

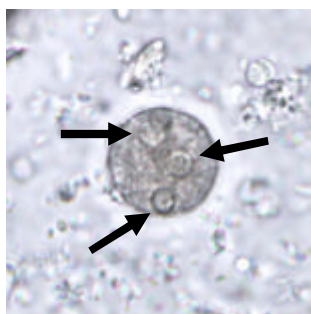
Entamoeba histolytica and *Entamoeba dispar*

Basic guidelines

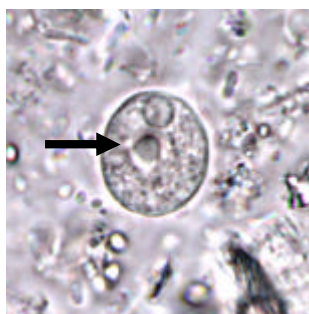
- A. Multiple stool samples (at least 3) should be tested before a negative result is reported.
- B. To maximize recovery of cysts, stool samples in formalin should be concentrated prior to microscopic examination (e.g., 10 min at 500 × g when using the formalin-ethyl acetate concentration procedure). **Exception:** Specimens to be used for EIA or rapid cartridge assays should NOT be concentrated because antigens are lost during the procedure!
- C. Choice of diagnostic techniques depends on available equipment and reagents, experience, and considerations of time and cost.

1. Wet mount

Entamoeba histolytica and *Entamoeba dispar* are morphologically identical species. In bright-field microscopy, *Entamoeba histolytica/dispar* cysts are spherical and usually measure 12 to 15 µm (range may be 10 to 20 µm). A mature cyst has 4 nuclei while an immature cyst may contain only 1 to 3 nuclei. Peripheral chromatin is fine, uniform, and evenly distributed. Elongated, chromatoid bodies with bluntly rounded ends may sometimes be found. Glycogen can be diffuse or absent in mature cysts while clumped in immature cysts. Wet mount preparations and trichrome stained smears of stool specimens are the recommended procedures for identification of *E. histolytica/dispar*.



Entamoeba histolytica/dispar cyst with three visible nuclei (arrows).



Entamoeba histolytica/dispar cyst with one visible nucleus and a glycogen vacuole (arrow).



Entamoeba histolytica/dispar cyst in iodine with one visible nucleus and a glycogen vacuole (arrow).

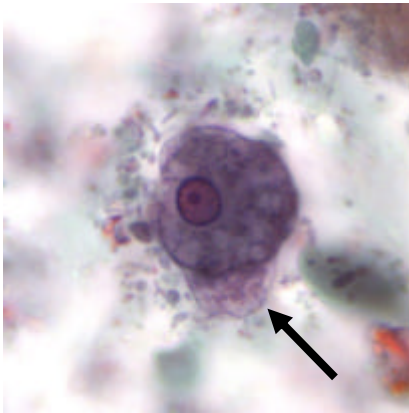


Entamoeba histolytica/dispar cyst in iodine with two visible nuclei and a chromatoid body (arrow).

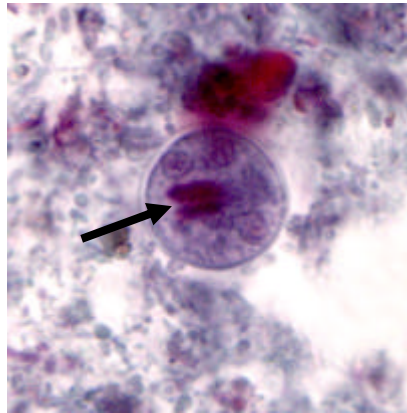
Laboratory diagnosis of amebiasis

2. Trichrome stain

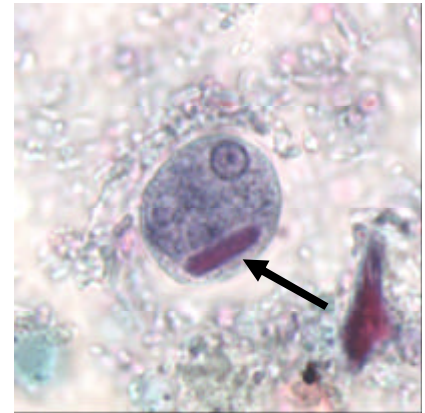
Trophozoites in trichrome stained smears usually measure 15 to 20 μm (range may be 10 to 60 μm). Presence of one nucleus with evenly arranged chromatin on the nuclear membrane and a small, centrally located karyosome are morphological features of trophozoites. The cytoplasm is finely granular and few ingested bacteria or debris may be present. Presence of red blood cells within the cytoplasm of trophozoites is a diagnostic feature for the identification of *E. histolytica*. Ingested RBCs are not frequently seen; in the absence of this diagnostic characteristic *E. histolytica/dispar* should be reported. Cysts usually measure 12 to 15 μm (range 10 to 20 μm) and have 1 to 4 nuclei. Chromatoid bodies with bluntly rounded ends may also be present.



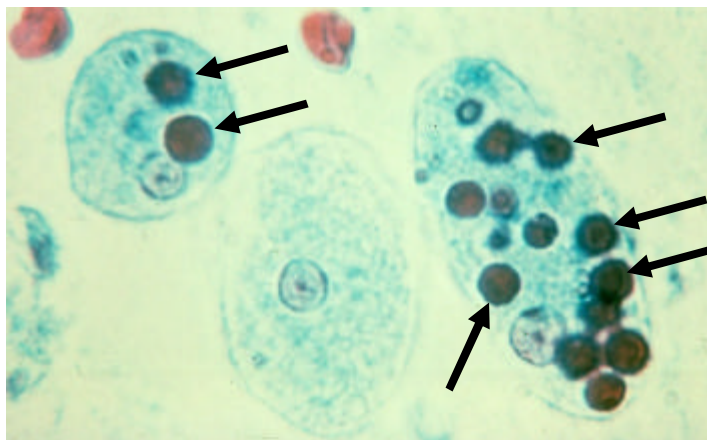
Entamoeba histolytica/dispar trophozoite with a progressive pseudopod (arrow)



Entamoeba histolytica/dispar cyst showing chromatoid bodies with bluntly rounded ends (arrow)



Entamoeba histolytica/dispar cyst showing a chromatoid body with bluntly rounded ends (arrow)



Three *Entamoeba histolytica* trophozoites, two with ingested RBCs (arrows).

3. Enzyme immunoassays (EIA)

Immunoassay kits are commercially available that detect *Entamoeba histolytica/dispar* or that differentiate *E. histolytica* from *E. dispar*. Currently, these tests require the use of fresh or frozen stool specimens and **cannot** be used with preserved specimens.



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