

ENTERIC VIRAL PATHOGENS (stool)

Several viruses are known to cause gastroenteritis. On a global basis viral enteric disease accounts for 60% of illness in developing countries and 40% in developed countries. Enteric viral infections are seen more frequently in infants and children and somewhat lesser in adults. The most common viruses causing gastrointestinal disease are Rotaviruses, Noroviruses, Astrovirus and certain Adenoviruses.

Often symptomatic patients are not diagnosed with a known enteropathogen (bacterium, parasite or yeast), so one could suspect that undiscovered enteropathogens (in particular viruses) are likely to exist. Rapid diagnosis of viral gastroenteritis assists ruling out suspicion of bacterial or parasitological disease.

Rotavirus, Adenovirus, Astrovirus

Rotavirus, Adenovirus and Astrovirus are the most common and major causes of severe gastroenteritis in infants and young children. Adults can also be affected. They are transmitted by faecal-oral contact.

The main symptoms of viral gastroenteritis are watery diarrhoea and vomiting. The affected person may also have nausea, headache, fever and abdominal cramps ('stomach ache').

Rotavirus is the leading cause of severe diarrhoea in infants and young children. Adenovirus most commonly causes respiratory illness, however can also cause gastroenteritis, bladder infections and skin rashes.

In general, the symptoms begin 1 to 2 days following infection with a virus that causes gastroenteritis and may last for 1 to 10 days, depending on which virus causes the illness -- Rotavirus 3 days, Adenovirus 5-8 days and Astrovirus 3 days.

Norovirus

Noroviruses are the leading cause of gastroenteritis, including foodborne outbreaks.

It can be transmitted by consuming contaminated food or drinks, touching contaminated objects then putting hand/fingers in mouth or direct contact with infected individual e.g. sharing food, drink, eating utensils. Norovirus is often the cause of gastroenteritis epidemic on board cruise ships.

The symptoms of Norovirus are those typical of gastroenteritis - vomiting, watery diarrhoea and abdominal cramps. Vomiting is a characteristic symptom in the majority of Norovirus infections (64% of adults and 81% of children). Other symptoms such as general malaise, low grade fever, nausea and fatigue are also present in over 90% of cases.

The incubation period of the disease is generally between 12 and 48 hours, while infection lasts between 12 and 60 hours. Infection may also be asymptomatic, and thus contribute to the spread of the virus in the community. As a rule, the disease does not have serious consequences, and most patients recover within 1-2 days without complications. Debilitated patients and persons with weaker immune systems such as children, elderly or chronic patients may be affected by more serious forms of the disease. Specially, dehydration may represent a serious complication for children, the elderly and persons with a precarious metabolic balance or cardio circulatory instability.

Clostridium difficile toxin A & Toxin B

Clostridium difficile (*C. difficile*) is a gram-positive spore bearing anaerobic bacterium is the major aetiological agent of diarrhoea and colitis associated with antibiotics use. Disease due to Clostridium difficile develops when the organism is allowed to proliferate in the colon, most commonly after antibiotic use has eliminated competing flora.

The most common antibiotics that pose a potential risk for *C. difficile* include clindamycin, fluoroquinolones, ciprofloxacin, cephalosporins and penicillins.

Other risk factors include hospitalisation, individuals 65 years of age or older and pre-existing chronic medical conditions.

C. difficile can release two high-molecular-weight toxins, toxin A and toxin B, which are responsible for the clinical manifestations, which range from mild, self-limited watery diarrhoea to fulminant pseudomembranous colitis, toxic megacolon and death. *C. difficile* is one of the most common causes of death due to gastroenteritis.

ENTERIC VIRAL PATHOGENS PROFILE (stool) [Test Code: 2026]

- ❖ Rotavirus EIA, Adenovirus EIA, Astrovirus EIA, Norovirus EIA

CLOSTRIDIUM DIFFICILE TEST (stool) [Test Code: 2017]

- ❖ Clostridium difficile Toxin A and Toxin B

Other stool pathogen tests available:

- **Faecal DNA Multiplex PCR [2002]:** Giardia intestinalis, Cryptosporidium, Dientamoeba fragilis, Entamoeba histolytica, Blastocystis hominis; Campylobacter spp, Salmonella spp, Shigella spp, Yersinia enterocolitica, Aeromonas spp.
- **Parasitology Profile (faecal) – 3 day [2015]:** Cryptosporidium EIA, Giardia lamblia EIA, Entamoeba histolytica EIA; other parasites (visual detection)
- **Helicobacter pylori Antigen (faecal) [2010]:** Helicobacter pylori antigen

How to order a test kit:

To order a test kit simply request the test name or test code on a NutriPATH request form and have the patient phone NutriPATH Customer Service on 1300 688 522.



Phone **1300 688 522** for further details
www.nutripath.com.au