

Cyclosporiasis

Disease Category: Enteric

Timeframe to follow-up: 1 week

<u>Signs and Symptoms</u>	• Water diarrhea possibly containing mucus and/or blood • Loss of appetite • Nausea • Fatigue • Abdominal cramping • Low-grade fever • May begin abruptly and last for weeks or months • May have waxing and waning patterns
<u>Incubation</u>	7 days after ingestion; range 2 - 14 days
<u>Case Classification</u>	Clinical criteria: Laboratory-confirmed cyclosporiasis shall be defined as the detection of Cyclospora organisms or DNA in stool, intestinal fluid/aspirate, or intestinal biopsy specimens. Confirmed: A case that meets the clinical description of at least one of the criteria for laboratory confirmation as described above. Probable: A case that meets the clinical description and that is epidemiologically linked to a confirmed case.
<u>Differential Diagnosis</u>	The differential diagnosis of Cyclospora infection includes other protozoal parasites including giardiasis, cryptosporidiosis, and Cystoisospora belli.
<u>Treatment</u>	Treatment for cyclosporiasis in immunocompetent adults consists of trimethoprim-sulfamethoxazole (TMP-SMX) twice daily for 7 to 10 days. In patients with immunosuppression, higher doses and/or longer courses of therapy may be needed.
<u>Duration</u>	Symptoms usually persist for more than 3 weeks
<u>Exposure</u>	Exposure occurs through ingestion of contaminated food or water and may also occur through contact with contaminated soil.
<u>Laboratory Testing</u>	Diagnosis is made by identifying oocytes in stool, intestinal fluid/aspirates, or intestinal biopsy specimens. Nevada State Public Health Laboratory can run gastrointestinal panels, NAAT to identify cyclospora. Local Health Authority can arrange testing if an outbreak is suspected OR for contacts: • https://www.cdc.gov/cyclosporiasis/hcp/clinical-guidance/index.html • https://www.mayocliniclabs.com/test-catalog/overview/81506
<u>Control of Contacts</u>	Disease does not have person-to-person contact and does not require any control measures of contacts
<u>Key areas of focus during investigation</u>	Travel history to endemic areas; food history specifically fresh produce, imported foods, untreated water; investigation for potential contaminated soil and poor sanitation.

Public Health Actions	Reports of Cyclosporiasis cases must be made to the Local Health Authority during the regular business hours of the health authority on the first working day following the identification of the case. Local Health Authority to notify Office of State Epidemiology (dpbhepi@health.nv.gov) or call 775-684-5911/775-400-0333 (after hours) if outbreak suspected. For individual confirmed or probable cases: • Confirm diagnosis, if possible • Identify potential exposures • Prepare a case report and submit to the Chief Medical Officer (through OSE) within 7 days after completing the case investigation • Identify potential outbreaks from common sources • Provide education about how to prevent transmission To the best of the local health authority's ability, each step of the investigation should be completed within one working day or in alignment with NAC 441A.
Key Partner Agencies	• Local health authorities • Environmental Health • Office of State Epidemiology • Medical providers and laboratories

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CYCLOSPORIASIS

I. DISEASE REPORTING

A. Legal Reporting Requirements

A report to the health authority may be made by telephone; telecopy (in the form prescribed by the health authority); or any form of electronic communication identified by the health authority, following the specified format and procedure. (1)

1. *Health Care Providers and Health Care Facilities*

Health providers and facilities must notify the health authority where provider is located within the first working day after identifying the case. (1) (2) (3)

2. *Laboratories*

Laboratories must notify the health authority within the first working day after identifying the case. (1) If the lab is located outside of Nevada, notify the Nevada Chief Medical Officer through the Office of State Epidemiology (OSE) within the same timeframe. (1) (4)

3. *Local Health Authority (LHA)*

LHA's must notify the Office of State Epidemiology (OSE) within 7 days after completing the case investigation. (5)

II. THE DISEASE AND ITS EPIDEMIOLOGY

A. Background

Cyclosporiasis is a foodborne, waterborne, and soil-transmitted parasitic cause of diarrheal illness caused by *Cyclospora cayetanensis*. It has a broad geographic distribution but is most frequently in Latin America, Egypt, sub-Saharan Africa, the Indian subcontinent, and Southeast Asia. In nonendemic regions, most cases are associated with international travel or ingestion of contaminated food. Foodborne outbreaks in the United States are often linked to imported produce. Humans are the only natural hosts. Risk factors for infection in endemic areas include contaminated water, food, soil, and poor sanitation. Infection may occur as a locally acquired illness, among travelers, or in patients with HIV/AIDS or other forms of immunosuppression. Infection can be asymptomatic; however this is more common in areas where it is endemic. (6)

B. Etiologic Agent

The etiologic agent of cyclosporiasis is *Cyclospora cayetanensis*, a coccidian protozoan. It is an obligate intracellular parasite that infects humans. Although multiple species of *Cyclospora* have been identified in nonhuman hosts, human infection is caused by *Cyclospora cayetanensis*. Humans are the only known natural hosts. oocytes are resistant to most disinfectants used in food and water processing and can remain viable for prolonged periods in cool, moist environments (Red Book) (6)

C. Description of Illness

Cyclospora infection is usually characterized by anorexia, nausea, flatulence, fatigue, abdominal cramping, water diarrhea, low-grade fever, and weight loss. Symptoms can begin abruptly and diarrhea may contain mucus and/or blood. The incubation period is

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typically 7 days after ingestion. Some patients experience a single self-limited episode, while others can have a prolonged waxing and waning course. Symptoms may last for weeks or months. Severe symptoms occur most often in young children, older adults, and immuno-compromised persons. Cyclospora infection can be asymptomatic specifically in endemic areas like Latin America, Africa, and Asia. (6)

D. Disease Burden in Nevada

Cyclosporiasis is not endemic to Nevada; case patterns in the U.S. are travel-associated and linked to contaminated produce. Cases and outbreaks increase during the spring and summer months, specifically May through August. (7) (8)

See the [Nevada Office of State Epidemiology Communicable Disease Dashboard](#) for Nevada specific data on Cyclosporiasis (Communicable Disease section).

E. Reservoirs

Humans are the only known natural hosts and reservoir for *Cyclospora cayetanensis*. (6)

F. Modes of Transmission

Transmission occurs through ingestion of *Cyclospora cayetanensis* oocysts in contaminated food (basil, cilantro, raspberries, sugar snap peas, and lettuce), water, and soil. Contaminated wastewater used to irrigate food may also contribute to transmission. Direct person-to-person transmission is not likely. (6)

G. Incubation Period

The median incubation period is about seven days following ingestion prior to onset symptoms (range: 2 to >14 days) (6)

H. Period of Communicability

Person to person transmission is not likely because oocysts passed in the stool are shed in a noninfective form and may require up to 1-2 weeks in favorable conditions in the environment to become infectious. (6)

I. Testing

Stool specimens are used for diagnosis of cyclosporiasis. Oocysts may be excreted intermittently and in small number, a single negative stool specimen does not rule out infection, and three or more specimens collected at 2-to-3-day intervals may be needed. Oocysts can be detected by microscopic examination using wet mounts or stained smears, including modified acid-fast stains or modified safranin stains. PCR testing, including commercial FDA approved enteric panels, is also available and is highly sensitive (9)

J. Treatment

Treatment for cyclosporiasis in immunocompetent adults consists of trimethoprim-sulfamethoxazole (TMP-SMX) twice daily for 7 to 10 days. In patients with immunosuppression, higher doses and/or longer courses of therapy may be needed. Nitazoxanide can be an alternative for patients with sulfa allergies. Persistent or recurrent Cyclosporiasis

symptoms after treatment may be due to ongoing infection, reinfection, or post-infectious irritable bowel syndrome, repeat stool examination be needed.

Provide most current treatment guidelines from [Red Book](#) to the healthcare provider or refer case to physician for proper treatment for cyclosporiasis

III. EPIDEMIOLOGIC CASE INVESTIGATION

The public health authority should begin investigating the case of cyclosporiasis, step by step, within one working day of notification or in alignment with [NAC 441A](#).

A. Step 1: Review relevant information about the disease.

1. *Review scientific information in [Control of Communicable Diseases Manual](#), most recent edition.*
2. *Review [Cyclosporiasis](#) most recent case definition (2010 CDC).*

B. Step 2: Begin investigating the case.

1. *Contact Reporting Source and/or Reported Case*

Upon receiving an initial case report, review lab test results and available clinical details and epidemiologic factors. Please make three attempts to contact the case (text and phone calls) on separate days, at different times of the day (morning, afternoon, late afternoon). Document all attempts to contact a reporting source and/or reported case, preferably in the “Encounters” tab of EpiTrax. Please use case report forms (CRF) to gather accurate information about the case. Focus on the key data elements listed above. Filling out an electronic version of the CRF in EpiTrax (called a Confidential Morbidity Report (CMR) in EpiTrax) is preferred. If used, the completed PDF version should be attached to the CMR in EpiTrax. The CRF should be completed within 7 days of completing the investigation of the case. (5)

C. Step 3: Identify potential sources of infection

The investigation focuses on exposures in the 14 days before onset. Ask about any travel to endemic areas and consumption of fresh produce, untreated water, or other potentially contaminated food/beverage. Persons to person transmission is not likely so the investigation should focus on foodborne, waterborne, and travel-related exposures. (10)

D. Step 4: Initiate control measures for case and/or for contacts (see Section IV – Section VI below).

E. Step 5: Provide Education and Prevention messaging to the case and/or contacts (see Section IX below).

IV. CONTROL OF CASE

Disease does not require any control measures of cases. Please provide education and prevention measures.

V. CONTROL OF CONTACTS

Disease does not have person-to-person contact and does not require any control measures of contacts. Standard precautions are recommended, contact precautions may also be recommended for diapered or incontinent cases (Red Book). Please provide education and prevention measures.

VI. CONTROL OF CARRIERS

Disease response does not require any carrier-specific control measures. Please provide education and prevention measures.

VII. MANAGEMENT OF SPECIAL SITUATIONS/OUTBREAK CONTROL

Coordinate with senior epidemiology staff to determine if an outbreak is occurring. If so, notify DPBH Environmental Health, local health authorities, or infection control, as appropriate.

VIII. PREVENTION

The investigator should reference the most recent disease specific public educational materials from the CDC. The [Nevada OSE website](#) also provides information about Cyclosporiasis. Include a bullet point list for prevention tips.

- Wash hands with soap and water before and after handling or preparing raw fruits and vegetables. (11)
- Wash all fruits and vegetables thoroughly under running water before eating, cutting, or cooking. (11)
- Fruits and vegetables that are labeled “prewashed” do not need to be washed again at home. (11)
- Scrub firm fruits and vegetables, such as melons and cucumbers, with a clean produce brush. (11)
- Cut away any damaged or bruised areas on fruits and vegetables before preparing and eating. (11)

- Refrigerate cut, peeled, or cooked fruits and vegetables as soon as possible (within two hours). (11)

IX. REFERENCES

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X. ACKNOWLEDGEMENTS

This document was developed based on the content and format of the disease investigation guidelines of several state and local health jurisdictions:

- Oregon Health Authority Investigative Guidelines
- Washington State Department of Health Reporting and Surveillance Guidelines
- Washoe County Health District Epidemiology and Communicable Disease Program Investigation of Communicable Disease Manual

The Nevada Office of State Epidemiology would like to acknowledge the work of these great partners.

XI. UPDATE LOG



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Chief Medical Officer

7/31/26

Chief Medical Officer Approval Date