



BIONEXT

LABORATOIRE LUXEMBOURGEOIS
D'ANALYSES MÉDICALES



GASTROINTESTINAL INFECTIONS FROM DIAGNOSIS TO TREATMENT

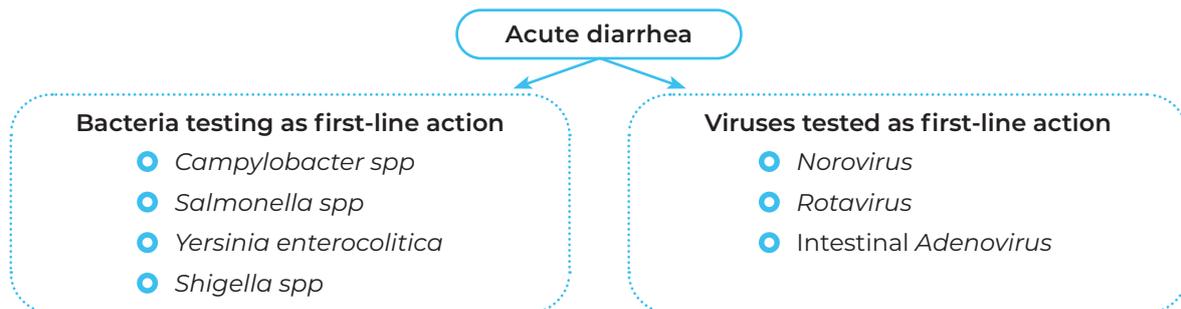
Acute diarrhea, which is most often infectious, ceases spontaneously in most cases. However, depending on the context, biological testing may be required in order to adapt patient management to its cause: bacteria, viruses or parasites. The use of syndromic PCR panels optimises the microbiology diagnosis and improves treatment.

Quick results: a boon for clinicians

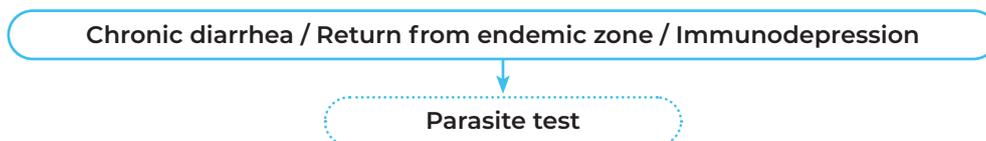
BIONEXT uses optimised organisation and efficient analytical methods to speed up diagnosis and rapidly guide treatment. The use of **syndromic multiplex PCR testing** enables targeted simultaneous detection of the main enteropathogenic agents, with **same-day results** when the sample is received before noon, thus allowing **an early and appropriate clinical decision**.

Which pathogens can be sought through testing?

The pathogens responsible for gastrointestinal infections differ depending on **whether the diarrhea is acute or prolonged**, which determines the choice of examinations to prescribe. **Acute diarrhea** is most often infectious, and chiefly related to bacteria and viruses. Extended or chronic diarrhoea is more often attributable to **parasites**.



If the **bacterial PCR test is positive**, a **culture** is always carried out as the **second-line action** to isolate the organism, carry out an **antibiogram** and contribute to **epidemiological surveys and resistance monitoring**.



What is the place of parasitology in current practice?

Multiplex PCR techniques for parasites have been shown to be efficient, combining high sensitivity and rapid result delivery. However, the approach remains non-exhaustive, limited to the parasites included in the test panel. Combining it with a microscopic examination extends the diagnostic field and optimises the detection of intestinal parasite infections.

Besides, the identification of some parasites using PCR does not systematically mean they are pathogens. Indeed, some organisms can be found in asymptomatic individuals, raising the question of carrying, compared to infection. Two examples that are commonly encountered in practice illustrate that issue: *Blastocystis hominis* and *Dientamoeba fragilis*.

Blastocystis hominis and *Dientamoeba fragilis*

- Cosmopolitan parasites
- Very frequent detection : 23% and 15% respectively
- Pathogenicity controversial
- Many healthy carriers
- Aspecific chronic digestive disorders:
 - Nausea
 - Vomiting
 - Abdominal pain
 - Bloating
- Causal relationship with symptoms not established
- Interpretation depending on clinical experience, patient terrain and the exclusion of other infectious causes

Parasites: in practice

- A negative parasite test does not rule out parasite infection
- Stool repetition (2 to 3) = improved sensitivity because parasite excretion is intermittent
- Indispensable clinical information: Travel to tropical regions? Chronic symptoms? Immunodepression? Hypereosinophilia?
- Most sensitive examination for pinworm infection = Graham test tape
- Value of serology for tissue parasite infections:
 - Echinococcosis
 - Distomatosis
 - Trichinellosis
 - Schistosomosis
 - Strongyloidiasis

When should *Clostridioides difficile* be tested and how are the results to be interpreted?

Testing for *Clostridioides difficile* must be strictly targeted. It is indicated in symptomatic patients presenting with **diarrhea**, associated with recent antibiotic treatment, hospitalisation or an at-risk terrain. In accordance with recommendations, **formed stools are not tested**. Testing for this organism is therefore not systematic.

At BIONEXT, the screening strategy has been established in line with the recommendations of reference centres. It relies on **PCR detection of genes coding A/B toxins** as first-line action. If the PCR is positive, an **immunochromatographic free toxin assay** is carried out.

This approach differentiates active infections associated with toxin production from toxin-generating carrying with no detectable toxin expression and to adapt the medical interpretation accordingly.



In practice

Titles to use in the prescription:

- ✓ Stool: PCR bacteria panel
- ✓ Stool: PCR virus panel
- ✓ Stool: PCR parasite panel + microscope
- ✓ Explicitly mention testing for certain bacteria depending on the context (e.g.: *Clostridium*).
- ✓ BIONEXT can collect your samples from the office every day. For more information:

☎ 27 321 285

✉ bio@bionext.lu



Key points

- ✓ **Same-day result** if the stool sample is received **before 12h**
- ✓ Combining parasite testing with **PCR and microscopic examination**= optimised strategy
- ✓ **Appropriate integration in the clinical context**
- ✓ **Integrated treatment advice** in the report
- ✓ All with **CNS cover**

