

## AMEBIASIS

### REPORTING INFORMATION

- **Class B:** Report by the close of the next business day in which the case or suspected case presents and/or a positive laboratory result to the local public health department where the patient resides. If patient residence is unknown, report to the local public health department in which the reporting health care provider or laboratory is located.
- Reporting Form(s) and/or Mechanism:
  - The Ohio Disease Reporting System (ODRS) should be used to report lab findings to the Ohio Department of Health (ODH). For healthcare providers without access to ODRS, you may use the [Ohio Confidential Reportable Disease form](#) (HEA 3334).
  - The [Ohio Enteric Case Investigation Form](#) may be useful in the local health department follow-up of cases. Do not send this form to the Ohio Department of Health (ODH); information collected from the form should be entered into ODRS where fields are available and the form should be uploaded in Administration section of ODRS.
- Key fields for ODRS reporting include: specimen type (Intestinal Amebiasis: select from stool, tissue, ulcer scrapings; Extra-intestinal Amebiasis: select Extra-intestinal tissue), Test result: for extra-intestinal if antigen test was done select "Positive", sensitive occupation or attendee of daycare, sensitive occupation of household member, symptoms, travel history, exposure to water and contact information.

### AGENT

*Entamoeba histolytica*, a one-celled parasite. The parasite has 2 forms: a motile form, called the trophozoite, and a cyst form, responsible for the person-to-person transmission of infection.

#### Infectious dose

Low because the cyst is resistant to gastric acid. The cysts are also relatively chlorine resistant.

### CASE DEFINITION

#### Clinical Description

Infection of the large intestine by *Entamoeba histolytica* may result in an illness of variable severity ranging from mild, chronic diarrhea to fulminant dysentery. Infection also may be asymptomatic. Extraintestinal infection also can occur (e.g. hepatic abscess).

#### Laboratory Criteria for Diagnosis

##### Intestinal Amebiasis

- Demonstration of cysts or trophozoites of *E. histolytica* in stool *or*
- Demonstration of trophozoites in tissue biopsy or ulcer scrapings by culture or histopathology.

##### Extraintestinal Amebiasis

- Demonstration of *E. histolytica* trophozoites in extraintestinal tissue.

#### Case Classification

Suspect\*: A clinically compatible case that is not yet laboratory confirmed and is not epidemiologically linked to a confirmed case.

Probable\*: A clinically compatible case that is epidemiologically linked to a confirmed case.

Confirmed Intestinal Amebiasis: A clinically compatible illness that is laboratory confirmed.

Confirmed Extraintestinal Amebiasis: A parasitologically confirmed infection of extraintestinal tissue, *or* among symptomatic persons (with clinical or radiographic findings consistent with extraintestinal infection), demonstration of specific antibody against *E. histolytica* as measured by indirect hemagglutination or other reliable immunodiagnostic test (e.g. enzyme-linked immunosorbent assay [ELISA]).

Not a Case: This status will not generally be used when reporting a case, but may be used to reclassify a report if investigation revealed that it was not a case.

**Comments:**

Asymptomatic intestinal carriage of *E. histolytica* should not be reported. Among asymptomatic persons, a positive serologic test does not necessarily indicate extraintestinal amebiasis.

*E. histolytica/dispar* complex is NOT a confirmatory lab result. Further testing must be done to differentiate *E. histolytica* from *E. dispar*.

\* This case classification can be used for initial reporting purposes to the Ohio Department of Health (ODH) as the Centers for Disease Control and Prevention (CDC) has not developed a classification.

**SIGNS AND SYMPTOMS**

Intestinal amebiasis might manifest as abdominal pain, mild to severe diarrhea (stools might contain blood or mucus), fever, drowsiness and ulcers. Acute diarrhea is the most common clinical condition and can develop into chronic, intermittent episodes of gastrointestinal symptoms. Extraintestinal amebiasis often presents with no symptoms or non-specific ones. The most common complication is liver abscess. About 40% of cases with amebic liver abscess have had no history of bowel involvement. Spread to other organs, including brain, lung, pericardium and genitourinary tract, is rare but important because of its life-threatening potential.

**DIAGNOSIS**

See case definition. Intestinal infection depends on identifying *E. histolytica* (cysts or trophozoites) in the stool. *E. histolytica* is excreted intermittently, and a single stool examination detects about 33% of infections. To increase detection, submission of three specimens taken 48 hours apart is recommended. Stool examination, using an O&P (ova and parasite) stool kit, is available at ODH Laboratory.

**EPIDEMIOLOGY**

**Source**

Humans are the only reservoir of *E. histolytica*. Cysts passed in the feces can survive in moist environmental conditions from weeks to months. Trophozoites are also usually found in the stools of persons with diarrhea but are not infective due to their high susceptibility to gastric acid.

### **Occurrence**

Worldwide. Prevalence is higher in areas with crowding, poor housing and sanitation, improper hygiene and tropical climate. In the United States, epidemics are rare, and only small clusters are reported from institutions and households. Persons at highest risk are immigrants or travelers from endemic areas, those in institutions and men who have sex with men.

### **Mode of Transmission**

Mainly by ingestion of food or water contaminated with feces containing cysts and by contact with contaminated hands or objects. Person-to-person transmission can occur via oral-anal sexual contact. Persons with acute amebic dysentery pass the fragile trophozoite, which is unlikely to infect others.

### **Period of Communicability**

Communicable during the period of passing cysts of *E. histolytica*, which can continue for years if infection is untreated.

### **Incubation Period**

Usually 2-4 weeks, but variable from a few days to several months or years.

## **PUBLIC HEALTH MANAGEMENT**

### **Case**

#### Investigation

All cases reported to the health department should initially be followed up with a telephone call to make sure the case meets the case definition and, if so, to obtain demographic and epidemiologic data. Unless the case is employed in a sensitive occupation, is a child care center attendee or is part of an outbreak, no further work-up is recommended.

#### Treatment

Different drugs are used in combination depending on the severity and site of the amebiasis. An updated therapeutic guide should be consulted for details. A typical treatment plan is metronidazole or tinidazole followed by a course of a luminal amebicide (iodoquinol or paromomycin).

#### Isolation and Follow-up Specimens

Ohio Administrative Code (OAC) 3701-3-13 (A) states:

"Amebiasis: a person with amebiasis who attends a child care center or works in a sensitive occupation shall be excluded from the child care center or work in the sensitive occupation and may return after the diarrhea has ceased and three follow-up stool specimens are negative for *Entamoeba histolytica*."

Submit three stool specimens, collected within a 10-day period, using the ova and parasite stool kit. Obtain the first specimen at least 72 hours after cessation of diarrhea or, if being treated, at least 72 hours after completion of antimicrobial therapy. Obtain the remaining specimens 48 hours apart.

The Centers for Disease Control and Prevention (CDC) recommends persons who have had diarrhea do not swim for two weeks after diarrhea ceases in order to prevent spread of the disease.

### Public Health Significance

Ohio food service operation rules do not allow food preparation by persons who are infected with a disease in a communicable form that can be transmitted by foods. For additional information, refer to Ohio Administrative Code (OAC) Chapter 3717-1 (Ohio Uniform Food Safety Code) Section 02.1, Management and Personnel: Employee Health.

### **Contacts**

Asymptomatic household contacts of persons in sensitive occupations should be tested and treated if positive to prevent reinfection of the case. In institutions where the infection is endemic and difficult to control (such as mental institutions), testing is recommended only for symptomatic persons. Screening asymptomatic contacts in institutions is not warranted.

### **Prevention and Control**

Educate the general public in personal hygiene, particularly thorough hand washing with soap and warm water after using the toilet and before handling food. Avoid anal-oral sexual contact.

### **Special Note**

*Entamoeba coli*, *Entamoeba dispar* and *Entamoeba hartmanni* are generally considered nonpathogenic. The above recommendations do not apply to *Entamoeba coli*, *Entamoeba dispar* and *Entamoeba hartmanni* infections.

**What is amebiasis?**

Amebiasis is a disease caused by a microscopic parasite (amoeba) called *Entamoeba histolytica*. This parasite is found in the United States and around the world.

**Who is at risk for amebiasis?**

Anyone can get amebiasis, but it occurs more often in people who live in tropical or subtropical areas with poor sanitation. In the United States, amebiasis is most often found in travelers to and immigrants from these areas as well as individuals who live in institutions that have poor sanitary conditions. Men who have sex with men can also become infected.

**How can I become infected with *E. histolytica*?**

You can become infected by: putting anything into your mouth that has touched the stool of a person who is infected with *E. histolytica*; swallowing something, such as water or food that is contaminated with *E. histolytica*; or touching and bringing to your mouth *E. histolytica* cysts (eggs) picked up from surfaces that are contaminated with *E. histolytica*.

**What are the symptoms of amebiasis?**

Only about 10% to 20% of people who are infected with *E. histolytica* become sick from the infection. Those people who do become sick usually develop only mild intestinal symptoms, which can include loose or watery stools, stomach pain and stomach cramping.

Amebic dysentery is a severe form of amebiasis associated with stomach pain, bloody stools and fever. Rarely, *E. histolytica* spreads outside the intestines to the liver and forms an abscess. Even less commonly, it spreads to other parts of the body, such as the lungs or brain.

**If I swallowed *E. histolytica*, how quickly would I become sick?**

Only about 10% to 20% of people who are infected with *E. histolytica* become sick from the infection. Those people who do become sick usually develop symptoms, within two to four weeks, but it can be shorter or longer.

**For how long can an infected person carry this parasite?**

Some people with amebiasis can carry the parasite for weeks to years, often without symptoms.

**What should I do if I think I have amebiasis?**

See your health care provider. Other infectious organisms, such as other parasites or bacteria, can cause similar symptoms.

**Where are parasites that cause amebiasis found?**

Infected people are the main source of the parasite. Fecal material from infected people can contaminate water or food, which then serves as a vehicle to infect others. Primates also become infected but are not considered a major source of infections for humans.

**How is amebiasis diagnosed?**

Your healthcare provider will ask you to submit stool samples. Because *E. histolytica* can be difficult to diagnose, you might need to submit several stool specimens taken over several days.

A blood test is also available but is only recommended when your health care provider thinks that your infection may have spread beyond the intestines (gut) to some other organ of your body, such as the liver.

**What is the treatment for amebiasis?**

Several antibiotics are available to treat amebiasis. Treatment must be prescribed by a physician and might require more than one kind of medication.

**Should an infected person be excluded from work or school?**

A person with amebiasis who attends a child care center or works in a sensitive occupation shall be excluded from the child care center or work in the sensitive occupation and may return after the diarrhea has ceased and three follow-up stool specimens are negative for *Entamoeba histolytica*. (See Ohio Administrative Code 3701-3-13.)

**Should I be concerned about spreading infection to the rest of my household?**

Yes. However, the risk of spreading infection is low if the infected person is treated with antibiotics and practices good personal hygiene. This includes thorough hand washing with soap and water before handling food, after changing diapers and after each toilet visit. Proper disposal of sewage is also important. Avoid anal-oral sexual contact.

The following intestinal amoebae do not make people sick and therefore are called "nonpathogenic:"

- *Chilomastix mesnili*
- *Endolimax nana*
- *Entamoeba coli*
- *Entamoeba dispar*
- *Entamoeba hartmanni*
- *Entamoeba polecki*
- *Iodamoeba buetschlii*

**Where do these amoebae live in the body?**

These amoebae are found only in the intestine and do not harm the body.

**How did they get there?**

The presence of one or more of them in a person's stool indicates that the person swallowed something, perhaps food or water, which was contaminated with stool that contained the amoebae. However, people infected with them may also have been exposed through contaminated stool to organisms that could make people sick.

**I have not been feeling well. Are these amoebae the cause of my illness?**

If you are having symptoms, such as diarrhea, the cause of your illness is not the amoebae. You and your healthcare provider should look for another cause. The cause may be infectious (i.e., infection with a parasite, virus or bacterium) or noninfectious (e.g., irritable bowel syndrome).

**I have a weak immune system. Am I at greater risk of developing illness from these amoebae?**

No. Studies have shown that these amoebae do not make people sick, even those who have a weakened immune system. Persons with a weakened immune system include persons with HIV/AIDS, people taking certain types of chemotherapy and people who have recently received an organ transplant.

**How long do these amoebae stay in my body?**

These amoebae can remain in a person's intestines for weeks, months or years.

**Should I be treated for these amoebae?**

No. Because these amoebae do not harm the body, they do not require treatment.

This fact sheet is for information only and is not meant to be used for self-diagnosis or as a substitute for consultation with a healthcare provider. If you have any questions about the disease described above or think that you may have a parasitic infection, consult a healthcare provider.