

# CRYPTOSPORIDIOSIS

## Disease Overview

Cryptosporidiosis is found worldwide and is caused by protozoan parasites *Cryptosporidium*. *C. hominis* and *C. parvum*, are the two species most often associated with human infection.

## Symptoms

Gastrointestinal illness characterized by diarrhea (often profuse and watery), which can be accompanied by abdominal cramps, loss of appetite, fever, nausea, general malaise, dehydration and vomiting. Asymptomatic infections can also occur. Most infections are self-limiting and symptoms usually last less than 30 days. Infections in immunocompromised persons (i.e. human immunodeficiency virus) can be prolonged and life threatening.

## Reservoir

Humans, domesticated animals (including cattle, sheep, goat, horses, pigs, cats, dogs) and wildlife.

## Mode of Transmission

Fecal-oral and includes person-to-person, animal-to-person, water-borne and food-borne transmission.

Outbreaks have been associated with contaminated drinking and recreational water (swimming pools). Outbreaks have also occurred in daycare centres, travel, contact with farm animals and in healthcare facilities.

## Incubation Period

Variable, about 7 days is average (1-12 days likely range).

## Period of Communicability

Infectious oocysts appear in the stool at the onset of symptoms. Excretion in stool occurs for several weeks after symptoms resolve. Oocysts remain infectious for months in moist environment.

## Risk Factors

Increased risk of acquiring/severe illness:

- Immunocompromised persons
- Children under two
- Household or intimate contact of a case
- Animal handlers
- Men who have sex with men
- Travellers to endemic countries

## Surveillance Case Definition

**Confirmed case** is laboratory confirmation of infection with or without symptoms from an appropriate clinical specimen (e.g. stool, intestinal fluid or small bowel biopsy), with demonstration of:

- *Cryptosporidium* spp. oocysts  
OR

- *Cryptosporidium* spp. nucleic acid (e.g., by polymerase chain reaction (PCR) or other nucleic acid test (NAT))  
OR
- *Cryptosporidium* spp. antigen (e.g., by an immunologic assay).

**Probable case** is clinical illness in a person who is epidemiologically linked to a confirmed case.

## Diagnosis and Laboratory Guidelines

Laboratory diagnosis of cryptosporidium is done on a stool specimen using an enzyme immunoassay for the *Cryptosporidium* antigen. In case of equivocal results, for special requests and for some high-risk patients (children under 12 and patients with a travel history), a full workup can be done using the modified Kinyoun coloration protocol. This coloration allows for the detection of the *Cryptosporidium* oocysts. This coloration is also used as a confirmatory test when needed.

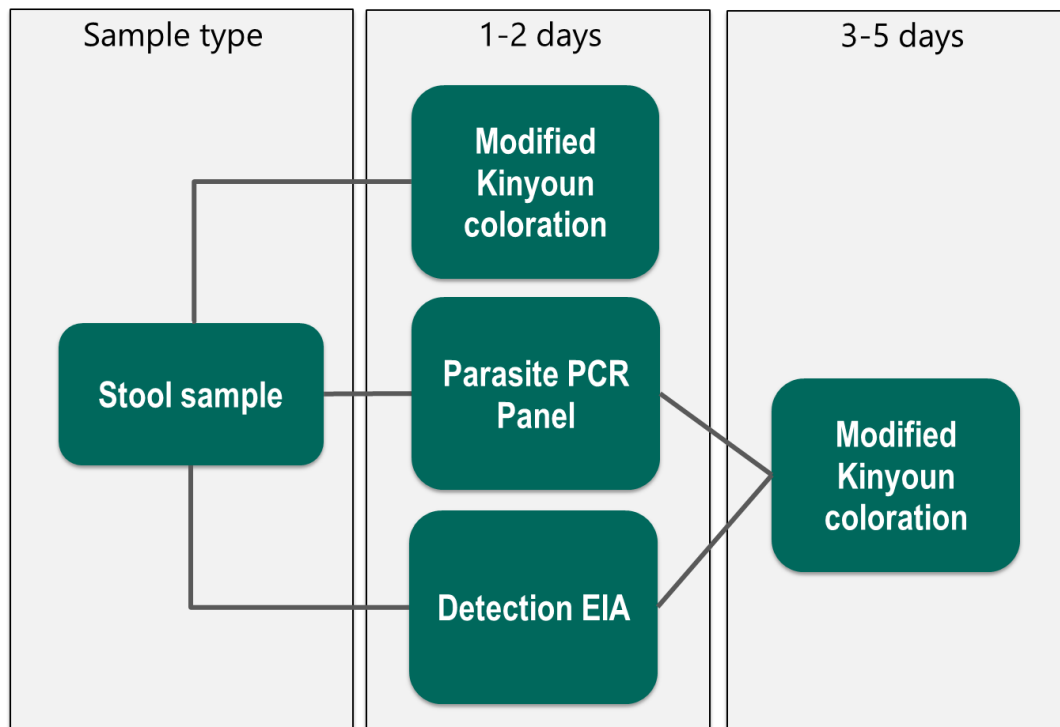
The enzyme immunoassay and the modified Kinyoun coloration are done in New Brunswick, although some labs do refer the coloration to another laboratory, which may affect the turnaround time.

*Cryptosporidium* is detected through its genetic material by PCR parasite panels that are in use in some labs in New Brunswick. Detection by PCR is enough to confirm a case and the confirmatory testing through coloration is not normally done unless required.

## Laboratory Testing

An overview of testing timelines for samples after the sample has been received by the laboratory. Turnaround times are averages and may change depending on the urgency of the situation.

Figure 1: Testing timelines:



## Reporting

Per Policy 2.2 Disease and Event notification to OCMOHE and section 3 Disease and Event Reporting

- Routine surveillance (RDSS) for all confirmed cases.
- Access database for all confirmed cases. Database extracts are submitted to OCMOHE on a weekly basis.

## Case Management

### Education

Case or relevant caregiver should be informed about:

- Nature of infection, length of communicable period and mode of transmission
- Enteric disease precautions
- Hand washing
- Safer sex practices (if applicable)
- Immunosuppressed patients should boil water before consumption and avoid contact with farm animals and infected humans

### Investigation

For cases and symptomatic contacts, complete enteric investigation form.

### Exclusion/Social Distancing

Follow guidelines for cases under investigation identified in high-risk individuals (Exclusion Periods for Food Handlers and Caregivers with Enteric Illness) and guidelines for individuals less than 5 years of age who are unable to implement good standards of personal hygiene, for example daycare centres and kindergartens).

Case should avoid recreational water contact for at least 2 weeks after symptom resolution.

### Treatment

Not applicable

### Immunization

Not applicable

## Contact Management

### Education

Per case management

### Investigation

Not applicable

### Exclusion/Social Distancing

Follow guidelines for symptomatic contacts identified in high-risk individuals (Exclusion Periods for Food Handlers and Caregivers with Enteric Illness) and guidelines for individuals less than 5 years of age who are unable to implement good standards of personal hygiene, for example daycare centres and kindergartens).

Symptomatic contacts should avoid recreational water contact for at least 2 weeks after symptom resolution unless an alternate diagnosis is made.

### **Prophylaxis**

Not applicable

### **Immunization**

Not applicable

## **Outbreak Management**

Activate the local outbreak plan when an outbreak is declared.