Bile acid malabsorption

This leaflet offers more information on bile acid malabsorption. If you have any further questions or concerns, please speak to the staff member in charge of your care.

What is bile acid malabsorption (BAM) and why have I got it?
Bile acids are made in the liver and stored in the gallbladder. They help us to break down the fat in our food, so it can then be absorbed into the body.

When you start eating, bile acids are released into the upper part of your small bowel, ready to help digest your food. When bile acids reach the end of your small bowel, they are reabsorbed back into your body, transported back to the liver and then the gallbladder ready for your next meal. Normally, 95-97% of your bile acids are recycled like this. The remaining small amount is not reabsorbed but reaches the large bowel and is excreted with the stool.

If not enough bile acid is reabsorbed, too much will enter the large bowel. This draws water into the large bowel causing loose or watery stools (diarrhoea).

What are the different types of BAM?
There are three types of BAM.

**Type one**
The area of small bowel where bile is absorbed is inflamed (due to Crohn’s disease) or surgically removed (ileal resection or right hemicolecctomy).

**Type two**
This type used to be called primary or idiopathic malabsorption as no cause could be found. We now know that it is probably caused by the overproduction of bile acid. This type affects 1% of the general population.

**Type three**
This type happens due to another surgical procedure or medical condition. For example:
- surgery to remove the gallbladder (cholecystectomy)
- damage to the small bowel by pelvic radiotherapy
- chronic pancreatitis
- coeliac disease
- small intestinal bacterial overgrowth (SIBO)
- surgery to remove ulcers from the stomach or upper small bowel (duodenum)
- diabetes.

What are the signs and symptoms?
BAM can cause diarrhoea, urgency to get to the toilet, faecal incontinence, abdominal pain, wind and bloating. If you do not have enough bile to digest your food, you may notice the passage of pale, fatty stools (steatorrhoea) and weight loss.
Do I need any tests to confirm the diagnosis?

You may have a special scan, called a SeHCAT scan to check if you have BAM. This is an accurate and non-invasive test where you will have two body scans, one week apart. Between one and three hours before the first scan, you will take a pill containing artificial bile acid. The first scan then checks the amount of the artificial bile acid in your body (this is called the baseline value).

The second scan is to see how much of the artificial bile acid has stayed in your body. If this is less than 15%, it is likely that you have BAM.

We can grade how bad your BAM is using the following cut-off points:

- 15 - 20% of artificial bile acid left after one week = borderline BAM
- 10 - 15% of artificial bile acid left after one week = mild BAM
- 5 - 10% of artificial bile acid left after one week = moderate BAM
- 0 - 5% of artificial bile acid left after one week = severe BAM.

If you have had part of your small bowel removed (ileal resection), the chance of you having BAM will be very high (around 97%) so if you have symptoms you will not need a SeHCAT scan before starting treatment.

What treatments are available?

Treatment will depend on the grade of BAM that you have.

The main treatment for borderline and mild BAM is a low-fat diet, with medication only if symptoms still bother you. Moderate and severe BAM will probably need medication and a low-fat diet.

Medication

Bile acid binders (sequestrants) work by binding to excess bile acid, preventing the effects of free bile acids in the large bowel.

It can take several days from starting bile acid binders for diarrhoea to improve and even longer for flatulence, so you should trial binders for at least ten days to see if they work for you.

If binders work for you but you decide to stop taking them, your symptoms will probably return within a few days. It's likely you will need to take the medication for life.

Currently there are three different types of bile acid binder available:

- Colestryramine (brand name Questran)
- Colestipol (brand name Colestid)
- Colesevelam (brand name Cholestagel).

Colestryramine and colestipol are powders that are mixed with water and drunk. Some people don’t like the taste of these, so you could try the following to make them taste better:

- add the powder to half a cup of apple sauce, other fruit sauce, or crushed pineapple, mix thoroughly
- add powder to half a cup of fruit juice or other non-caffeinated drink, mix thoroughly
- add the powder to half a cup of milk or broth
- refrigerate the mixture
- stir well
- mix powder with half water to dissolve it first, then finish it off with fruit juice or smoothie
- mix the powder with pudding or custard.
Sometimes one sachet every other day is enough, but most people will need to take them once, twice or even three times a day to control their symptoms. A side effect of bile acid binders is constipation, so increasing the dose slowly is important. Your gastroenterologist or dietitian can advise you on how to do this.

Colestyramine and colestipol can interfere with the absorption of some medications, (e.g. warfarin, diuretics, thyroxine, beta-blockers, digoxin) and certain vitamins. You should try and take your other medications one hour before or four hours after bile acid binders.

Colestevolar is available in tablet form. Most people need between two and six tablets a day in two or three divided doses, usually after food. It does not interfere with the absorption of other medications.

**What happens if I do not get treatment?**

It is unlikely that symptoms will improve without treatment, and untreated BAM can increase the risk of gallstones and kidney stones.

**Is there anything I can do to help myself?**

Patients with mild, moderate and severe BAM should consider taking a general multivitamin (e.g. Sanatogen A-Z Complete) and a combined calcium and vitamin D supplement (such as Calcichew D3 Forte).

A low fat diet can help to improve symptoms in people with BAM. A low-fat diet means that less than 20% of your total energy should come from fat (e.g. 40g fat for someone eating 1,800 calories a day). Your dietitian can advise you on your grams of fat allowance.

A low-fat diet only allows 10-15 grams (two or three teaspoons) of spread, butter and cooking oil per day, so try boiling, dry roasting, microwaving, steaming and grilling instead of frying food.

Lean meat (e.g. skinless chicken, turkey, extra lean mince), fish, eggs, beans and pulses are all suitable on a low-fat diet. Starchy carbohydrate foods (e.g. bread, pasta, potatoes, rice), fruit and vegetables are all fine if served without butter or oil. Full-fat milk (blue top) should be replaced with semi-skimmed (green top) or skimmed milk (red top). Only low-fat cheeses (e.g. low fat cheese spread, cottage cheese and Quark) are allowed. Fat-free desserts are allowed, but chocolate, cake, biscuits and pastry are too high in fat so should be avoided.

Your gastroenterologist can refer you to a dietitian for a tailored low-fat diet for BAM.

**Useful sources of information**

CORE is a national UK charity that funds research into all diseases of the gut.

Their website has a patient information factsheet on BAM:


**Contact us**

If you have any questions or concerns about BAM, please contact your gastro doctor, nurse or dietitian on 020 8725 3569 (Monday to Friday, 9am to 5pm).

For more information leaflets on conditions, procedures, treatments and services offered at our hospitals, please visit [www.stgeorges.nhs.uk](www.stgeorges.nhs.uk)
Additional services

**Patient Advice and Liaison Service (PALS)**
PALS can offer you on-the-spot advice and information when you have comments or concerns about our services or the care you have received. You can visit the PALS office between 9am and 5pm, Monday to Friday in the main corridor between Grosvenor and Lanesborough Wing (near the lift foyer).
**Tel:** 020 8725 2453  **Email:** pals@stgeorges.nhs.uk

**NHS Choices**
NHS Choices provides online information and guidance on all aspects of health and healthcare, to help you make decisions about your health.
**Web:** www.nhs.uk

**NHS 111**
You can call 111 when you need medical help fast but it’s not a 999 emergency. NHS 111 is available 24 hours a day, 365 days a year. Calls are free from landlines and mobile phones.
**Tel:** 111