

- ✦ Sensitive and specific.
- ✦ Predictive marker of relapse if there is a confirmed increase in 2 successive measurements.
- ✦ Promising marker of mucosal healing and remission.
- ✦ Predictive marker of a prolonged therapeutic response to an anti-TNF α biotherapy.

Calprotectin preanalytical requirements

- ✦ **Method:** ELISA, BUHLMANN kit
- ✦ **Turnaround time:** 7 days
- ✦ **Sample requirement:** 20 g of stools, refrigerated.
Stools should be collected in an ordinary container (without additives); infant's diapers are not accepted.
- ✦ **Stability:** stools are stable at 2° - 8° C for 7 days.

Reference values

Adults

- ✦ < 50 μg per g of stools: absence of organic pathology
- ✦ 50 - 200 μg per g of stools: grey zone
- ✦ > 200 μg per g of stools: in favour of organic pathology

Children

- ✦ **From 0 - 1 year:** absence of organic pathology for calprotectin levels < 350 μg per g of stools
- ✦ **From 1 - 3 years:** absence of organic pathology for calprotectin levels < 275 μg per g of stools

References

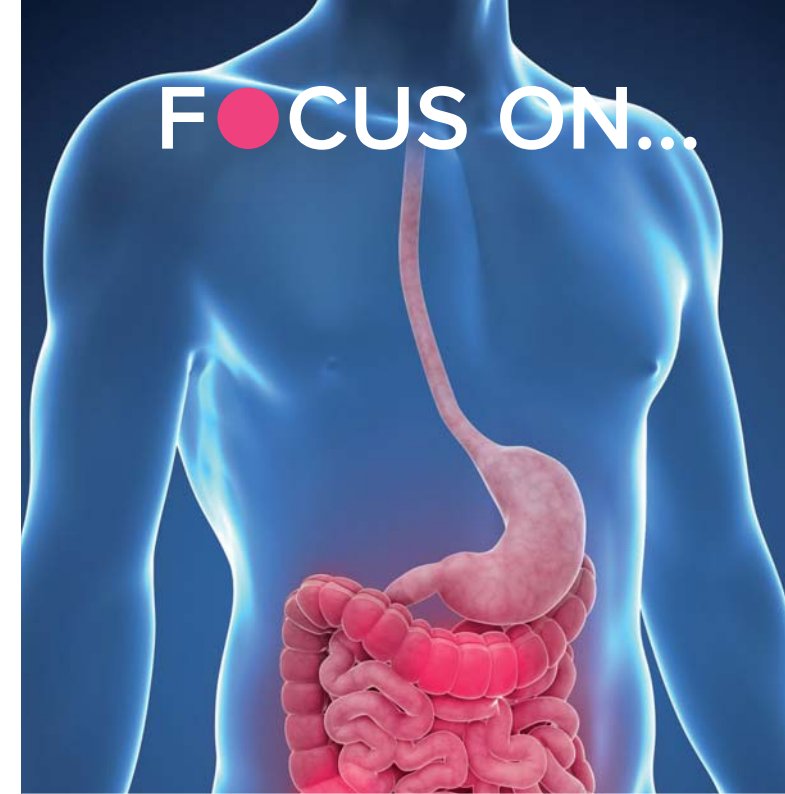
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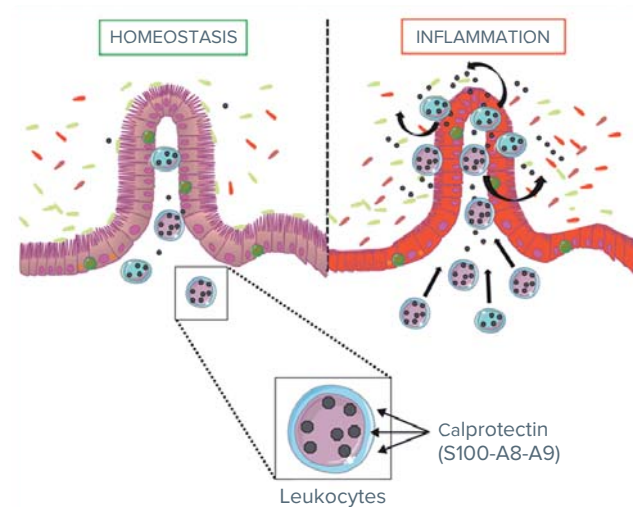
Reliable, Non-Invasive Identification of IBD vs IBS

Available from Biomnis Laboratories, Faecal Calprotectin is a very sensitive and specific, non-invasive test that can detect bowel inflammation. It is useful as a screening test in all subjects reporting gastrointestinal (GI) problems and is extremely pertinent for diagnosing and differentiating Inflammatory Bowel Disease (IBD) and Irritable Bowel Syndrome (IBS).

What is Calprotectin ?

Calprotectin is a calcium-binding protein belonging to the S100 family. It is derived predominantly from the neutrophil cytosol and is released into the intestinal lumen during inflammation. It is resistant to intestinal proteolysis and remains stable in faeces for up to one week.

Significant increased levels of calprotectin in stool are found in patients with bowel inflammation (e.g. IBD), whereas it is not elevated in patients with functional diseases like IBS. The level of faecal calprotectin correlates directly to the number of neutrophil granulocytes in the intestinal lumen. As such, it is specifically elevated in IBD such as Crohn's disease and ulcerative colitis and to a much smaller extent in other entities such as neoplasia and polyps.



Excellent Performance

The outstanding performance of the automated calprotectin ELISA test with the BUHLMANN kit, used by Biomnis laboratories, is underlined by the high sensitivity and specificity of the test (Table 1).

This technique boasts a sensitivity and specificity of 84.4% and 94.5% respectively for the differentiation of organic and functional diseases.

The measurement range goes from 30 -1800 µg per g of stools.

Table 1: Calprotectin test performance

	Calprotectin
Sensitivity	84.4%
Specificity	94.5%
Positive predictive value (PPV)	87.8%
Negative predictive value (NPV)	92.8%



Clinical Interpretation

Stool calprotectin measurement is an easy, non-invasive first-line test which clearly differentiates IBD from IBS and other functional disorders.

- Values < 50 µg exclude inflammation of the intestinal tract.
- Values between 50 and 200 µg (in adults) can be attributed to an organic disease such as inflammation caused by

Nonsteroidal anti-inflammatory drugs (NSAIDs), a non-severe diverticulitis... For weak intensity inflammations, it is recommended to repeat testing and perform additional tests.

- Values > 200 µg (in adults) indicate organic type diseases with inflammation of the gastro-intestinal tract.

Faecal calprotectin is extremely useful in the monitoring and evaluation of the inflammatory activity of IBDs ; there is a clear correlation between the calprotectin levels and the endoscopic score. This allows the distinction between inactive diseases and moderate to severe inflammatory activities in IBDs, according to the calprotectin level.

Calprotectin is also used as a marker for therapeutic effectiveness; calprotectin levels drop below the positivity threshold in patients presenting an IBD and responding to treatment by Infliximab (anti-TNF). Patients in clinical remission with a low concentration of faecal calprotectin have a much better prognosis than patients with a high concentration.

Benefits of Calprotectin Testing

- Simple, non-invasive test which allows the clear distinction between IBDs and IBS.
- This test enables IBD monitoring by reducing the number of endoscopies.

