

Patient information factsheet

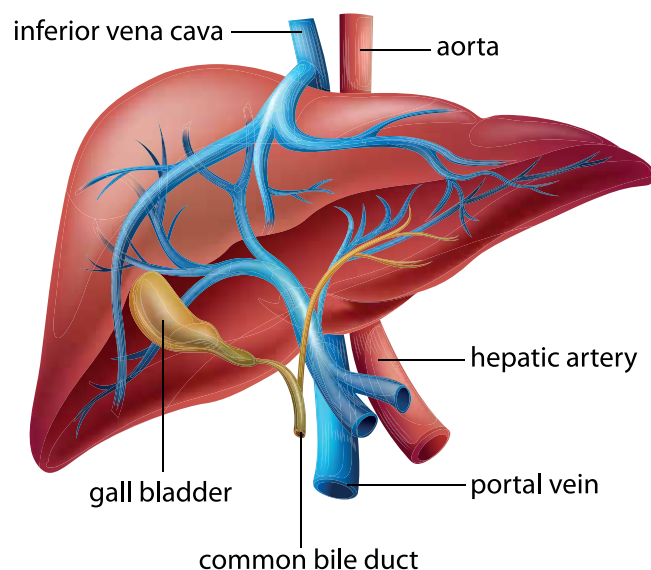
Bile recycling

You have been given this factsheet to help you understand the process of bile recycling. If you have any further questions your healthcare team will be happy to answer them.

What is bile and its normal function in the body?

Bile is a bitter, dark green to yellowish-brown liquid produced by your liver to help with digestion. It is transported through the bile ducts to the gallbladder where it is stored until needed. When you eat, bile is released from the gallbladder into the bowel where it mixes with food to aid the digestion, especially the absorption of nutrients from fats and fat soluble vitamins. These include vitamins A, D and E, found mainly in fatty foods including vegetable oil, eggs, milk and other dairy products.

Diagram of the liver



What happens without bile?

Without bile, your body is unable to fully digest and absorb the fats you eat or fat soluble vitamins. The undigested fat will be excreted, or passed, in your faeces. This is called steatorrhea. Signs of steatorrhea include pale beige or grey, greasy and offensive smelling stools. Steatorrhea, if untreated, may lead to weight loss due to fat malabsorption (when your body does not fully absorb essential nutrients). Nutrients are needed for energy and to stay healthy and steatorrhea can ultimately lead to malnutrition.

Why might it be necessary to recycle bile?

Sometimes bile may not be able to reach the gallbladder and bowel due to a narrowing of, or an obstruction (blockage) in the bile ducts. It is therefore necessary to find another way of helping the bile reach the digestive system, in order to avoid the problems associated with steatorrhea.

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How bile is recycled

Bile can be collected using an external drain (biliary drain), and put back into the digestive system, bypassing any narrowing or blockage of the bile ducts. It can then mix with the food you eat, aiding digestion and fat absorption. This process is known as bile recycling.

How does the bile then get back into the digestive system?

There are two ways in which the drained bile can then get back into the digestive system:

- **Orally** - you can drink the bile through your mouth. It can be mixed with a sweet-tasting drink (such as cola or pineapple juice), and the mixture drunk with meals.
- **Via a feeding tube** - if you do not want to drink the bile, a feeding tube can be placed through your nose leading to your stomach or small bowel to deliver the collected bile.

This factsheet explains how to recycle bile orally. If you decide to use a tube, our dietitians will discuss this with you.

When to recycle bile

Bile recycling will need to take place every time you eat food containing fat. Whether this is three times a day with your main meals or more often when snacking on fatty foods between meals will depend on your eating pattern. Our dietitians will be able to assist you with knowing when to recycle bile.

Your medical team will advise you on how much bile you will need to recycle each time. The amount needed may start off low and increase over time. The biliary drain will need to be emptied twice a day, morning and evening to ensure the bile remains fresh.

The bile should be emptied from the drain bag into a glass before mixing it with a sweet-tasting drink. The advantage of mixing the bile with a sweet drink is that the sweetness can counteract the bitter, salty taste of the bile.

Low sugar or diet drinks can be used as a substitute if you have diabetes or if your healthcare team advise you to do so.

The bile should be consumed with your meals and any fatty snacks. For best results, it is important that the bile is always recycled within 30 minutes of eating your meal. Many people find using a straw and a coloured glass make it easier to drink the bile recycling mixture.

Risks

It's important that you pay extra attention to your dental hygiene while you are bile recycling, as otherwise this process may cause tooth decay.

When to stop recycling

Your healthcare team will give you guidance on how long you should continue to bile recycle. You will be advised to contact them if the colour, consistency or smell of your bile changes.

You should also contact the team to let them know if your drain moves or stops draining.

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Support

Whether you are an inpatient or outpatient, there will be several members of your healthcare team, led by your consultant, supporting you during this process. They will keep you informed of your progress and any future treatment plans. You will also receive advice and support from our dietitian to help ensure you have the best possible diet.

If you have any questions or concerns about anything in this factsheet, a member of the team will be happy to advise you. You can get in touch using the numbers below.

Useful telephone numbers

If you have any questions or concerns please contact the ward you were discharged from or your clinical nurse specialist (CNS).

Dietitian department: **023 8120 6072**

Professor Primrose, Mr Armstrong, Mr Arshad and Mr Hamady's secretary: **023 8120 6796**

Mr Takhar and Mr Karavias's secretary: **023 8120 6977**

Useful links

British Liver Trust website: **www.britishlivertrust.org.uk**

For a translation of this document, or a version in another format such as easy read, large print, Braille or audio, please telephone **023 8120 4688**.

For help preparing for your visit, arranging an interpreter or accessing the hospital, please visit **www.uhs.nhs.uk/additionalneeds**