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# New test for Crohn's disease and ulcerative colitis

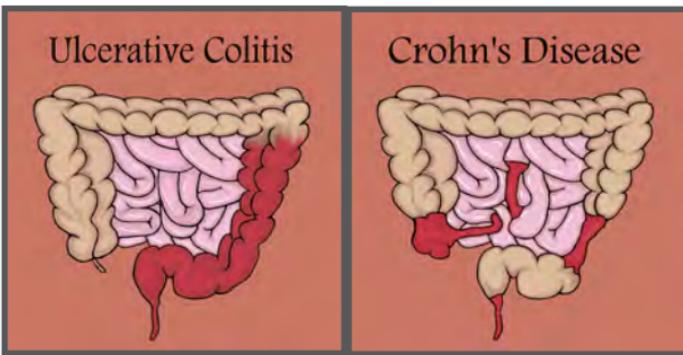


## Inflammatory bowel disease (IBD)

*Tens of thousands of Australians live with the debilitating symptoms of Crohn's disease or ulcerative colitis—the two conditions that come under the heading inflammatory bowel disease (IBD). They can play havoc with everyday lives and have serious consequences if left untreated. Although they affect different areas of the gastrointestinal tract in different ways, they do have similarities.*

### Ulcerative colitis (UC)

In UC, inflammation typically starts at the rectum and extends continuously back up the intestine. In most people, inflammation doesn't penetrate any deeper than the thin layer of mucosa that lines the intestinal wall, although occasionally it can be more severe.



### Crohn's disease (CD)

CD can affect any part of the gastrointestinal tract from the mouth to the anus. Inflammation isn't continuous but occurs in patches of the intestinal wall, with healthy areas remaining in between. It penetrates deeply, creating cracks (fissures), wounds and ulcers that can perforate the intestinal wall and cause infection. Over time, affected areas of the wall can thicken and narrow, blocking the flow of food and waste products. People with CD are at higher risk of malnutrition and anaemia.

Sometimes deeply penetrating ulcers create fistula tracts—small tunnels of tissue that connect one surface in the body (epithelial tissue) to another. Anal fistulas and fissures—cracks in the anus or the surrounding skin—are quite common. They can easily become infected and sometimes require surgery or antibiotics.

## Understanding the pathology of IBD

Inflammation is an essential part of the body's immune response to infections and other potentially harmful substances (called pathogens). It is the start of the healing process. It is a natural part of digestion because the immune system has to deal with unwanted bacteria and potentially poisonous matter in the intestines. The layer of mucus that lines the intestine wall is the first line of defence against these pathogens. This is a complex process involving specific cells and signalling systems that 'recognise' pathogens and initiate inflammation.

Normally, the intestine is in a steady balance between the cellular signalling systems that activate inflammation and others that turn it off. In IBD, inflammation occurs when it shouldn't, in response to the normal, harmless contents of the intestine. Also, the switching process is faulty and so inflammation is not turned off. This prolonged inflammation progressively damages the intestine wall, which constantly has to repair itself.

## Genetics

We now know that there is a genetic susceptibility for IBD: some genes involved in the immune system are implicated, and that many genes are involved.

More than 160 genes have been identified—the highest number for any common disease. An important recent study found that UC and CD share the majority of genetic risks, so that, rather than being two distinct diseases, UC and CD may be collections of many different diseases. This would help explain the wide range of variables in IBD.

Having severe UC or CD over many years increases the risk of bowel cancer. Therefore, regular monitoring is vital.



## Diagnosis

If you consult your doctor with gastrointestinal symptoms, there are many possible diagnoses. Some illnesses such as infections, coeliac disease and tumours have similar symptoms to IBD. There are also other conditions with similar symptoms but with no identifiable cause. Irritable bowel syndrome is the best known of these but it does not cause inflammation or damage to the intestine. If symptoms and medical history suggest CD or UC, it will be confirmed or ruled out with a series of tests that can include:

- Stool culture to look for bacterial infection
- Egg and parasite examination of the stool
- Clostridium difficile to detect toxin created by bacterial infection; this may be seen following antibiotic therapy
- Faecal occult blood test to look for blood in the stool
- Stool WBC (white blood cell count) to detect immune cells in the faeces
- Coeliac disease tests
- ESR (erythrocyte sedimentation rate) to detect inflammation
- CRP (c-reactive protein) to look for inflammation
- FBC (full blood count) to check for anaemia
- ELFT (electrolytes and liver function test) to look for electrolyte imbalance due to diarrhoea

## Colonoscopy and tissue investigation

The gold standard test for IBD is the colonoscopy and endoscopy. This is when a camera is inserted into the colon to enable a gastroenterologist to make observations and take biopsies of damaged areas.

These tissue samples are sent to the pathology lab for testing, where they are carefully examined under a light microscope. This is painstaking and precise work performed by specialist tissue pathologists—medical doctors with many years of additional training. Sometimes a biopsy will clearly indicate IBD, but on other occasions it can show nonspecific inflammation, in which case further investigations may be required.

## Faecal Calprotectin—an important new test

The vast majority of people who visit their doctor complaining of gut problems will find they do not have Crohn's disease or ulcerative colitis. Until recently, the only way to make a diagnosis was by a colonoscopy, which, like any invasive procedure, carries a small risk of complications.

Now there is a test that looks for a particular protein in faeces that can accurately indicate whether CD or UC is present. This new test, called faecal calprotectin, can help decide whether someone should have a colonoscopy or not.

## How it works

Calprotectin is a protein found mostly in neutrophils, one of the types of white blood cells responsible for inflammation. It helps control the spread of bacteria and fungi. As neutrophils accumulate at the site of inflammation in the intestine, calprotectin is released into the faeces: the higher the concentration of calprotectin, the more inflammation present. Healthy people have low levels of calprotectin in their faeces but someone with IBD has much higher levels.

### **Faecal calprotectin identifies IBD but does not differentiate between UC and CD.**

As well as for diagnosis, the test is also useful for monitoring treatment—it can identify anyone who appears to be in remission but who is at an increased risk of early relapse. Even in cases of successful treatment, a low level of inflammation can persist, increasing the chance of a relapse.

## Quality is seeing the whole picture

If you visit your doctor with symptoms that suggest Crohn's disease or ulcerative colitis, it's likely you'll become the focus of many different specialist laboratories that will collaborate in making your diagnosis and ensure your treatment is effective.

Our pathologists are specialists: their experience, expertise, and commitment to professional development give you the assurance that the diagnoses we deliver are accurate and reliable. Because we're a comprehensive laboratory, you can also be assured that your results can be examined by pathologists from all of the pathology disciplines. When we are presented with more obscure cases, we have the breadth of knowledge to deliver the answers.

Histopathology, microbiology, immunoserology, biochemistry and haematology all regularly contribute to the diagnosis of your condition.

The pathologists in each of these departments have a broad range of expertise that can assist in the diagnosis and management of your condition. It is important to remember that it is the combination of the clinical features *and* the laboratory findings that often leads to the final diagnosis.

## How can I have a faecal calprotectin performed?

Pathology is a medical specialty, so your doctor will need to complete a pathology request form to refer you for a faecal calprotectin test.

You will need to collect a faeces (stool) sample into a specimen jar with a brown lid. These are available from your doctor or from your closest SNP collection centre. Once you have collected your specimen, just drop it into an SNP collection centre near you.

Sullivan Nicolaides Pathology collection centres are located in the following cities and regions:

### Queensland

Brisbane & greater surrounds  
Cairns  
Fraser Coast  
Gold Coast  
Longreach  
Mackay  
Mt Isa  
Rockhampton  
Sunshine Coast  
Toowoomba & Darling Downs  
Townsville

### New South Wales

Coffs Harbour  
Grafton  
Northern Rivers  
Tenterfield

### Northern Territory

Darwin

## Locate our collection centres



For a full list of collection centres and their opening hours, visit [snp.com.au](http://snp.com.au). With your web-enabled camera, phone-scan the QR code with a QR code reader application.

## SNP Collection Centres Locator App

now available for iPhone and iPad



## Fees

There is no Medicare rebate for this test.

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