

## Entamoeba histolytica

*Entamoeba histolytica* is a protozoan that causes the disease amebiasis. The life cycle of the organism includes an active trophozoite stage and a cyst stage. The trophozoite stage exists only in hosts and in fresh loose stool. Cysts are capable of surviving outside the host in water, soil, and foods for several months. When cysts are ingested in contaminated food or water, they exist and release trophozoites into the digestive tract. Infection can cause bloody diarrhea or result in a liver abscess. Inside the digestive tract, trophozoites are capable of invading the intestinal wall causing flask-shaped ulcers and can reach the bloodstream. From there, the protozoa can reach different organs including the liver. A common outcome of this invasion is a liver abscess that has the appearance of anchovy paste and can cause severe right upper quadrant pain. This organism can be identified via visualization of ingested red blood cells in the cell cytoplasm or visualizing cysts in the stool with four nuclei, which are characteristic of *Entamoeba histolytica*. Treatment includes metronidazole and iodoquinol.



PLAY PICMONIC

### Pathophysiology

#### Protozoa

##### Propeller-protozoa

*Entamoeba histolytica* is a protozoan, which is a unicellular eukaryotic organism.

#### Amebiasis

##### Amoeba

*Entamoeba histolytica* is a protozoan that causes the disease amebiasis. Symptoms include bloody diarrhea or a liver abscess.

#### Ingestion of Cysts in Food and Water

##### Sisters in water

Cysts are capable of surviving outside the host in water, soil and foods for several months. The disease is contracted when cysts are ingested in contaminated food or water.

### Signs and Symptoms

#### Bloody Diarrhea

##### Red Toilet

Inside the digestive tract, *Entamoeba* trophozoites are capable of invading the intestinal wall and can cause severe bloody diarrhea.

#### Flask-Shaped Ulcer

##### Ulcer Flasks

When these protozoa invade the intestinal wall, they create characteristic flask-shaped ulcers that can help with diagnosis.

#### Liver Abscess

##### Liver and Abscess-guy

After invasions of the intestinal wall, *Entamoeba* can enter the bloodstream and reach different organs, including the liver. A common outcome of this invasion is a liver abscess.

## **Anchovy Paste**

[Anchovy-cans](#)

Liver abscesses caused by *Entamoeba histolytica* have a characteristic appearance that resembles anchovy paste.

## **RUQ Pain**

[RUQ Pain-bolts](#)

*Entamoeba histolytica* can cause severe right upper quadrant abdominal pain due to invasion of the intestinal wall and formation of a liver abscess.

## **Diagnosis**

### **RBCs in Cytoplasm of Trophozoite**

[RBCs in Trophozoite](#)

The trophozoites of *Entamoeba histolytica* have a characteristic appearance due to ingestion of red blood cells in the cell cytoplasm. Visualization of trophozoites with red blood cells can help diagnose amebiasis.

### **Cyst With Four Nuclei**

[Sisters with \(4\) Fork nuclear-signs](#)

The cyst form has a characteristic appearance with four nuclei, which can help with identification of the organism.

## **Treatment**

### **Metronidazole**

[Metro-knight](#)

Treatment for amebiasis includes metronidazole, which alters oxidative patterns within the protozoa, resulting in death.

### **Iodoquinol**

[Eye-dodo-queen](#)

Iodoquinol is a quinoline derivative that can be used in the treatment of amebiasis. This drug is poorly absorbed from the gastrointestinal tract and remains in the intestinal lumen, where it acts by chelating ferrous ions essential for protozoan metabolism.