

Information for Doctors

Faecal calprotectin (fCal)

Faecal calprotectin (fCal) testing is now listed in the Medicare Benefits Schedule for patients with undiagnosed gastrointestinal illness suspected to be inflammatory bowel disease (either Crohn's disease or ulcerative colitis). A normal/negative fCal can exclude IBD and decrease the need for diagnostic endoscopy procedures. This insight will summarise the clinical utility and requirements for ordering this test.

Faecal calprotectin - Test principle

Patients with IBD and irritable bowel syndrome (IBS) share many clinical symptoms, including abdominal pain and/or diarrhoea. As IBD may require treatment/monitoring under a specialist gastroenterologist, many patients undergo endoscopies that are ultimately normal, excluding IBD, in a majority of cases. These patients can be diagnosed with IBS and managed by GPs.

Granulocytes (including neutrophils) contain high levels of cytosolic calprotectin (Cal). In active IBD, neutrophils extrude onto the inflamed mucosa and are shed into the intestinal lumen and inflammatory proteins such as Cal, which does not degrade in the intestine can therefore be measured in the stool. The Cal concentration is relatively homogeneously distributed in faeces and is proportional to the intensity of the neutrophilic infiltrate in the intestinal mucosa.

Thus, faecal calprotectin (fCal) detects mucosal inflammation in IBD. There are other causes for an increased fCal including gastrointestinal infection, coeliac disease, gastrointestinal neoplasia, recent NSAID use, and potentially, eosinophilic gastroenteritis disorders.

Therefore, it is recommended that other conditions such as coeliac disease and gastrointestinal infections including giardia are excluded prior to fCal measurement. Ideally, a fCal sample should be collected at **least four weeks after stopping NSAIDs.**

Importantly, fCal should not be used in any of the following situations:

1. Suspicion for a gastrointestinal neoplasia such as unexplained weight loss and/or rectal bleeding
2. As a surrogate test in situations with abnormal blood tests such as iron deficiency
3. As a screening test in patients with family history of IBD or bowel cancer
4. Screening for coeliac disease
5. Poor samples – excessively watery or bloody faecal specimens.

In these situations, endoscopy may be the preferred diagnostic test.

Medicare benefits schedule (MBS) listing

Item 66522 – fCal test for the diagnosis of IBD, if all of the following apply:

- a. the patient is **under 50 years of age**;
- b. the patient has gastrointestinal **symptoms** suggestive of inflammatory or functional bowel disease of **more than 6 weeks'** duration;
- c. infectious causes have been excluded;
- d. the **likelihood of malignancy** has been **assessed as low**;
- e. **no relevant clinical alarms** are present.

Item 66523 (applicable to gastroenterologists) – fCal test for the diagnosis of IBD, if all of the following apply:

- a. the **results** of a service to which item **66522** applies were **inconclusive** for the patient (that is, the results showed a faecal calprotectin level of more than 50 µg/g but not more than 100 µg/g);
- b. the patient has **ongoing gastrointestinal symptoms** suggestive of inflammatory or functional bowel disease;
- c. the **service is requested by a specialist or consultant physician practising as a specialist gastroenterologist**;
- d. the **request indicates that an endoscopic examination is not initially required**;
- e. no relevant clinical alarms are present.

In summary, the new MBS listing on the previous page covers two fCal tests per annum in the following circumstances:

1. for **diagnostic purposes** as requested by any medical practitioner
2. for follow-up testing for diagnostic confirmation when requested by a specialist gastroenterologist.

Interpretation:

If the criteria outlined in the item 66522 are fulfilled:

1. fCal < 50, GP can treat the patient as having IBS
2. fCal 51 - 100, gastroenterologist may repeat test after reviewing the clinical scenario
3. fCal > 100, patient should be seen by a gastroenterologist and investigated for IBD.

Note: fCal has not been validated in children under two years of age.

Melbourne Pathology provides the fCal test using the Diasorin Liaison XL assay. Samples should be collected and directed to Melbourne Pathology. If delayed, samples should be stored in the fridge and not frozen.

For further information, please contact our Immunopathologists on 9287 7758.



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After graduating from Monash University in 1997, Dr Unglik trained at the Royal Melbourne and Alfred Hospitals. He obtained combined fellowship with both the

Royal Australasian College of Physicians and the Royal College of Pathologists of Australasia in 2007.

After completing advanced training he was appointed to the Department of Clinical Immunology and Allergy at the Royal Melbourne Hospital where he was also Head of the Immunopathology laboratory unit until 2015.

Dr Unglik joined Melbourne Pathology in February 2010 as a Consultant Immunopathologist. He continues as a Consultant Clinical Immunologist and Allergist in the Department of Clinical Immunology and Allergy at the Royal Melbourne Hospital.

He is also a member of the Australasian Society of Clinical Immunology and Allergy.



Dr Julian Bosco

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Dr Bosco completed his Bachelor of Medicine and Bachelor of Surgery with Honours in 2002 at the University of New South Wales.

From 2007 - 2011 he trained in Clinical Immunology/Allergy and Immunopathology in New South Wales and Victoria, at the Westmead and Royal Melbourne Hospitals.

Since being awarded his Fellowship with the Royal Australasian College of Physicians and Royal College of Pathologists of Australasia in 2011, Dr Bosco has held Clinical Immunology and Allergy consultant positions at both the Royal Victorian Eye and Ear and the Alfred Hospitals. He also works as a consultant Immunologist and Allergist with Epworth Allergy Specialists and as an Immunopathologist with Alfred Pathology. He completed his PhD on the immunoregulatory properties of CD52 at the Walter Eliza Hall Institute of Medical Research.

Dr Bosco joined Melbourne Pathology as a Consultant Immunopathologist in February 2016 and has a special interest in autoantibody-associated autoimmune disease, allergic disease and immunodeficiency.