CPPE
CENTRE FOR PHARMACY POSTGRADUATE EDUCATION

Condition: Inflammatory bowel disease

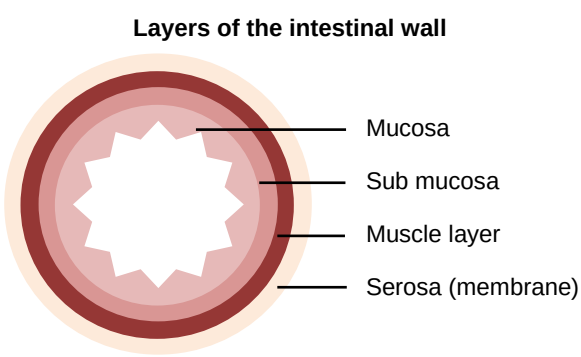
Contents

Definition

Inflammatory bowel disease (IBD) is a chronic, relapsing-remitting, non-infectious inflammatory disease of the gastrointestinal (GI) tract. Relapsing-remitting means that symptoms can flare up (relapse) and this can be followed by a period with little or no symptoms (remission). The term IBD is used to describe two conditions, Crohn's disease and ulcerative colitis (UC).[1,2]

In Crohn's disease there are discrete areas of inflammation and ulceration throughout the entire GI tract. Skip lesions are typically found in Crohn's disease, this is where normal sections of bowel are interspersed with areas of Crohn's disease. Crohn's disease most commonly occurs in the terminal ileum – the end of the ilium before the cecum, known as ileitis (45 percent of people), colon, known as Crohn's colitis (32 percent) and ileum and colon, known as ileocolitis (19 percent) and occurs in the upper gastrointestinal tract in four percent of cases. In Crohn's the full thickness of the intestinal wall is inflamed (mucosa through to the serosa).

Just over a third (35 percent) of people with Crohn's will experience symptoms in areas other than the GI tract, this may include iritis (inflammation of the iris), arthritis, erythema nodosum (swollen fat under the skin), and pyoderma gangrenosum (painful skin ulcers).[1]

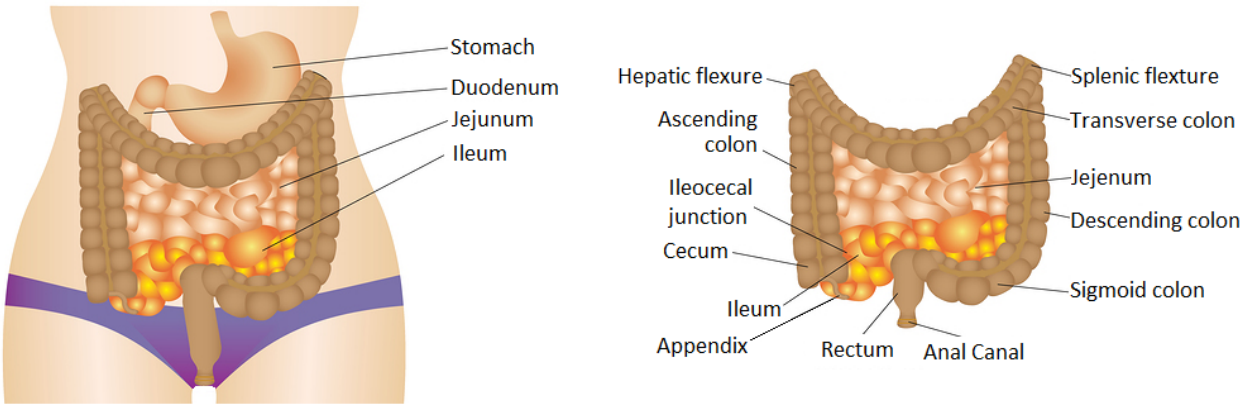


In UC there is inflammation and ulceration of the rectum and a varying length of the colon.

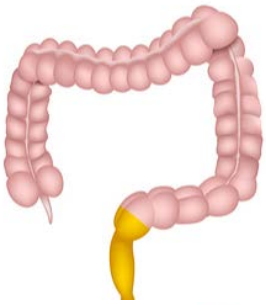
NHS
Health Education England
MANCHESTER 1824
The University of Manchester

In UC it is only the mucosa (mucosal layer) of the GI tract that is affected rather than the full thickness. UC is also associated with inflammatory arthritis, uveitis, erythema nodosum, and pyoderma gangrenosum.[2]

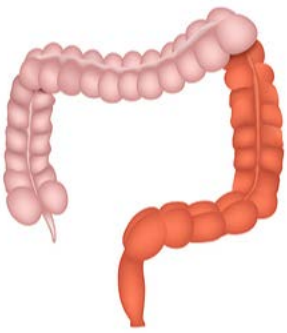
The below diagram shows the human GI tract for reference.



There are three main classifications of UC which are outlined below.[2]



Ulcerative proctitis, where inflammation is only found in the rectum and does not extend proximally (towards the proximal colon) to the sigmoid colon.



Left-sided colitis, or distal colitis, where inflammation does not extend proximally beyond the splenic flexure.

Pancolitis where inflammation extends beyond the splenic flexure to the entire colon.

Other types of UC include proctosigmoiditis, which affects the rectum and sigmoid colon and extensive colitis is used to describe inflammation, which extends proximally to the hepatic flexure.

Crohn's disease and UC are thought to be discrete conditions, although this is not confirmed. If it cannot be determined whether someone has either UC or Crohn's they are said to have 'indeterminate' colitis.[2]

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Prevalence and incidence

Ulcerative colitis is the most common form of IBD with incidence rates of 10 per 100,000 people per year in the UK and a prevalence of around 240 per 100,000 people (about 146,000 people in the UK).

Incidence peaks between 15 and 25 years and there is a second smaller peak between 55 and 65 years.[3] The incident rates are the same for men and women.[4]

The exact prevalence and incidence rates of Crohn's disease are unknown.[5] Crohn's and Colitis UK states that it is estimated that it affects 115,000 people in the UK and that it is slightly more common in women than men.[6]

As incidence peaks in those age 15 to 25, many people will be diagnosed while under the care of child services and need to make the transition to adult services as they grow.

The following Crohn's and Colitis UK video explores this process.

www.youtube.com/watch?v=Bzy-qnUHu9U

Signs and symptoms

The signs and symptoms of both Crohn's and UC include:

- unexplained persistent diarrhoea (more than four to six weeks), including nocturnal diarrhoea (this can lead to dehydration)
- tenesmus (feeling of the need to evacuate the bowels, but with little or no stool passed)
- blood or mucus in the stool
- abdominal pain and cramping, often before passing a stool
- general fatigue and malaise and in severe cases, fever
- weight loss and/or loss of appetite

- anaemia
- recurrent mouth ulcers.[7,8,9]

To understand more about how it feels to be fatigued in IBD watch the following Crohn's and Colitis UK video *Managing Fatigue in IBD*.

www.youtube.com/watch?v=iPcIxfKLrDc

Crohn's disease may also present with mouth ulcers, perianal tags, fistulas, or abscesses[10] and finger clubbing may be present, as represented in the image below.

For more information about finger clubbing access the following *British Medical Journal* best practice document: BMJ. Best Practice. *Assessment of clubbing*
https://bestpractice.bmj.com/topics/en-gb/623

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Causes/risk factors

Despite extensive research the causes of both Crohn's disease and UC are not fully understood. It is thought that both diseases are immune-mediated conditions (conditions which are a result of an abnormal action of the immune system) triggered by environmental factors in people who have a genetic susceptibility.[11] It is also believed that enteric flora (gut bacteria) may play a role.[12]

The risk factors of both conditions are well documented and differ slightly, this is summarised in the table below.

Risk factor	Crohn's disease	Ulcerative colitis
Family history	Siblings of people with Crohn's disease are 17 to 35 times more likely to develop the disease than those in the general population.[13] Thirty six percent of people who have two parents with Crohn's disease are likely to develop the disease.[15]	First-degree relatives of people with UC have a 10 to 15 fold risk of developing the disease meaning that the life time risk of UC for a first degree relative is around two percent.[14]
Smoking	The risk of Crohn's disease is increased in smokers and it is thought that smokers have a higher risk of disease relapse and need for surgical	The risk of UC is decreased in smokers; however, ex-smokers have an approximately 70 percent greater risk of developing UC than people who

	resection (removal of part of the GI tract).[11]	have never smoked. In this group the disease is often more extensive and less responsive to treatment.[16]
Medicines	It has been reported that there is a link between the use of oral contraceptive agents and an increased risk of developing IBD, and in particular Crohn's disease. The Faculty of Sexual and Reproductive Healthcare (FSRH) states that causal association between combined oral contraceptive use and the onset of ulcerative colitis has not been confirmed. Nonsteroidal anti-inflammatory drugs (NSAIDs) may increase the risk of relapse or exacerbation of IBD, but the absolute risk is low.[11]	

For Crohn's disease infectious gastroenteritis and appendectomy (removal of the appendix) have also been found to be risk factors, with risk being highest soon after the infection or surgery.[11]

Pathophysiology (mechanism of disease)

The exact pathophysiology of IBD is still unknown.

CPPE hosts a learning programme by the Northern Ireland Centre for Pharmacy Learning and Development (NICPLD) *Lower GI: inflammatory bowel disease* e-learning, **www.cppe.ac.uk/programmes/l/inflamm-e-01/** which provides information regarding the pathophysiology, common symptoms and potential complications of inflammatory bowel disease (IBD).

The following articles offer an insight into the current theories to explain the complex interaction between the genetic, environmental or microbial factors and the immune responses that occur in IBD:

Yi-Zhen Zhang and Yong-Yu Li. Inflammatory bowel disease: Pathogenesis. *World Journal of Gastroenterology*. 2014 Jan 7; 20(1): 91–99. **www.smw.ch/index.php/smw/article/view/2457**

Gerhard Rogler, Biedermann Luc, Michael Scharl. New insights into the pathophysiology of inflammatory bowel disease: microbiota, epigenetics and common signalling pathways. *Swiss Medical Weekly.* 2018; 148: w14599. **https://smw.ch/article/doi/smw.2018.14599**

Silvio Danese and Claudio Fiocchi. Etiopathogenesis of inflammatory bowel diseases*. World Journal Gastroenterology*. 2006 Aug 14; 12(30): 4807–4812. **www.ncbi.nlm.nih.gov/pmc/articles/PMC4087613/**

Prognosis and complications

Mortality rates in both Crohn's disease and UC are highest in the two years after diagnosis.[17,18] In Crohn's disease mortality rates remain slightly but statistically significantly higher than the general population[19] but in UC there is little difference in mortality rate.[18]

In Crohn's disease there are several factors which may suggest a poor prognosis, these include:

- early age of onset
- perianal disease

- corticosteroid use at presentation
- severe symptoms at presentation
- a history of more than one surgical resection **https://pmj.bmj.com/content/95/1119/32**
- a history of complicated disease, such as abscess, fistulising or penetrating disease.[20]

In UC a poor prognosis is linked to initial response to treatment. Those who respond fully to treatment have a more favourable prognosis than those who do not.[21]

Both Crohn's disease and UC share many complications.

Psychosocial impact
This may affect quality of life, education and work.[22]

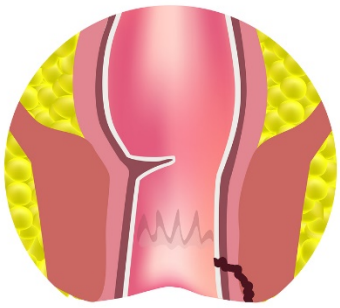
Cancer
People with UC have about a two percent chance of developing colorectal cancer after ten years, an eight percent after 20 years, and an 18 percent after 30 years of having the disease.[23] The risk is higher in those with extensive colitis or pancolitis and minimal in those who have proctitis or proctosigmoiditis.[24]

In Crohn's disease the risk of colorectal cancer is greater for people with extensive Crohn's colitis, primary sclerosing cholangitis (an uncommon chronic liver disease which increases the risk four-fold), colonic stricture (where the colon narrows and partially or completely obstructs the passage of bowel contents), or a family history of colorectal cancer in a first-degree relative aged under 50 years.[23]

There is also an increased risk of small bowel cancer for those with Crohn's disease. Although small bowel cancers only account for about two percent of all gastrointestinal cancers.[17]

Local complications include

- Strictures – areas of narrowing in the bowel caused by inflammation and scarring. The narrowing can lead to obstruction of stools and may require surgical intervention.[17,25]
- Fistulas – an abnormal opening between two organs (more common in Crohn's disease).
- Perianal complications (diseases of the rectum and/or anus) such as:
    - anal fissure – split or tear around the anus
    - anal or rectal stricture
    - perianal fistulas (connecting the anal canal to the skin).



Perianal fistula

- Haemorrhage - severe gastrointestinal haemorrhage requiring urgent treatment is a rare but serious complication.[26,27]
- Perforation of the bowel wall which can lead to peritonitis (a serious abdominal infection) and may be a result of toxic mega colon – severe dilation of the colon (more common in UC) or fistula (more common in Crohn's disease).[28,29]
- Intestinal abscesses caused by bacteria (more common in Crohn's disease).[17,28]

Systemic complications include

- Venous thromboembolism (VTE) – the most common sites are deep vein thrombosis (DVT) and pulmonary embolism (PE).[30]

- Anaemia – this can be due to malabsorption of iron, vitamin B23 or folate, blood loss or anaemia of chronic disease.
- Pauci-articular arthritis (where four or less large joints are affected) which is self-limiting and usually leaves joints without permanent damage.
- Metabolic bone disease such as osteoporosis, osteopenia (precursor to osteoporosis) and osteomalacia (problems with bone minerals due to malabsorption). A contributing factor may be corticosteroid treatment used for IBD.
- Skin conditions, eye conditions and mouth ulcers.[17,18]

For more information about complications visit the following NICE clinical knowledge summary pages:
Crohn's disease – Complications **https://cks.nice.org.uk/topics/crohns-disease/background-information/complications/**
Crohn's disease – Extra-intestinal manifestations **https://cks.nice.org.uk/topics/crohns-disease/background-information/extra-intestinal-manifestations/**
Ulcerative colitis – Complications **https://cks.nice.org.uk/topics/ulcerative-colitis/background-information/complications**
Ulcerative colitis – Extra-intestinal manifestations **https://cks.nice.org.uk/topics/ulcerative-colitis/background-information/extra-intestinal-manifestations/**

Detailed information can also be found on the Crohn's & Colitis Foundation's website:
Intestinal Complications
www.crohnscolitisfoundation.org/sites/default/files/legacy/assets/pdfs/intestinalcomps.pdf
Extraintestinal Complications: Kidney Disorders
www.crohnscolitisfoundation.org/sites/default/files/legacy/assets/pdfs/kidney.pdf
Eye Complications in IBD
www.crohnscolitisfoundation.org/sites/default/files/legacy/assets/pdfs/eyes.pdf
Bone Loss in IBD **www.crohnscolitisfoundation.org/sites/default/files/2020-03/boneloss.pdf**
Liver Disease and IBD
www.crohnscolitisfoundation.org/sites/default/files/legacy/assets/pdfs/liver-disease.pdf
Skin Complications of IBD
www.crohnscolitisfoundation.org/sites/default/files/legacy/assets/pdfs/skin.pdf
Arthritis **www.crohnscolitisfoundation.org/sites/default/files/2020-03/arthritiscomplications.pdf**

More information about some of the terms used in this section can be found here:
Patient Platform Limited – Anaemia of Chronic Disease **https://patient.info/doctor/anaemia-of-chronic-disease**

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Diagnosis/Detection

If a person presents with symptoms of Crohn's disease or UC then the following tests are usually requested:

- full blood count and ferritin levels – to identify anaemia
- inflammatory markers – such as C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR) – to look for inflammation or an infectious complication

- urea and electrolytes – to assess for electrolyte disturbance and signs of dehydration (due to diarrhoea)
- liver function tests, including albumin – a low serum albumin may indicate protein-losing enteropathy (protein loss through the bowel)
- serum ferritin, vitamin B12, folate, and vitamin D levels – there may be nutritional deficiencies due to malabsorption or intestinal losses
- coeliac serology (examination of blood serum to look for signs of coeliac disease) – to exclude coeliac disease
- stool microscopy and culture, including *Clostridium difficile* toxin – to exclude infective gastroenteritis or pseudomembranous colitis (infective causes of symptoms) (note that the diagnosis of an infection does not exclude a diagnosis of IBD as a first episode may be triggered by infection)
- Faecal calprotectin (a faecal white cell marker, for adults) – if raised may suggest active inflammation (compared with a normal result which is expected in irritable bowel syndrome).[31,32]

Assessing the severity of the disease helps to determine immediate management of people who present with IBD. Signs which indicate that people need an urgent hospital admission include being systemically unwell with symptoms of bloody diarrhoea, fever, tachycardia and hypotension.[33,34]

To confirm a diagnosis of Crohn's disease or UC endoscopies can be undertaken. This involves the use of endoscopes to look at the inside of the bowel, eg, colonoscopy (using a longer flexible endoscope) or sigmoidoscopy (using a shorter rigid endoscope).

For more information on diagnostic procedures, access Crohn's & Colitis UK's ***Getting a Diagnosis*** page or the British Society of Gastroenterology ***Guidelines for the management of inflammatory bowel disease in adults***.

NICE clinical guideline ***Ulcerative colitis: management (NG130)*** provides details on how to assess severity of UC and includes Truelove and Witts' severity index.

More information about some of the terms used in this section can be found here:
Patient Platform Limited – Anaemia of Chronic Disease **https://patient.info/doctor/anaemia-of-chronic-disease**
Patient Platform Limited – Acute-phase Proteins, CRP, ESR and Viscosity
https://patient.info/doctor/acute-phase-proteins-crp-esr-and-viscosity
Patient Platform Limited – Coeliac Disease **https://patient.info/doctor/coeliac-disease-pro**
Crohn's & Colitis UK – Dehydration
http://s3-eu-west-1.amazonaws.com/files.crohnsandcolitis.org.uk/Dehydration_Ed_5a_-_Amended_2021.pdf (dehydration information with those with IBD)

Pharmacological treatment

The aim of pharmacological treatment in IBD is to induce remission and maintain remission. This is described in the following NICE CKS.

Crohn's disease – Management **https://cks.nice.org.uk/topics/crohns-disease/management/confirmed-crohns-disease/**
Ulcerative colitis – Management **https://cks.nice.org.uk/topics/ulcerative-colitis/management/confirmed-ulcerative-colitis/**

There are several main types of medicines used to treat IBD. Crohn's and Colitis UK offer a series fact sheets with information about these medicines:
Aminosalicylates (5-ASAs) **https://crohnsandcolitis.org.uk/info-support/information-about-crohns-and-colitis/all-information-about-crohns-and-colitis/treatments/aminosalicylates-5-asas**

Azathioprine and Mercaptopurine **www.crohnsandcolitis.org.uk/about-crohns-and-colitis/publications/azathioprine-mercaptopurine**

Biologic Drugs **https://crohnsandcolitis.org.uk/about-crohns-and-colitis/publications/biologic-medicines**

Infliximab **www.crohnsandcolitis.org.uk/about-crohns-and-colitis/publications/infliximab**

Methotrexate **www.crohnsandcolitis.org.uk/about-crohns-and-colitis/publications/methotrexate**

Steroids **www.crohnsandcolitis.org.uk/about-crohns-and-colitis/publications/steroids**

Other Treatments for IBD **www.crohnsandcolitis.org.uk/about-crohns-and-colitis/publications/other-treatments**

Inducing remission in Crohn's disease
Acutely people who are experiencing a flare up of Crohn's disease can be offered a glucocorticosteroid such as prednisolone, methylprednisolone or intravenous hydrocortisone.
If this is not tolerated or if the person prefers they can be offered an aminosalicylate – 5-aminosalicylate (5-ASA), ie, mesalazine, sulfasalazine, olsalazine or balsalazide. 5-ASA should not be used in severe presentations or if there has been a previous flare up in the last 12 months.
Add on therapies include azathioprine, mercaptopurine or methotrexate. The tumour necrosis factor (TNF)-alpha inhibitors, infliximab and adalimumab, may also be considered if the Crohn's disease is severe.[35]

Read sections *1.2 Inducing remission in Crohn's disease* of NICE clinical guideline *Crohn's disease: management (NG129)* **https://www.nice.org.uk/guidance/ng129** for more information about inducing remission, including important monitoring information.

The following NICE Technology Appraisals cover other alternative treatment options:
Vedolizumab for treating moderately to severely active Crohn's disease after prior therapy [TA352] **www.nice.org.uk/guidance/ta352/**
Ustekinumab for moderately to severely active Crohn's disease after previous treatment [TA456] **www.nice.org.uk/guidance/ta456**

Maintaining remission in Crohn's disease

Those who did not have surgery

Before pharmacological treatments are started for the maintenance of remission of IBD a conversation with people with Crohn's disease should have taken place. This should involve talking about pharmacologic options (including the potential side effects) and the option of no pharmacological treatment and the risk of inflammatory exacerbations with each option.

Pharmacological maintenance treatment that can be offered includes:

- azathioprine or mercaptopurine
- methotrexate in those who needed it to induce remission, those who cannot tolerate azathioprine or mercaptopurine.

A conventional glucocorticosteroid or budesonide to maintain remission should not be offered.

Those who did have surgery

For those who have had more than one resection or previously had complicated, or debilitating disease consider azathioprine or mercaptopurine. 5-ASA treatment can also be considered and again budesonide or enteral nutrition should not be offered.[35]

Read sections *1.3 Maintaining remission in Crohn's disease* and *1.4 Maintaining remission in Crohn's disease after* surgery of NICE clinical guideline *Crohn's disease: management* (NG129) **www.nice.org.uk/guidance/ng129** for more information.

Inducing remission UC – mild to moderate disease

Proctitis and proctosigmoiditis

Step one is to offer a topical (suppository or enema) preparation of a 5-ASA alone or a combination of oral and topical 5-ASA or an oral 5-ASA alone. If this is not tolerated or if the person prefers then a topical corticosteroid or oral prednisolone can be offered.

Step two is to add oral prednisolone to 5-ASA therapy if there is no improvement after four weeks. Oral tacrolimus can be added after two to four weeks if the response to prednisolone is inadequate.[36]

Left-sided and extensive ulcerative colitis

Step one is to offer an oral aminosalicylate and adding a topical aminosalicylate or oral beclometasone dipropionate should be considered. If this is not tolerated or if the person prefers then oral prednisolone can be offered.

Step two is the same as step two for proctitis and proctosigmoiditis.[36]

Inducing remission UC - acute severe disease

Step one is to offer intravenous corticosteroids or intravenous ciclosporin if corticosteroids are declined or not tolerated.

Step two is to offer the addition of ciclosporin or corticosteroids depending on the initial treatment choice. The need for surgery should be considered throughout this process.[36]

Read sections *1.2 Inducing remission in people with ulcerative colitis* of NICE clinical guideline *Ulcerative colitis: management (NG130)* **www.nice.org.uk/guidance/ng130** for more information about inducing remission.

NICE Technology appraisal *Infliximab, adalimumab and golimumab for treating moderately to severely active ulcerative colitis after the failure of conventional therapy [TA329]* **www.nice.org.uk/guidance/ta329** covers these therapies as treatment options.

Maintaining remission in UC – mild to moderate disease

Proctitis or proctosigmoiditis

The following treatment options can be offered based on individual preferences:

- a topical 5-ASA alone
- an oral 5-ASA plus a topical 5-ASA
- an oral 5-ASA alone, explaining that this may not be as effective as combined treatment or an intermittent topical 5-ASA alone.

Left-sided and extensive ulcerative colitis

A low maintenance dose of an oral aminosalicylate can be offered in adults or an oral aminosalicylate in children and young people.

All extents of disease

- Oral azathioprine or oral mercaptopurine should be considered after two or more inflammatory exacerbations in 12 months that require treatment with systemic corticosteroids or if remission is not maintained by aminosalicylates.
- Oral azathioprine or oral mercaptopurine should be considered to maintain remission after a single episode of acute severe ulcerative colitis.
- 5-ASA should be considered in those who cannot tolerate or who decline azathioprine and/or mercaptopurine.[36]

Read sections *1.4 Maintaining remission in people with ulcerative colitis* of NICE clinical guideline *Ulcerative colitis: management (NG130)* **www.nice.org.uk/guidance/ng130** for more information about maintaining remission.

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Non-pharmacological treatment

Advice and support can help those who suffer from IBD, this includes signposting to Crohn's and Colitis UK **www.crohnsandcolitis.org.uk/**

Surgery

Surgery may be offered to those with either Crohn's disease or UC if they have had a poor response to long-term pharmacological treatment, in an emergency situation during a flare up, or due to bowel cancer. Additionally, surgery may be offered to those with Crohn's disease if they have strictures, abscesses or fistulas.

In UC surgery is seen as a curative treatment as the entire colon may be removed. In Crohn's disease the disease may reoccur at any point along the GI tract meaning that surgical removal of part of the bowel is not a cure.[37,38]

Details of different types of surgery can be found in the following Crohn's and Colitis UK information sheets:
Surgery for ulcerative colitis **http://s3-eu-west-1.amazonaws.com/files.crohnsandcolitis.org.uk/Publications/Surgery_For_Ulcerative_Colitis.pdf**
Surgery for Crohn's disease **http://s3-eu-west-1.amazonaws.com/files.crohnsandcolitis.org.uk/Publications/surgery-for-crohns-disease.pdf**

The NHS Overview – *Colostomy* **www.nhs.uk/conditions/colostomy/** and *Overview – Ileostomy* **www.nhs.uk/conditions/ileostomy/** pages contain information about why and these procedures are carried out, reversal, living with a colostomy/ileostomy and the potential complications.

Colostomy UK has the following resources that explore post-surgery management.

- *The Rectal Stump* **www.colostomyuk.org/wp-content/uploads/2017/11/Rectal-Stump.pdf**
- *Pain and Discomfort in the Rectum and Perineum following Stoma Surgery* **www.colostomyuk.org/wp-content/uploads/2019/12/Pain-Discomfort-2019.pdf**

Smoking cessation
In Crohn's smoking cessation advice should be offered as it may reduce the severity of the disease. Although rates of UC are lower in smokers smoking is not recommended and those with UC. In both cases people should be encouraged to speak to their IBD team about smoking cessation.[39]

Diet
Diet isn't thought to affect IBD, although keeping a food diary may be recommended if people feel that certain foods affect their condition. Food supplements may be offered to people who have a low intake of dietary vitamins and minerals.[40]

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Patient support

Crohn's and Colitis UK **https://crohnsandcolitis.org.uk/** hosts a series of *booklets, information sheets and guides,* **https://crohnsandcolitis.org.uk/info-support/information-about-crohns-and-colitis** publications which have been referred to throughout this page. They are aimed at everyone affected by Crohn's and UC, including those with diagnoses, their friends, partners, employers, parents and the healthcare professionals who manage their treatment. Crohn's and Colitis UK's website also has a *Support for you* **www.crohnsandcolitis.org.uk/support**

NHS Choices has a dedicated *Crohn's disease* **www.nhs.uk/conditions/crohns-disease/** and *Ulcerative colitis* **www.nhs.uk/conditions/ulcerative-colitis/** pages.

Further resources

If you would like to further your knowledge in this area we recommend accessing the Northern Ireland Centre for Pharmacy Learning and Development (NICPLD) *Lower GI: inflammatory bowel disease* **www.cppe.ac.uk/programmes/l/inflamm-e-01/** through CPPE.

The British Society of gastroenterology (BSG) offer Inflammatory Bowel Disease Guidance **www.bsg.org.uk/clinical/bsg-guidance/inflammatory-bowel-disease-guidance.html**

The European Crohn's and Colitis Organisation has published the following evidence-based consensus papers:

Third European Evidence-based Consensus on the Diagnosis and Management of Crohn's Disease 2016: Part 1: Diagnosis and Medical Management **https://academic.oup.com/ecco-jcc/article/11/1/3/2456546**

Third European Evidence-based Consensus on the Diagnosis and Management of Crohn's Disease 2016: Part 2: Surgical Management and Special Situations **https://academic.oup.com/ecco-jcc/article/11/2/135/2456548**

Third European Evidence-based Consensus on Diagnosis and Management of Ulcerative Colitis. Part 1: Definitions, Diagnosis, Extra-intestinal Manifestations, Pregnancy, Cancer Surveillance, Surgery, and Ileo-anal Pouch Disorders **https://academic.oup.com/ecco-jcc/article/11/6/649/2966917**

Third European Evidence-based Consensus on Diagnosis and Management of Ulcerative Colitis. Part 2: Current Management **https://academic.oup.com/ecco-jcc/article/11/7/769/2962457**

These Medicine Journal articles provide a good general overview of the conditions and their treatments:

Ho G-T, et al. Ulcerative colitis*. Medicine*. 2015; 43(5): 276 – 281. **www.medicinejournal.co.uk/article/S1357-3039(15)00045-6/abstract**

Hart A, Ng S. Crohn's disease. Medicine. 2015; 43(5):282–290. **www.medicinejournal.co.uk/article/S1357-3039(15)00047-X/abstract**

External websites

CPPE is not responsible for the content of any non-CPPE websites mentioned on this page or for the accuracy of any information to be found there.

All web links were accessed on 15 January 2022.

References

1. National Institute for Health and Care Excellence. Clinical Knowledge Summaries. ***Crohn's disease. Definition.*** August 2020.
2. National Institute for Health and Care Excellence. Clinical Knowledge Summaries. ***Ulcerative colitis. Definition.*** April 2020.

3. National Institute for Health and Care Excellence. Clinical Knowledge Summaries. ***Ulcerative colitis. Incidence and prevalence.*** April 2020.
4. Crohn's & Colitis UK. ***Ulcerative colitis***.
5. National Institute for Health and Care Excellence. Clinical Knowledge Summaries. ***Crohn's disease. Prevalence.*** August 2020.
6. Crohn's & Colitis UK. **Crohn's Disease.**
7. National Institute for Health and Care Excellence. Clinical Knowledge Summaries. ***Crohn's disease. Suspected Crohn's disease***. August 2020.
8. Crohn's & Colitis UK. **What are the symptoms?**.
9. National Institute for Health and Care Excellence. Clinical Knowledge Summaries. ***Ulcerative colitis. Suspecting ulcerative colitis***. April 2020.
10. National Institute for Health and Care Excellence. Clinical Knowledge Summaries. ***Ulcerative colitis. Excluding other conditions.*** April 2020.
11. National Institute for Health and Care Excellence. Clinical Knowledge Summaries. ***Crohn's disease. Risk factors***. August 2020.
12. Ardizzone S, Porro G B. **Inflammatory bowel disease: new insights into pathogenesis and treatment.** *Journal of Internal Medicine* 2002; 252(6): 475-496.
13. Akobeng A K. **Crohn's disease: current treatment options**. *Archives of Disease in Childhood* 2008; 93: 787-792.
14. Dignass A, Eliakim R, Magro F, et al. **Second European evidence-based consensus on the diagnosis and management of ulcerative colitis Part 1: Definitions and diagnosis**. *Journal of Crohn's and Colitis* 2012; 6(10): 965-990.
15. Kevans D, Silverberg M S, Borowski K, et al. **IBD Genetic Risk Profile in Healthy First-Degree Relatives of Crohn's Disease Patients.** *Journal of Crohn's and Colitis* 2016; 10(2): 209-215.
16. National Institute for Health and Care Excellence. Clinical Knowledge Summaries. ***Ulcerative colitis. Risk factors.*** April 2020.
17. National Institute for Health and Care Excellence. Clinical Knowledge Summaries. ***Crohn's disease. Complications.*** August 2020.
18. National Institute for Health and Care Excellence. Clinical Knowledge Summaries. ***Ulcerative colitis. Extra-intestinal manifestations***. April 2020.
19. Duricova D, Pedersen N, Elkjaer M, et al. **Overall and cause-specific mortality in Crohn's disease: a meta-analysis of population-based studies**. *Inflammatory Bowel Disease* 2010; 16(2): 347-353.
20. National Institute for Health and Care Excellence. Clinical Knowledge Summaries. ***Crohn's disease. Prognosis***. August 2020.
21. National Institute for Health and Care Excellence. Clinical Knowledge Summaries. ***Ulcerative colitis. Prognosis.*** April 2020.
22. Alarhayem, A. & Achebe, Ebele & Logue, Alicia. **Psychosocial Support of the Inflammatory Bowel Disease Patien**t. Surgical Clinics of North America. 95:2015
23. National Institute for Health and Care Excellence. CG118 ***Colorectal cancer prevention: colonoscopic surveillance in adults with ulcerative colitis, Crohn's disease or adenomas.*** March 2011.
24. Eaden J A. **Colorectal cancer complicating ulcerative colitis: a review.** *American Journal of Gastroenterology* 2000; 95: 2710-2719.
25. Crohn's.org.uk. **Complications of Ulcerative Colitis.**

26. Podugu A, Tandon K, Castro F J. **Crohn's disease presenting as acute gastrointestinal haemorrhage.** *World Journal of Gastroenterology* 2016; 22(16): 4073-4078.
27. Robert J H, Sachar D B, Aufses A H, et al. **Management of severe haemorrhage in ulcerative colitis.** *American Journal of Surgery* 1990; 159(6): 550-555.
28. Crohn's and Colitis Foundation. **Intestinal Complications.** January 2015.
29. National Institute for Health and Care Excellence. Quality standards briefing paper. ***Inflammatory bowel disease.*** February 2015.
30. Papa A, Gerardi V, Marzo M, et al. **Venous thromboembolism in patients with inflammatory bowel disease: Focus on prevention and treatmen**t. *World Journal of Gastroenterology* 2014; 20(12): 3173-3179.
31. National Institute for Health and Care Excellence. Clinical Knowledge Summaries. ***Ulcerative colitis. Investigations,*** April 2020.
32. National Institute for Health and Care Excellence. Clinical Knowledge Summaries. ***Crohn's disease. Investigations***. August 2020.
33. National Institute for Health and Care Excellence. Clinical Knowledge Summaries. ***Ulcerative colitis. Scenario: Managing suspected ulcerative colitis.*** April 2020.
34. National Institute for Health and Care Excellence. Clinical Knowledge Summaries. ***Crohn's disease. Scenario: Suspected Crohn's disease.*** August 2020.
35. National Institute for Health and Care Excellence. NG129 ***Crohn's disease: management.*** May 2019.
36. National Institute for Health and Care Excellence. NG130 ***Ulcerative colitis: management.*** May 2019.
37. Crohn's and Colitis UK. ***Surgery for Crohn's disease***.
38. Crohn's and Colitis UK. ***Surgery for Ulcerative Colitis.***
39. Crohn's and Colitis UK. ***Smoking and IBD.***
40. NHS. **Living with Ulcerative colitis.**

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