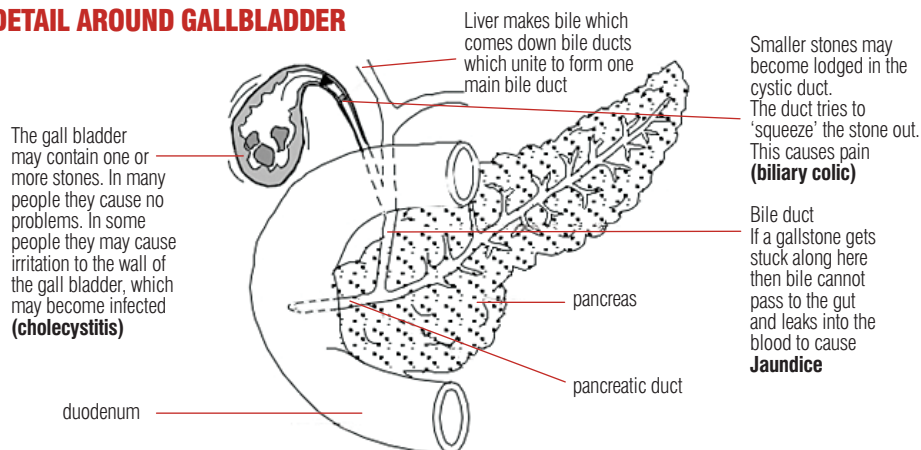
## CAN PEOPLE MANAGE WITHOUT A GALL BLADDER?

Yes. 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 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. The gall bladder, whilst useful, is not essential to the the body and functioning without it should raise no problems.

## DETAIL AROUND GALLBLADDER



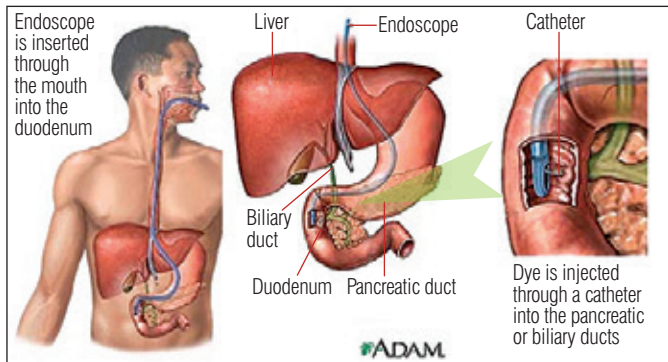
## WHAT IS ERCP?

ERCP (as it is usually known) means Endoscopic Retrograde Cholangio-Pancreatography<sup>9</sup>, which is a complicated way of describing a method in which stones in the bile duct may be removed with an endoscope so that open surgery is unnecessary, although it may be required subsequently to remove the gall bladder once the bile duct is clear. 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. If dye is squirted through this tube an x-ray picture of the duct can then be taken. The dye

is squirted backwards (retrograde) up the duct and produces a picture of the bile duct (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 more often the bottom end of the duct can be enlarged so that the stone can pass out naturally. It is also possible to put little drainage tubes (stents) past the stones so that the bile can then, flow freely again.

These and similar techniques have the big advantage that an operation can be avoided, which is particularly useful in older or frailer patients.



## WHAT RESEARCH IS NEEDED?

We need to know why gallstones have been becoming more common in recent years. It should then be possible to help to prevent them and their complications in the future. Although keyhole surgery has been a huge advance, like all surgical procedures, there can be complications. Gallstones are such a common problem that we need imaginative researchers to come up with non-surgical methods of treating them.

## REFERENCES

1. <http://www.nhs.uk/Conditions/Gallstones/Pages/Causes.aspx>
2. <http://www.patient.co.uk/health/gallstones>
3. Sanders G, Kingsnorth AN; Gallstones. *BMJ*. 2007 Aug 11;335(7614):295-9.
4. Epidemiology and Risk Factors for Gallstone Disease: Has the Paradigm Changed in the 21st Century. Eldon A. Shaffer, [http://www.patient.co.uk/health/gallstones/BeckinghamLJ;ABCofdisordersofliver,pancreas,andbiliarysystem.Gallstone.disease.BMJ.2001Jan13;322\(7278\):91-94](http://www.patient.co.uk/health/gallstones/BeckinghamLJ;ABCofdisordersofliver,pancreas,andbiliarysystem.Gallstone.disease.BMJ.2001Jan13;322(7278):91-94).
5. <http://www.nhs.uk/conditions/Cholecystitis-acute/Pages/Introduction.aspx>
6. <http://www.nhs.uk/Conditions/Gallstones/Pages/Symptoms.aspx>
7. David GG, Al-Sarira AA, Willmott S, et al; Management of acute gallbladder disease in England. *Br J Surg*. 2008 Apr;95(4):472-6.
8. <http://www.patient.co.uk/doctor/endoscopic-retrograde-cholangiopancreatography>

# YOU CAN HELP COMBAT GUT AND LIVER DISEASE BY MAKING A DONATION.

Conditions that affect the gut, the liver and the pancreas (collectively known as digestive diseases) are widespread but little known. They can cause significant health problems for people who live with them and, sadly, they are a factor in 1 in 8 UK deaths. Core is the only national charity working to change this by fighting all digestive diseases. As a charity, Core:

- Supports important medical research that looks for cures and for ways of improving the lives of patients;
- Provides evidence-based information that enables patients and families to understand and control their condition;
- Works to raise awareness of these conditions, their symptoms and impact.

## THERE ARE MANY WAYS YOU CAN SUPPORT OUR WORK NOW:

- Call us on **020 7486 0341**
- Text **CORE14** plus your donation amount to **70070**
- Complete the form overleaf and return it to us
- Donate via our website at **[www.corecharity.org.uk](http://www.corecharity.org.uk)**

You can find more information about digestive diseases and about Core's work by visiting our website at **[www.corecharity.org.uk](http://www.corecharity.org.uk)** or by calling **020 7486 0341** during office hours.

This leaflet was published by Core in 2014 and will be reviewed during 2016. If you are reading this after 2016 some of the information may be out of date. This leaflet was written under the direction of our Medical Director and has been subject to both lay and professional review.

All content provided for information only. The information found is not a substitute for professional medical care by a qualified doctor or other health care professional. ALWAYS check with your doctor if you have any concerns about your condition or treatment. The publishers are not responsible or liable, directly or indirectly, for ANY form of damages whatsoever resulting from the use (or misuse) of information contained in or implied by the information in this booklet.

Please contact us if you believe any information in this leaflet is in error.

**This information booklet is produced by Core, the only national charity fighting all digestive diseases. Show your support for Core by making a donation today or by joining us as a Core Friend.**

I would like to join **Core Friends** and will be making a **Monthly/Quarterly/Annual** donation of £

I have completed the Direct Debit form below and signed the Gift Aid declaration if appropriate.

I would like to support Core with a donation of £5  £10  £25  Other £

I have signed the Gift Aid declaration below.

Please find a cheque enclosed  **OR** Please charge my credit card

Name

Address

Postcode

Tel

Email

**MAKE A DONATION TODAY**

Card No.  Expiry  /  Sec. code

Address (if different to below)

Please call me on  to take my payment details.

*giftaid it*

Please treat as Gift Aid donations all qualifying gifts of money made today, in the past four years and in the future. I confirm I have paid or will pay an amount of Income Tax and/or Capital Gains Tax for each tax year (6 April to 5 April) that is at least equal to the amount of tax that all the charities or Community Amateur Sports Clubs (CASCs) that I donate to will reclaim on my gifts for that tax year. I understand that other taxes such as VAT and Council Tax do not qualify. I understand the charity will reclaim 28p of tax on every £1 that I give up to 5 April 2008 and will reclaim 25p of tax on every £1 that I give on or after 6 April 2008.

Signature

Date  /  /

**SUPPORT BY REGULAR GIVING**

**Instruction to your Bank or Building Society to pay by Direct Debit**

Please fill in form in ballpoint pen and send to: **Freeport RTJK-YYUL-XXSZ, Core, London NW1 4LB**



Name(s) of Account Holders(s)

Originator's Identification Number

Bank/Building Society Acc No.  Branch Sort Code

Core Reference

Name and address of your Bank or Building Society  
Branch Name   
Address   
Postcode

**Instruction to your Bank or Building Society**

Please pay Core Direct Debits from the account detailed in this instruction subject to the safeguards assured by the Direct Debit Guarantee.

I understand that this instruction may remain with Core and, if so, details will be passed electronically to my Bank/Building Society.

Contact Number

Signature(s)

Date

**NOTE:** Banks and Building Societies may not accept Direct Debit instruction for some types of accounts.

Payment Date (not 31st)

Amount £

Please contact me about supporting Core in other ways

I require a receipt for this donation  I do not wish to be contacted by Core

Please send your completed form to **Freeport RTJK-YYUL-XXSZ, Core, London NW1 4LB**

You can also support Core online at [www.corecharity.org.uk](http://www.corecharity.org.uk)

or call us on **020 7486 0341**

Core is registered charity 1137029.

**SUPPORTED AND PRINTED BY**



T: 01273 420983 E: [info@cmprint.co.uk](mailto:info@cmprint.co.uk)  
[www.cmprint.co.uk](http://www.cmprint.co.uk)