

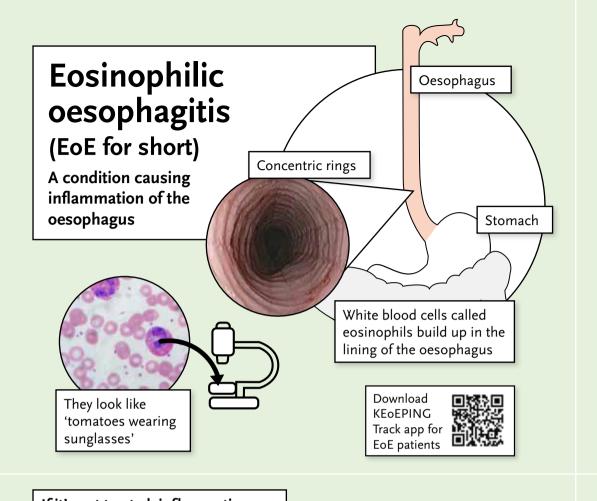
Introduction

This discussion guide is designed to help you discuss GI and liver conditions with your patients.

Receiving a diagnosis can be overwhelming for some patients, and too often there is little time to tell them everything they need to know. This tool was made to support both you and your patients in these situations.

For each topic, there is one page for your patient and one for you. The patient pages are illustrated to help patients visualise and absorb new information. On the opposite page, you'll find suggestions of relevant points you might find helpful to explain.

Of course, you are best placed to gauge the need for information and your patient's level of understanding. The end goal is always the same – to help patients feel informed about their condition and in control of their care.

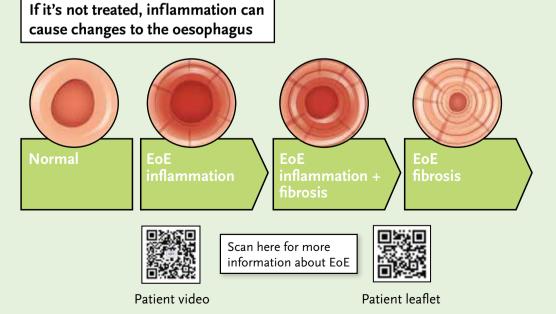


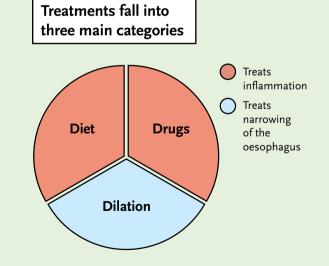


Nuts

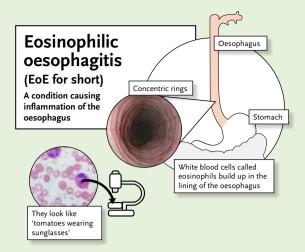
EoE can be triggered by

eating certain food allergens





Eggs



- Oesophagitis is inflammation of the lining of the oesophagus, the muscular tube that carries food from your mouth to your stomach¹
- Eosinophils are a type of white blood cell that helps defend your body from infection^{2,3}
- Normally eosinophils are present in very low levels in the oesophagus, but in EoE, they build up in the lining of the oesophagus and produce proteins that cause inflammation^{4.5}

EoE can be triggered by eating certain food allergens

- EoE is sometimes called 'asthma of the oesophagus'⁵
- We don't know exactly what causes EoE, but it seems like in some people it's triggered by eating certain foods or breathing in certain allergens in the air⁷
- EoE has been linked to other allergic conditions such as asthma, eczema, and food allergies, but the connection isn't fully understood^{3,5}





lilk

Wheat





Fish

Soy

Nuts



Eggs

If it's not treated, inflammation can cause changes to the oesophagus



- Inflammation leads to scarring, narrowing and the formation of fibrous tissue in the lining of the oesophagus, making it harder for it to stretch⁶
- This can cause difficulty swallowing, known as 'dysphagia' in medical terms, the most common symptom of EoE⁷
- EoE isn't considered to be life threatening, but it can impact on your eating habits, social plans and overall quality of life^{3,6}
- Some people find that spending more time chewing and drinking lots of water helps stop food getting stuck⁸

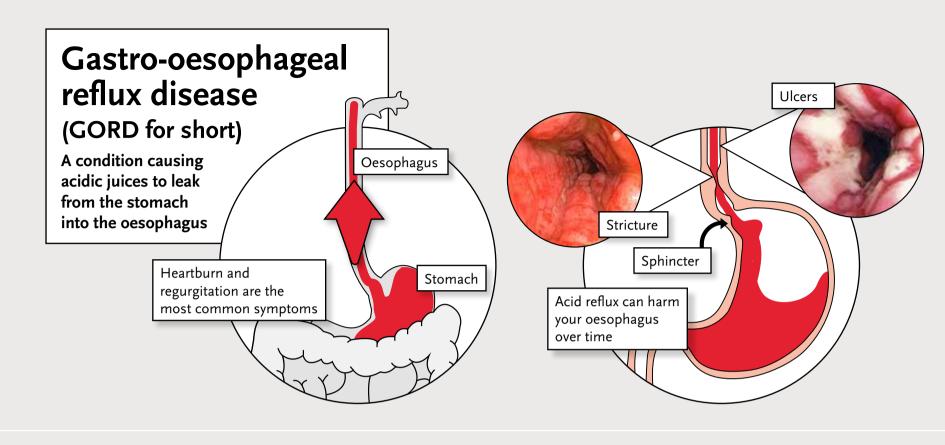
Treatments fall into three main categories



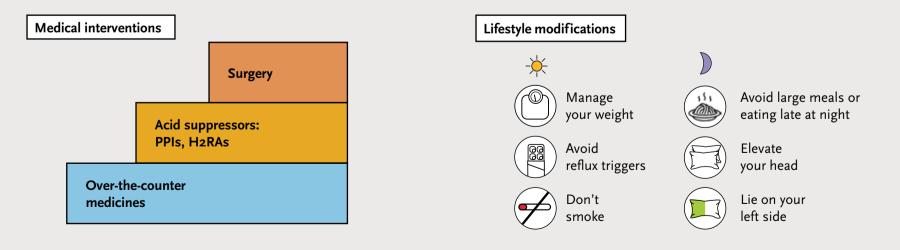
- Treats inflammation
- Treats narrowing of the oesophagus

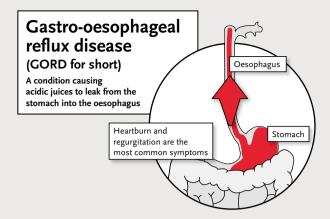
- Treatment has three main parts: diet, drugs and dilation⁷
- One way to reduce inflammation is to avoid trigger foods. To find out which foods are the problem, suspicious foods can be removed and slowly reintroduced^{6,7}
- Drugs can also help ease inflammation

 there is a steroid for EoE that slowly
 dissolves in your mouth to evenly coat
 your oesophagus⁹
- Some people experience narrowing of the oesophagus that can be treated with dilation to make swallowing easier⁷

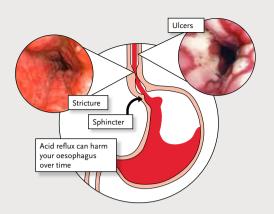


Our goal is to relieve your symptoms and heal your oesophagus with:



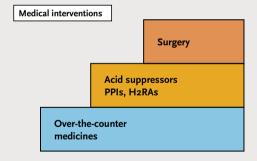


- GORD is one of the most common diseases affecting the gastrointestinal tract¹
- The main symptom is heartburn (when stomach acid leaks into the oesophagus after a meal) and regurgitation (when it travels up to the mouth)¹
- It's normal to have acid reflux once in a while, but the episodes are much more frequent and troublesome when you have GORD¹



- There's a circular bit of muscle called a lower oesophageal sphincter that closes off the stomach from the oesophagus¹
- In people with GORD, the lower oesophageal sphincter stops working properly and stomach acid flows backwards into the oesophagus¹⁻³
- We can treat your reflux to stop it from causing problems like ulcers (small sores), strictures (narrowing of the oesophagus) and Barrett's oesophagus (changes to the lining of your oesophagus)⁴

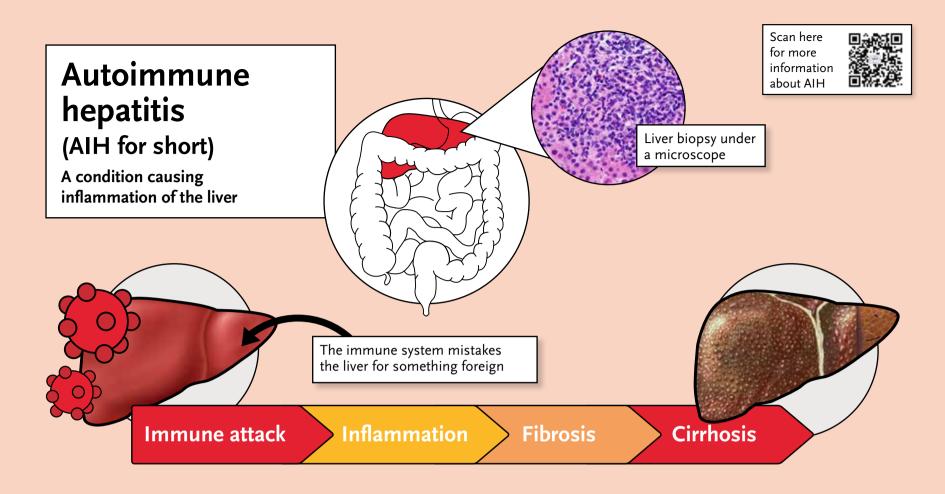
Our goal is to relieve your symptoms and heal your oesophagus with:



- You may have already tried over-the-counter drugs like antacids, and if they're working well you should keep taking them³
- Acid suppressors like proton pump inhibitors, or PPIs for short, are an effective treatment for a lot of people – they lower the amount of acid your stomach produces⁵
- If medicine isn't relieving your symptoms, we might consider surgery later on¹



- Managing your weight is one of the best ways to help your acid reflux^{3,6}
- Try avoiding acid reflux-triggering foods like coffee, chocolate, and acidic and fatty foods^{2,6}
- Avoiding smoking can also help⁶
- Having symptoms at night can make it really difficult to sleep
 - avoiding late-night meals, raising the head of your bed, and lying on your left side can help 67



We want to induce remission and maintain it long-term

Induction therapy



Steroids



There are other things you can do to help yourself







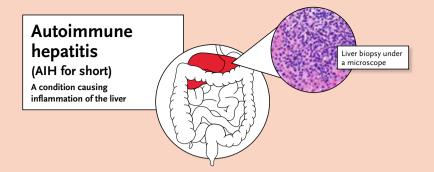
Keep active



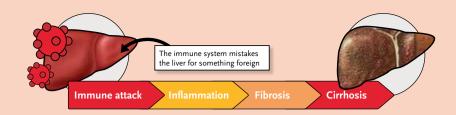
Eat well



Talk things through



- The liver is one of the largest organs in the body, located just under your rib cage on the right-hand side1
- Like a chemical processing factory, the liver performs over 500 functions including making proteins, removing toxins from your blood and secreting bile1,2



- Your body's immune system fights off infection from foreign pathogens – it normally doesn't harm healthy cells³
- In AIH, the immune system mistakes your liver as foreign and attacks it, leading to chronic inflammation and damage³
- If it goes untreated, the inflammation leads to a build-up of scar tissue (fibrosis) that eventually replaces healthy liver tissue (cirrhosis) and stops your liver from working normally^{3,4}

We want to induce remission and maintain it long-term

Induction therapy





- Our main goal is to stop the inflammation and get your AIH into remission by suppressing your immune system⁵
- Corticosteroids are the standard treatment for inducing remission (induction therapy)⁵
- As soon as you improve, you can start taking an immunosuppressant called azathioprine to keep you in remission (maintenance therapy)⁵
- If your liver is badly affected, you may be considered for a liver transplant5

There are other things you can do to help yourself









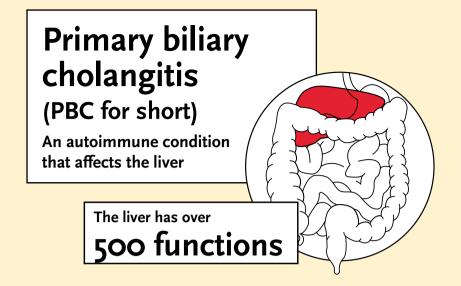
supplements

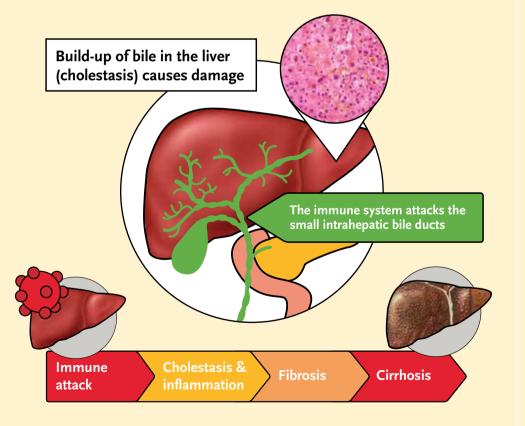
Keep active

Eat well

Talk things through

- Taking vitamin D and calcium supplements can help keep your bones strong while you're taking steroids6
- Weight-bearing exercise like walking is also great for your bone health⁶
- There are no specific diet recommendations for AIH besides eating a healthy, balanced diet with plenty of fruit and veg7
- Many people find it helpful to talk things through you can find lots of support through groups like AIH Support





Your treatment has two main goals:



Treating your condition



Managing your symptoms



Take UDCA everyday



Follow advice to relieve itching



Know how much you weigh



Keep active



Know your LFT results



Take vitamins



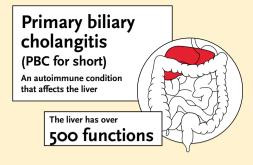
Use the PBC Foundation app



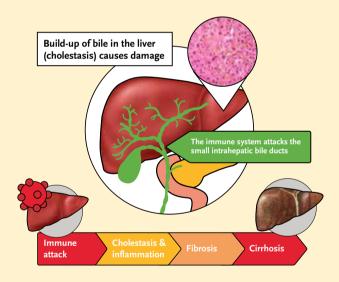
Talk things through

Download the UDCA App and check your dose





- The liver is one of the largest organs in the body, located just under your rib cage on the right-hand side¹
- Like a chemical processing factory, the liver performs over 500 functions including making proteins, removing toxins from your blood and secreting bile^{1,2}



- Bile is a digestive juice that flows from your liver and gallbladder into your gut to help you digest fats³
- In PBC, the immune system attacks the small intrahepatic bile ducts inside the liver, causing inflammation called cholangitis⁴
- Damage to these bile ducts stops bile from flowing normally out of the liver (cholestasis)^{4,5}
- Over time, the build-up of bile in the liver can lead to fibrosis, then cirrhosis^{4,5}

Your treatment has two main goals:



Take UDCA everyday



Know how much you weigh



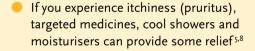
Know your LFT results

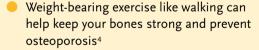


Use the PBC Foundation app



Managing your symptoms

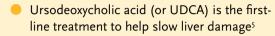


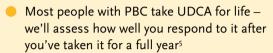


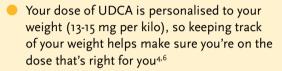
- People with PBC may have trouble absorbing fats, so taking supplements can help make sure you don't miss out on fat-soluble vitamins^{4.5}
- If you find yourself struggling with fatigue, you're not alone – try connecting with other people with PBC through an organisation like the PBC Foundation⁵



Treating your condition







- Regular blood tests called liver function tests (or LFTs) can tell us useful information about how you're doing⁷
- You can use the PBC Foundation app to keep track of your test results over time



Follow advice to relieve itching

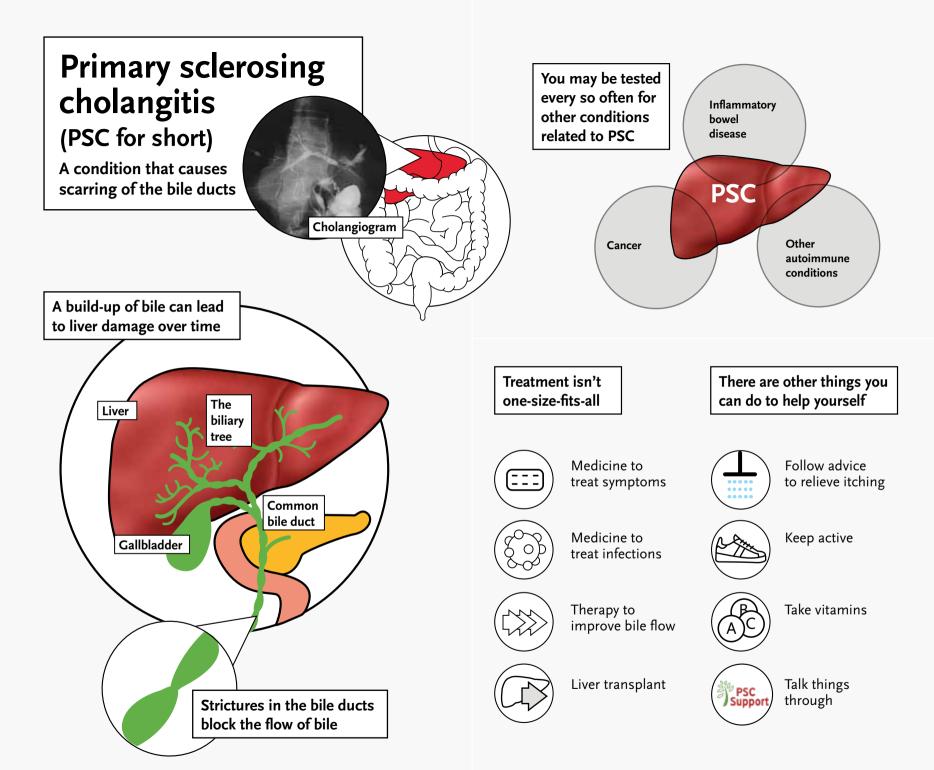
Keep active

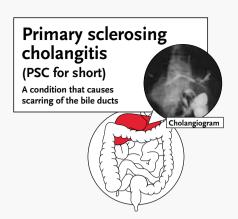


Take vitamins

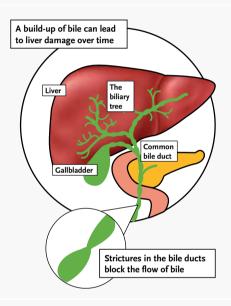


Talk things through

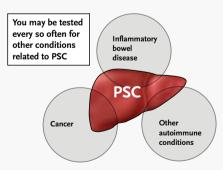




- The liver is one of the largest organs in the body, located just under your rib cage on the right-hand side¹
- Like a chemical processing factory, the liver performs over 500 functions including making proteins, removing toxins from your blood and secreting bile^{1,2}



- Bile is a digestive juice that flows from your liver and gallbladder into your gut to help you digest fats³
- In PSC, inflammation of the bile ducts both inside and outside the liver (cholangitis) leads to scarring (sclerosing) and narrow sections called strictures⁴⁻⁶
- These strictures block the flow of bile (cholestasis), leading to a build-up that can damage the liver and cause problems like fibrosis and cirrhosis⁶



- There's a close link between PSC and inflammatory bowel disease (IBD), so you'll be given a colonoscopy to check for it^{7,8}
- PSC may be caused by your immune system mistakenly attacking your body, so you may be tested for other autoimmune conditions elsewhere in your body^{9,10}
- People with PSC have a higher risk of getting some cancers, so we'll need to keep up with regular screening as part of your care^{8,9}

Treatment isn't one-size-fits-all



Medicine to treat symptoms



Therapy to improve bile flow



Medicine to treat infections



Liver transplant

- Despite decades of research, no medical therapies have been proven to work well for PSC⁴
- We have medicine to relieve symptoms like itchy skin⁹
- If you get an infection in your bile ducts (bacterial cholangitis) you'll need a course of antibiotics straight away⁹
- In some circumstances, you may need therapy to widen your bile ducts and improve bile flow using a drainage tube (stent) or balloon^{9,11}
- If your liver is badly affected, you may be considered for a liver transplant, but this decision is never taken lightly⁹

There are other things you can do to help yourself



Follow advice to relieve itching



Take vitamins



Keep active



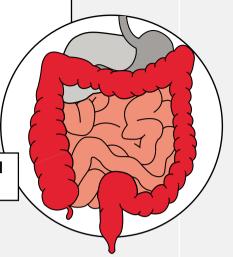
Talk things through

- If you experience itchiness (pruritus), targeted medicines, cool showers and moisturisers can provide some relief¹²
- Weight-bearing exercise like walking can help keep your bones strong and prevent osteoporosis⁸
- Having PSC makes it difficult for your body to absorb fat-soluble vitamins, so taking supplements can help you get all the nutrients you need⁵
- If you find yourself struggling with fatigue, you're not alone – try connecting with other people with PSC through the PSC support organisation⁵

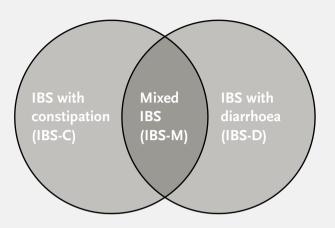
Irritable bowel syndrome (IBS for short)

A condition causing abdominal pain and altered bowel habits

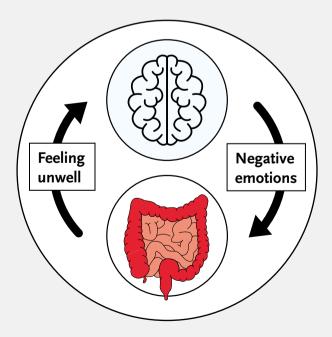
There are no clear structural changes to the gut



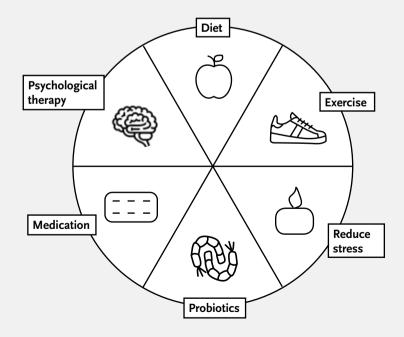
IBS can be divided into subtypes depending on your symptoms

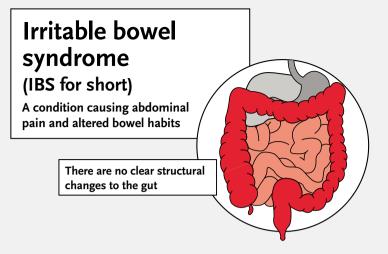


The relationship between the brain and gut may play a part in IBS



We can use multiple strategies to control your symptoms





- IBS is a functional bowel disorder that is common around the world
- It's a chronic but benign condition, so there's no increased risk of developing other, more severe diseases like colon cancer¹

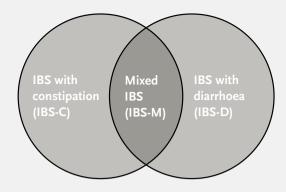
The relationship between the brain and gut may play a part in IBS

Feeling unwell

Negative emotions

- The brain and the gut communicate with each other via a two-way relationship known as the gut-brain axis²
- The brain can send signals about stress and emotions to your gut, and in turn, your gut can send signals that affect your mood and emotions²
- Changes to this relationship may play an important part in IBS3

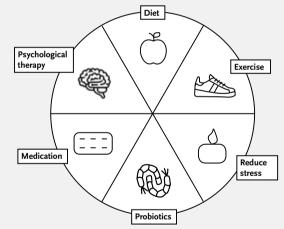
IBS can be divided into subtypes depending on your symptoms



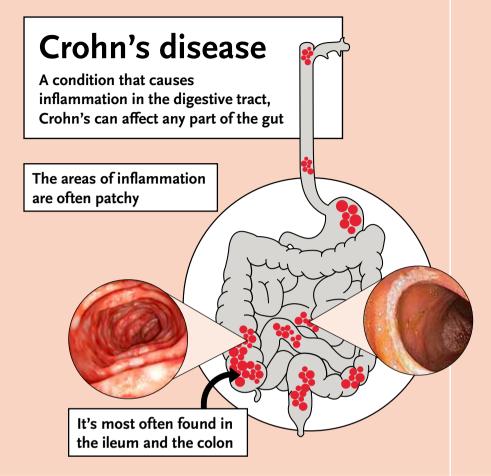
- The main symptoms of IBS vary from person to person and may change over time^{1,4}
- Some people mainly experience constipation (IBS-C), others mainly experience diarrhoea (IBS-D) and some alternate between diarrhoea and constipation (IBS-M)⁵
- We can choose different treatments to target your main symptoms

We can use multiple strategies to control your symptoms

 Eating regular, balanced meals, identifying your trigger foods, and modifying your fibre intake can all help⁶⁷



- Exercise can help both relieve bloating and gas and speed up bowel movements^{4,5}
- Stress is a common trigger of IBS symptoms things like meditation, yoga and counselling can help manage it^{5,7}
- There are a number of medicines that specifically target different symptoms^{5,7}
- Behavioural therapies can be really effective for improving symptoms in some people⁸



Sometimes other parts of the body are affected too

Scan here to find out more about IBD













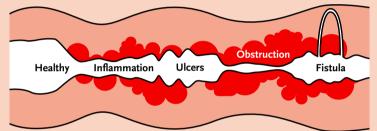
loints

Eyes

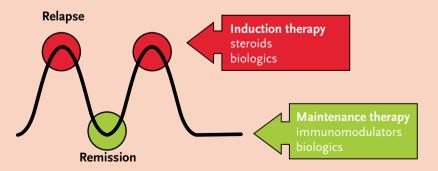
Kidneys

Bones

You may hear different terms used to describe what's happening in your gut



We want to induce remission and maintain it with the right treatment



There are other things you can do to help yourself



Eat small portions

Keep

active



Don't smoke

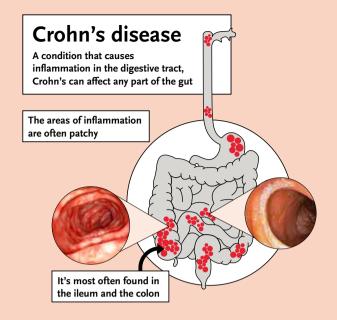




Take supplements

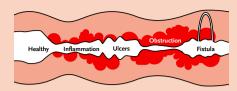






- Crohn's disease is a type of inflammatory bowel disease (IBD) that can affect any part of the digestive system from the mouth to the anus1
- It's different for everyone, but the inflammation is most often found in the ileum (the end of the small intestine) and the colon1
- The inflammation comes in patches with healthy sections in between²

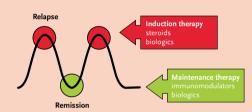
You may hear different terms used to describe what's happening in your gut



- Inflammation in Crohn's can cause a few different problems in your gut:4
- Small sores called ulcers can develop in the lining of your gut, including your mouth5

- Swelling of the gut wall can cause an obstruction5
- Some people may develop an abnormal passageway between organs called a fistula⁵
- Everyone's experience is different, but if you do have any of these problems there are a few different ways we can treat them

We want to induce remission and maintain it with the right treatment



 Crohn's alternates between relapses (when your symptoms flare-up) and times of remission (when you feel well)4

- Initially, our aim is to get you well using induction therapy (like steroids)5
- Then, we want to keep you well using maintenance therapy with treatments tailored to you (like immunomodulators or biologics)5
- Surgery is something we can consider later on if treatment isn't working well⁶

Sometimes other parts of the body are affected too











Kidneys



- Crohn's can also cause problems outside of the gut, like inflammation in the joints, skin and eyes. Very rarely, the bones, kidneys and other body parts can be affected³
- If you ever feel like something's wrong, let your doctor know as soon as you can

There are other things you can do to help yourself



Fat small portions





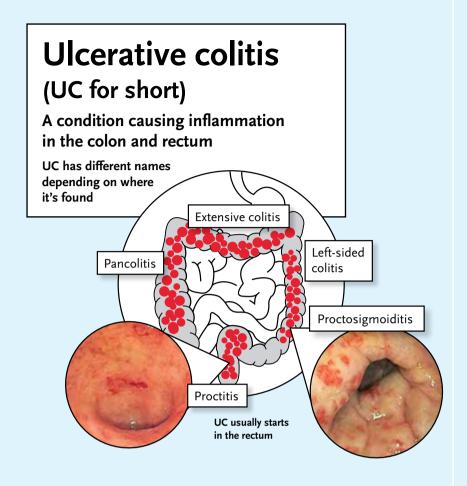


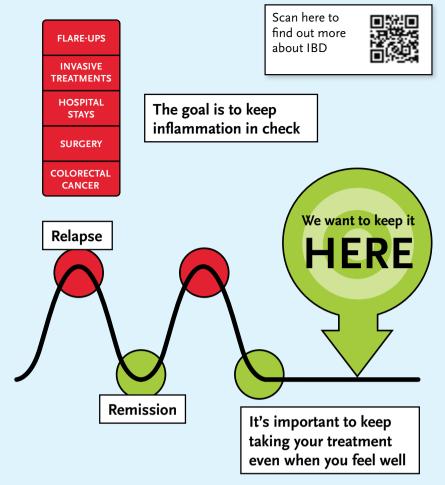




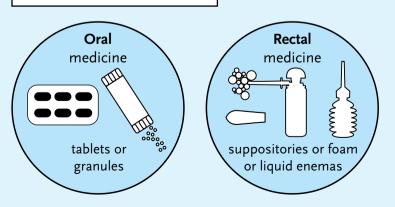


- Eat food and drink water frequently in small amounts throughout the day⁷
- Regular exercise can help reduce fatigue and inflammation in people with IBD8
- Quitting smoking can be just as effective as immunotherapy for treating Crohn's4
- Calcium and vitamin D supplements can help keep your bones strong4
- It's a good idea to talk things through - you can find lots of support through Crohn's & Colitis UK





How we treat it depends on where the inflammation is



There are other things you can do to help yourself



Eat small portions



Take supplements



Drink lots of water



Talk things through

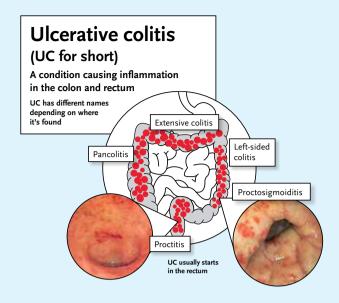


you•••track app



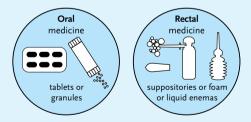
Download the you•••track app to track your UC symptoms



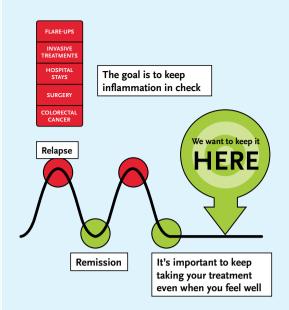


- UC is a type of inflammatory bowel disease (IBD) that affects the colon and rectum
- It causes your colon to become inflamed and sometimes small sores called ulcers may form1,2
- You may hear it called different names depending on where the inflammation is

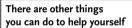
How we treat it depends on where the inflammation is



- Treatment comes in a few different forms to match your needs
- You can take tablets or granules with a special coating that dissolves once they get to the colon2
- Rectal options like suppositories, foams and enemas are also good for getting medicine to where it's needed²



- Inflammation in UC goes up and down over time, with periods of remission when you feel well, and relapses when you get symptoms²
- We want to get your inflammation into remission and keep it there²
- Even when you feel well, you still need to take your medicine so that you don't have another flare-up or any other unpleasant complications3





portions



of water



active



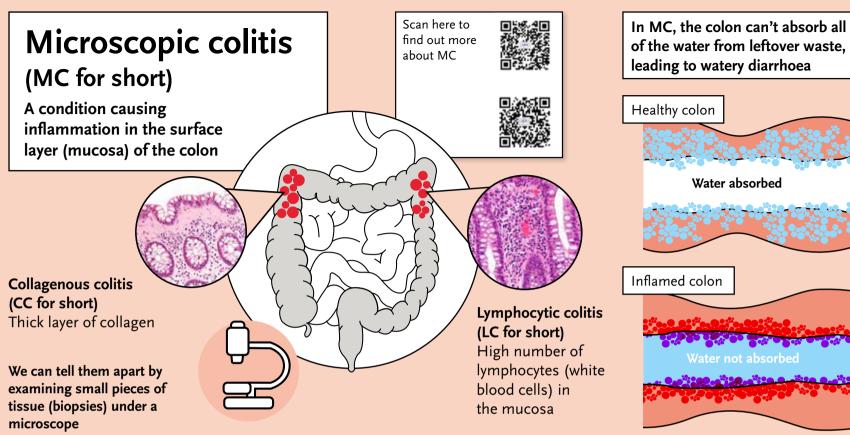




You can track how active your UC is with the you•••track app

you•••track app

- Eat and drink in small amounts frequently throughout the day4
- Regular exercise can help reduce fatigue and inflammation in people with IBD5
- Taking supplements (like iron or vitamin D) can help you make sure you're getting enough nutrients4
- It's a good idea to talk things through you can find lots of support through Crohn's & Colitis UK









Triggers

Medicines like: NSAIDs, PPIs Foods like: dairy, gluten, sweeteners



Treatments

Anti-diarrhoeals Bile salt binders Topical steroids (e.g. budesonide) There are other things you can do to help yourself

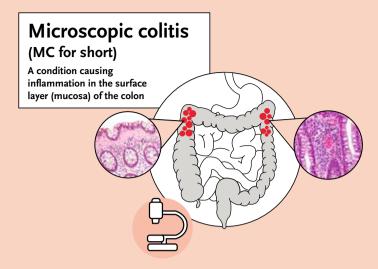




Keep active

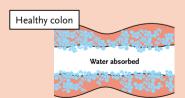


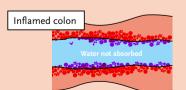
Talk things through



- MC is a type of inflammatory bowel disease with two main types:
 CC and LC¹
- In CC, there's a build-up of collagen in the lining of your gut (collagen is a threadlike protein that gives structure to your skin, bones and other body parts)^{2,3}
- In LC, there's a high number of lymphocytes in the lining of your gut (lymphocytes are a type of white blood cell that protects your body against disease)²
- We can tell them apart by looking at biopsies (small pieces of tissue taken during an endoscopy) under a microscope in the lab¹

In MC, the colon can't absorb all of the water from leftover waste, leading to watery diarrhoea





- Watery diarrhoea is the main symptom of MC, but we don't fully understand what causes it⁴
- The colon's main role is to absorb leftover water from the food you eat⁵
- When the colon is inflamed, it becomes less efficient at absorbing liquid from the waste, leading to watery stools⁶





Medicines like: NSAIDs, PPIs Foods like: dairy, gluten, sweeteners



Treatments

Anti-diarrhoeals Bile salt binders Topical steroids (e.g. budesonide)

- Inflammation can go up and down, with periods of remission (when you feel well) and relapses (when you get symptoms)
- The first step to getting you into remission is taking away anything that might be triggering your MC⁴
 - NSAIDs (like aspirin and ibuprofen), PPIs (like omeprazole) and foods like dairy and sweeteners are common triggers⁴
- Most people will also need treatment that's tailored to their condition, like anti-diarrhoeals to control symptoms or steroids (like budesonide) to suppress the inflammation in your gut⁷

There are other things you can do to help yourself





Don't smoke Drink lots of water

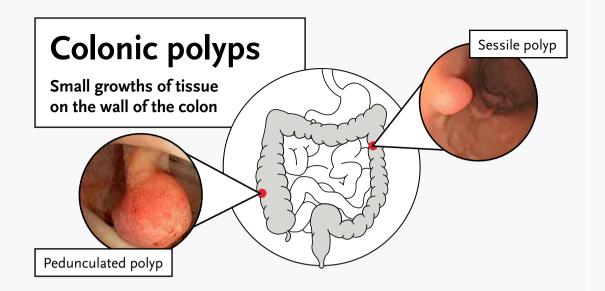




Keep active

Talk things through

- Smoking can make it harder to get MC into remission, so it's best to avoid it⁷
- Regular exercise can help reduce fatigue and inflammation in people with IBD⁸
- Drink plenty of liquids to avoid dehydration when you have diarrhoea^{3,9}
- It's a good idea to talk things through
 you can find lots of support through
 Crohn's & Colitis UK



There are other things you can do to prevent polyps









Eat more fibre



Manage your weight





Don't smoke



Limit red and processed meat

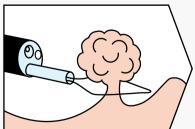


Don't drink too much

Most polyps can be removed during a colonoscopy

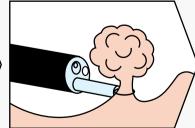
Getting polyps removed is a good way to prevent cancer

Years

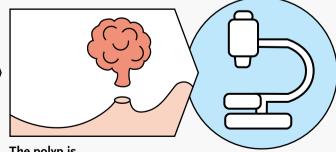


A colonoscope is used to find the polyp

Benign polyp

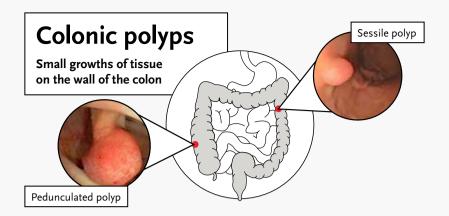


A wire snare cuts through the polyp



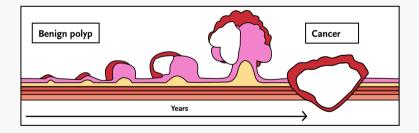
The polyp is sent to the lab

Cancer



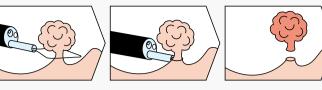
- The wall of your colon is made of cells that are constantly being renewed – sometimes extra cells grow when they're not needed and form bits of tissue called polyps^{1,2}
- Some polyps grow on stalks like mushrooms (pedunculated polyps) while others look like bumps (sessile polyps)^{3,4}
- Most of the time polyps are harmless, but if they're left untreated there's a chance some could turn cancerous over time

Getting polyps removed is a good way to prevent cancer



- Colorectal cancer is one of the most common forms of cancer, which is why it's crucial to remove any polyps as soon as we can⁵
- Once all polyps have been removed, your risk of colon cancer is much lower³

Most polyps can be removed during a colonoscopy



A colonoscope is used to find the polyp

A wire snare cuts through the polyp

The polyp is sent to the lab

- The most common treatment is physically removing the polyp (polypectomy) during a colonoscopy⁶
- There are a few different techniques, but most polyps can be removed using an electric-charged wire loop that cuts through (snares) or burns off (cauterises) the polyp¹
- Rarely, when a polyp is too tricky to remove in this way, other techniques may be needed⁶
- After it's removed, the polyp is sent to a lab for testing to see if it's cancerous or benign³

There are other things you can do to prevent polyps



- After a polypectomy, you should come in every few years for a colonoscopy – more often if colorectal cancer has affected anyone in your family¹
- Eat a balanced diet with lots of fruit, vegetables and whole grains⁷
- Maintaining a healthy weight can help avoid polyps forming in the future⁴
- Limit fatty foods, red and processed meat and alcohol, and avoid smoking to lower your chances of getting polyps in the future^{1,7}

Intended for patients who have been prescribed budesonide

Budesonide

A topical corticosteroid that reduces inflammation directly in the gut and liver

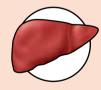
Cortisol is a hormone made naturally in your adrenal glands

Glucocorticosteroids are drugs made to resemble cortisol

They're different from the anabolic steroids bodybuilders take

Budesonide fights inflammation locally, right where it's needed in your gut or liver



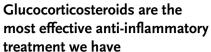


When you take budesonide...

It's absorbed from your digestive system

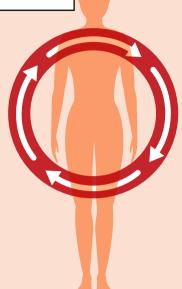
Then transported to the liver where it's mostly broken down

Only a small amount travels around your bloodstream, so there's a low risk of side effects

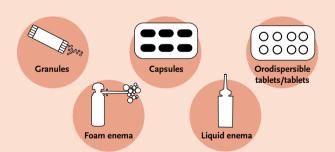


They can interact with most of the cells in your body

This means that they can cause side effects if they get to places where they're not needed



Budesonide comes in different formulations to suit your needs





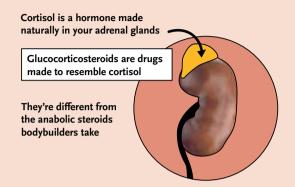
Never suddenly stop taking your treatment without talking to your doctor first



We'll taper your dose slowly to help your body adjust

Budesonide

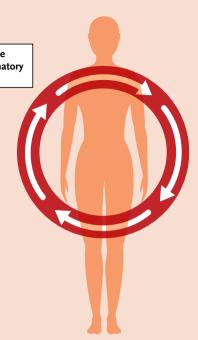
A topical corticosteroid that reduces inflammation directly in the gut and liver



- Synthetic glucocorticosteroids are a man-made version of hormones that are naturally made by your body in times of stress¹
- Don't worry even though they're called steroids for short, they're not the same as anabolic steroids that bodybuilders take to build muscle
- They work by reducing inflammation and suppressing your immune system¹

Glucocorticosteroids are the most effective anti-inflammatory treatment we have

- Glucocorticosteroids are actually the most effective antiinflammatory treatment we have, so they're used to treat lots of different inflammatory conditions^{2,3}
- They can interact with most of the cells in your body³
- So while they work really well, they can also cause side effects if they get to places where they're not needed³



Budesonide fights inflammation locally, right where it's needed in your gut or liver



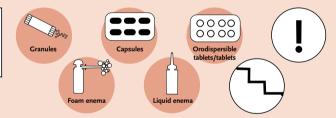


Then transported to

Only a small amount travels around your bloodstream, so there's a low risk of side effects

- When you take budesonide...
- It's absorbed from your digestive system
 - Then transported to the liver where it's mostly broken down
- Budesonide only starts to work once it gets to the target location in the gut or liver⁴
- This way, budesonide can reduce inflammation locally, right where it's needed most⁴
- After it's done its job fighting inflammation in the gut and liver, budesonide is mostly broken down by your liver⁴
- This way, less steroid gets to parts of the body where it's not needed and causes unwanted side effects⁵

Budesonide comes in different formulations to suit your needs

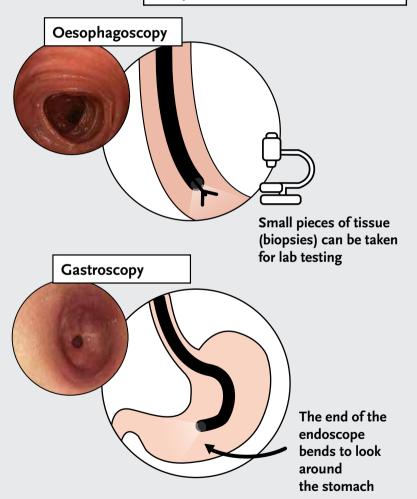


- Budesonide comes in granules, capsules, tablets and rectal foam and liquid enemas⁴
- Each formulation is designed to be effectively absorbed right where it is needed⁴
- Even if you start feeling better, it's really important you don't suddenly stop taking your budesonide
- We'll make a plan to taper it off slowly⁶

Endoscopy

A procedure used to look inside the digestive tract

Upper endoscopy is used to examine the oesophagus, stomach and the first part of the small intestine



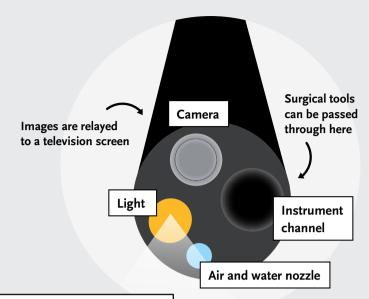
Scan here to learn more about endoscopies such as...

Having a colonoscopy

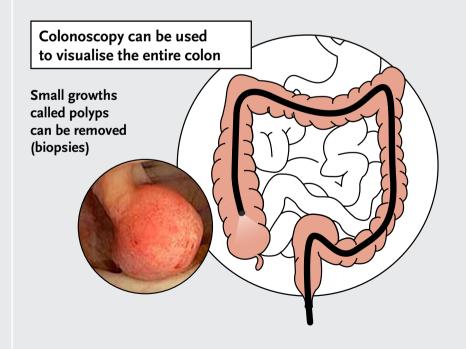


Having a gastroscopy





Endoscopes are well-equipped to take high-definition images

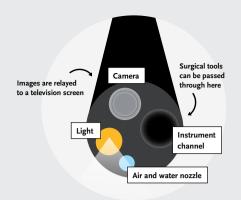


Endoscopy

A procedure used to look inside the digestive tract

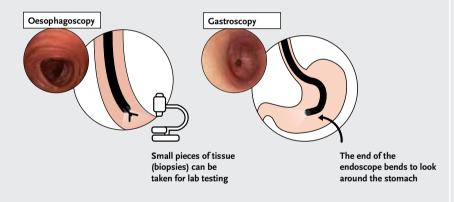
Upper endoscopy is used to examine the oesophagus, stomach and the first part of the small intestine

- Endoscopies are used to take a close look inside your digestive tract to find out what's causing your symptoms^{1,2}
- They can be used to rule out or confirm a diagnosis and even perform minor treatments¹

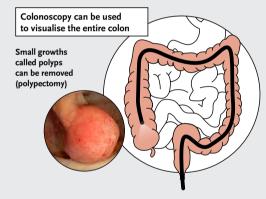


Endoscopes are well-equipped to take high-definition images

- Put simply, endoscopes are just flexible tubes with a light and camera at one end⁵
- Tiny instruments can be passed through the endoscope to perform different procedures, like take small samples of tissue (biopsies) or clear blockages⁴
- Proper preparation is the key to a safe, successful endoscopy – make sure you stick to the plan your endoscopist has given you¹



- Oeosophagoscopy and gastroscopy are standard procedures used to investigate problems in the upper part of your digestive tract (sometimes the procedure is called an oesophago-gastroduodenoscopy or OGD)³
- A long, flexible telescope called an endoscope is passed down slowly through your nose or mouth⁴
- Using live video from the camera, your doctor can examine your oesophagus and stomach lining to look for redness or inflammation⁵
- Sometimes, small samples of tissue (biopsies) are taken from a few different places to be tested in the lab³
- This shouldn't be painful, but you might feel uncomfortable at times⁶



- A colonoscopy is used to look inside your large intestine (or colon) to figure out what's causing your symptoms⁷
- The colonoscope is inserted into your bottom while you're locally anaesthetised and transmits live video images to a television screen⁷
- Sometimes, small samples of tissue (biopsies) are taken from a few different places to be tested in the lab. This isn't painful⁷
- Many people have small, growths called polyps in their colon that are usually harmless, but they can be removed during the colonoscopy for further testing⁷

References

Eosinophic oesophagitis (EoE)

- Kuo B, Urma D. Esophagus anatomy and development. Available at: www.nature.com/gimo/contents/pt1/full/gimo6.html
- 2. Straumann A, Katzka DA. Gastroenterology 2018; 154(2): 346-59.
- 3. Peiris CD, Tarbox JA. JAMA 2019; 321(14): 1418.
- 4. Collins MH. Gastroenterol Clin North Am 2014; 43(2): 257-68.
- 5. Ahmed M. World J Gastrointest Pharmacol Ther 2016; 7(2): 207-13.
- 5. Lucendo AJ et al. United Eur Gastroenterol J 2017; 5(3): 335-58.
- 7. Dellon ES, Liacouras CA. Gastroenterology 2014; 147(6): 1238-54.
- 8. Nguyen N et al. Gastroenterol Hepatol 2015; 11(10): 670-4.
- 9. Dellon ES et al. Gastroenterology 2012; 143(2): 321-4.

Gastro-oesophageal reflux disease (GORD)

- 1. Bredenoord AJ et al. Lancet 2013; 381(9881): 1933-42.
- 2. Sharma N, Ho KY. Inflamm Intest Dis 2016; 1: 96-9.
- 3. Keung C, Hebbard G. Aust Prescr 2016; 39(1): 6-10.
- Kellerman R, Kintanar T. Prim Care 2017; 44(4): 561-73.
- 5. Sigterman KE et al. Cochrane Database Syst Rev 2013; 5: CD002095.
- 6. Kaltenbach T et al. Arch Intern Med 2006; 166(9): 965-71.
- 7. Oh JH. Ann N Y Acad Sci 2016; 1380(1): 195-203.

Autoimmune hepatitis (AIH)

- 1. Baggaley A (ed.) Human body. London: Dorling Kindersley Limited; 2001.
- Johns Hopkins Medicines. Liver: Anatomy and Functions. Johns Hopkins University.
- National Institute of Diabetes and Digestive and Kidney Diseases. Autoimmune hepatitis. Available at: https://www.niddk.nih.gov/
- 4. Bataller R, Brenner DA. J Clin Invest 2005; 115(2): 209-18.
- 5. Mieli-Vergani G et al. Nat Rev Dis Primers 2018; 4: 18017.
- 6. Czaja AJ. Gut Liver 2016; 10(2): 177-203.
- 7. British Liver Trust. Autoimmune Hepatitis, 2017.

Primary biliary cholangitis (PBC)

- 1. Baggaley A (ed.) Human body. London: Dorling Kindersley Limited; 2001.
- 2. Johns Hopkins Medicines. Liver: Anatomy and Functions. Johns Hopkins
- National Institute of Diabetes and Digestive and Kidney Diseases. Your Digestive System & How it Works, 2017. Available at: https://www.niddk.nih.gov/
- 4. Hirschfield GM et al. Gut 2018; 67(9): 1568-94.
- 5. EASL. J Hepatol 2017; 67(1): 145-72.
- 6. Carey EJ et al. Lancet 2015; 386(10003): 1565-75.
- 7. Caldwell H. Br J Primary Care Nurs 2012; 9(Suppl.): 26-9.
- 8. Carrion AF et al. Clin Liver Dis 2018; 22(3): 517-32.

Primary sclerosing cholangitis (PSC)

- 1. Baggaley A (ed.) Human body. London: Dorling Kindersley Limited; 2001.
- 2. Johns Hopkins Medicines. Liver: Anatomy and Functions. Johns Hopkins University.
- National Institute of Diabetes and Digestive and Kidney Diseases. Your Digestive System & How it Works, 2017. Available at: https://www.niddk.nih.gov/
- 4. Lazaridis KN, LaRusso NF. N Engl J Med 2016; 375(12): 1161-70.
- European Association for the Study of the Liver. J Hepatol 2009; 51(2): 237-67.
- National Institutes of Health. Primary sclerosing cholangitis, 2019.
 Available at: https://ghr.nlm.nih.gov
- Beery RM et al. J Clin Transl Hepatol 2014; 2(4): 266-84.
- 8. Hirschfield GM et al. Lancet 2013; 382(9904): 1587-99.
- 9. Karlsen TH et al. J Hepatol 2017; 67(6): 1298-323.
- 10. Goode EC, Rushbrook SM. Ther Adv Chronic Dis 2016; 7(1): 68-85.
- 11. Johns Hopkins Medicines. Primary Sclerosing Cholangitis: Introduction. Johns Hopkins University.
- 12. Düll MM, Kremer AE. Dermatol Clin 2018; 36(3): 293-300.

Irritable bowel syndrome (IBS)

- 1. Simrén M et al. Lancet Gastroenterol Hepatol 2017; 2(2): 112-22.
- 2. Al Omran Y, Aziz Q. Adv Exp Med Biol 2014; 817: 135-53.
- 3. Weaver KR et al. Am | Nurs 2017; 117(6): 48-55.
- 4. Chey WD et al. JAMA 2015; 313(9): 949-58.
- 5. Sultan S, Malhotra A. Ann Intern Med 2017; 166(11): ITC81-96.
- 6. McKenzie YA et al. J Hum Nutr Diet 2016; 29(5): 549-75.
- NHS Inform. Irritable bowel syndrome (IBS), 2019.
 Available at: https://www.nhsinform.scot/
- 8. Linedale EC, Andrews JM. Med J Aust 2017; 207(7): 309-15.

Crohn's disease

- 1. Johns Hopkins Medicines. Crohn's disease. Johns Hopkins University.
- 2. Gomollón F et al. J Crohns Colitis 2017; 11(1): 3-25.
- 3. Vavricka SR et al. Inflamm Bowel Dis 2015; 21(8): 1982-92.
- 4. Kalla R et al. BMJ 2014; 349: g6670.
- 5. NICE Clinical Knowledge Summaries. Crohn's disease, September 2017.
- 6. Frolkis AD et al. Gastroenterology 2013; 145(5): 996-1006.
- 7. Brown AC et al. Expert Rev Gastroenterol Hepatol 2011; 5(3): 411-25.
- 8. Bilski | et al. Pharmacol Rep 2016; 68(4): 827-36.

Ulcerative colitis (UC)

- 1. Singh S et al. Gastroenterology 2019; 156(3): 769-808.e29.
- Osterman MT, Lichtenstein GR. 'Ulcerative colitis' In: Gastrointestinal and Liver Disease. W B Saunders Co / Elsevier Science Health Science; 2015.
- 3. Taylor K, Irving P. Nat Rev Gastroenterol Hepatol 2011; 8: 646-56.
- 4. Brown AC et al. Expert Rev Gastroenterol Hepatol 2011; 5(3): 411-25.
- 5. Bilski J et al. Pharmacol Rep 2016; 68(4): 827-36.

Microscopic colitis (MC)

- 1. Miehlke S et al. Lancet Gastroenterol Hepatol 2019; 4: 305-14.
- 2. Münch A et al. J Crohns Colitis 2012; 6(9): 932-45.
- National Institute of Diabetes and Digestive and Kidney Diseases. Microscopic Colitis. Available at: https://www.niddk.nih.gov/
- 4. Pardi DS. Am | Gastroenterol 2017; 112(1): 78-85.
- Azzouz LL, Sharma S. Physiology, Large Intestine. Treasure Island, Florida: StatPearls Publishing, 2018.
- Johns Hopkins Medicines. Collagenous & Lymphocytic Colitis: Introduction. Johns Hopkins University.
- 7. Boland K, Nguyen GC. Gastroenterol Hepatol 2017; 13(11): 671-7.
- 8. Bilski J et al. Pharmacol Rep 2016; 68(4): 827-36.
- Brown AC et al. Expert Rev Gastroenterol Hepatol 2011; 5(3): 411-25.

Colonic polyps

- Meseeha M, Attia M. Colon Polyps. StatPearls. Treasure Island, Florida: StatPearls Publishing, 2019.
- NHS. Advanced polypectomy for large polyps. Available at: https://www.hey.nhs.uk
- Goldberg P. Colorectal Polyps. Open Access Textbook of General Surgery, The University of Cape Town.
- Harvard Medical School. Colon Polyps, 2019. Available at: https://www.health.harvard.edu/
- 5. Brenner H et al. Lancet 2014; 383(9927): 1490-502.
- 6. Angarita FA et al. Int | Colorectal Dis 2018; 33(2): 115-29.
- National Institute of Diabetes and Digestive and Kidney Diseases. Eating, Diet, & Nutrition for Colon Polyps. Available at: https://www.niddk.nih.gov

Budesonide

- NHS Inform. Corticosteroids, 2019. Available at: https://www.nhsinform.scot/
- Adcock IM et al. In: Principles of Immunotherapy. Basel: Springer AG, 2011; 557-71.
- 3. He Y et al. Cell Res 2014; 24(6): 713-26.
- 4. O'Donnell S, O'Morain CA. Ther Adv Chronic Dis 2010; 1(4): 177-86.
- 5. Vavricka SR et al. Drugs 2014; 74(3): 313-24.
- 6. Miehlke S et al. J Gastroenterol Hepatol 2018; doi: 10.1111/jgh.14151. [Epub ahead of print]

Endoscopy

- 1. Herman A. Nursing Made Incredibly Easy 2010; 8(3): 5-10.
- Nabh A et al. 'Diagnostic endoscopy' In: Endoscopy of GI Tract IntechOpen.
- 3. Beg S et al. Gut 2017; 66(11): 1886-99.
- Kohli DR, Baillie J. 'How Endoscopes Work' In: Clinical Gastrointestinal Endoscopy (Third Edition). Elsevier Inc; 2019.
- 5. NHS Health A-Z. Endoscopy. Available at: www.nhs.uk
- 6. NHS Health A-Z. Gastroscopy. Available at: www.nhs.uk
- National Institute of Diabetes and Digestive and Kidney Diseases. Colonoscopy. Available at: https://www.niddk.nih.gov/

Abbreviations

AIH: autoimmune hepatitis

CC: collagenous colitis

EoE: eosinophilic oesophagitis

GI: gastrointestinal

GORD: gastro-oesophageal reflux disease

H2RA: histamine-2 receptor antagonist

IBD: inflammatory bowel disease

IBS: irritable bowel syndrome

LC: lymphocytic colitis LFT: liver function test

MC: microscopic colitis

NSAID: non-steroidal anti-inflammatory drug

OGD: oesophago-gastro-duodenoscopy

PBC: primary biliary cholangitis

PPI: proton pump inhibitor

PSC: primary sclerosing cholangitis

UC: ulcerative colitis
UDCA: ursodeoxycholic acid

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