




Diagnostic Tools for Detecting Gastrointestinal Infections

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Acute gastroenteritis, also sometimes called food poisoning, is when the stomach and intestines are infected by a microbe that enters the body through the mouth. It can be caused by bacteria, viruses, and parasites, among other things.

Examples include:

- **Bacterial gastrointestinal infections:** Bacteria such as *Escherichia coli* (*E. coli*) can cause bacterial gastroenteritis. Most types of *E. coli* don't cause a problem, but some strains can make you sick and cause infections in your gut.
- **Viral gastroenteritis**, also called "stomach flu," is usually caused by noroviruses. These viruses are a major cause of foodborne illness around the world. They can spread through contact with infected people or by eating or drinking contaminated food or water.
- **Parasitic gastrointestinal infection:** Parasites (germs) such as giardia can also cause GI illnesses. Different parasites can cause intestinal illnesses, but they all get into the body through contaminated food or water.

Learn more about bacterial gastrointestinal infections with IFFGD Fact Sheet No. 283 When bacteria in your gut is a problem.

It's important to remember that gastroenteritis can cause diarrhea, stomach cramps, nausea, vomiting, and sometimes fever. Symptoms may differ in severity and frequency based on the cause and how healthy the patient is.

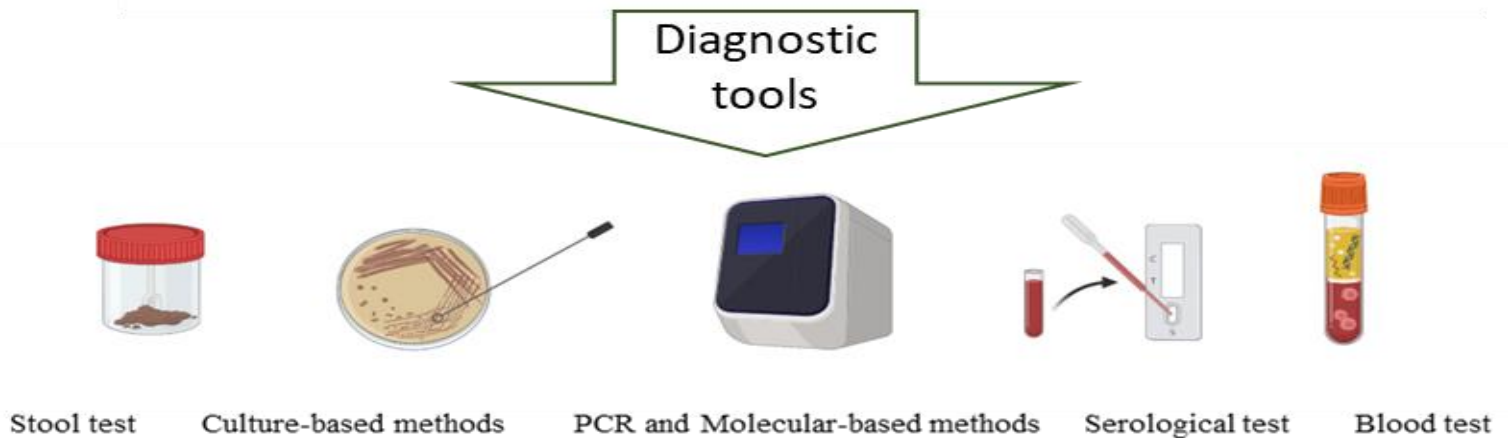
If you think you have a gastrointestinal infection, it is best to see a healthcare provider to get a correct diagnosis and the right medicine. They can figure out the cause of the infection and suggest treatment options that will help relieve symptoms and speed up recovery.

It is recommended that you see a healthcare provider if you experience the following:

- If your GI infection is causing you to have a fever of over 104°F (40°C)
- If you cannot keep liquids down for 12-24 hours because you keep throwing up
- If you've been throwing up for more than 48 hours and it hasn't gotten better
- If you see blood in your vomit
- Dehydration: If you have a lot of thirst, a dry mouth, little or no urine output (or pee that is very dark yellow), extreme weakness, lightheadedness, or dizziness.
- Severe Symptoms: If you have severe abdominal pain, high fever that doesn't go away, or bloody feces (stool), or if your symptoms get worse or worry you.

Diagnosis of Gastrointestinal Infections

There are several diagnostic tools for detecting gastrointestinal infections. These include stool or fecal tests that look for viruses, bacteria, or parasites in the bowel movement and blood tests.



Stool or fecal tests

There are many different tests that examine a sample of a person's bowel movement (stool) to detect various conditions and diseases related to the GI system. This includes infections, inflammation and even malabsorption issues. Stool tests can also detect the presence of:

- Parasites such as Giardia, Cryptosporidium (worms)
- Bacteria such as Salmonella, Campylobacter, or Clostridioides difficile (C. diff).
- Viruses such as Rotavirus or norovirus

Learn more about Clostridioides difficile (C. diff) with IFFGD Fact Sheet No. 167
Clostridioides difficile (C. diff)

With standard Stool or fecal tests, each test will usually look at one of the possible causes listed above.

There are several types of stool tests, the most commonly used in gastrointestinal infections are:

- **Polymerase chain reaction (PCR):** These are often used to look for viruses, bacteria, or parasites in the digestive system. These tests look at samples of stool to find out which pathogens are causing the sickness. PCR tests are used to rapidly make millions of copies of the sample, allowing the healthcare provider to see what might be causing the problem.

- **Enzyme immunoassays (EIAs):** These are often used to look for viruses, bacteria, or parasites in the digestive system. These tests look at samples of stool to find out which pathogens are causing the sickness. EIA tests are used to help identify whether you are allergic to a particular substance by detecting antibodies the body created to fight the cause of the infection.
- **Molecular-Based Testing:** Molecular-based tests, like PCR, are very sensitive and accurate ways to find GI illnesses. These tests can find the bacteria's genetic material (DNA or RNA), which makes a quick and accurate diagnosis possible.
- **Culture-Based Methods:** With culture-based methods, bacteria from either saliva, bowel movement, or blood are grown in special culture dishes. This method makes it possible to find and learn more about the organism that is causing the problem, including how well it responds to antibiotics. But compared to molecular-based tests, this process can take longer.

Blood Tests

Sometimes, blood tests can help diagnose GI illnesses. Blood tests can check for antibodies or other signs of an illness, which can help find the cause. The most common blood tests used are Serological Tests. In these

tests, blood samples are analyzed to look for antibodies that the immune system makes in reaction to an infection. These tests can tell you about past or present infections and help you figure out what kind of pathogen is causing them.

Syndromic Testing

Syndromic Testing can look for a wide range of infections at the same time. For GI infections, syndromic testing could be used to find out what caused the infection in the digestive system. It is used to quickly figure out what microbe, such as bacteria, virus, or parasite, is causing the infection by testing one single sample of bowel movement for a variety of causes at the same time. With syndromic testing, results are usually available in about an hour.

Learn more about Syndromic Testing with IFFGD Fact Sheet No. 282
What is Syndromic Testing?

About IFFGD

The International Foundation for Gastrointestinal Disorders (IFFGD) is a 501(c)(3) nonprofit education and research organization. We work to promote awareness, scientific advancement, and improved care for people affected by chronic digestive conditions. Our mission is to inform, assist, and support people affected by gastrointestinal disorders. Founded in 1991, we rely on donors to carry out our mission. Visit our website at: www.iffgd.org.

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