

Intestinal (Non-Pathogenic) Amebae

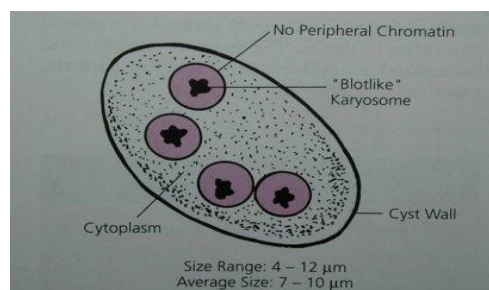
Several species of amebae are capable of colonizing the human gastrointestinal tract but, in contrast to *Entamoeba histolytica*, are not considered pathogenic. The nonpathogenic intestinal amebae include several *Entamoeba* species (*E. coli*, *E. hartmanni*, and *E. polecki*), *Endolimax nana*. *Entamoeba* species in the *E. histolytica* species complex are discussed under [Amebiasis](#).

Epidemiology

These amebae are found worldwide. Prevalence is highest in areas with inadequate sanitation. A number of [protozoa](#) in the ameba group inhabit human gastrointestinal tract but are not believed to cause significant disease and are often referred to as the nonpathogenic amebas. The identification of these organisms in the stool is significant for several reasons. Firstly, it indicates exposure to fecal contamination with inherent risk of exposure to other [pathogenic organisms](#). Also, the various stages found in microscopic preparations may provide diagnostic challenges to distinguish between one of these organisms and [Entamoeba histolytica](#), a tissue-invasive ameba.

***Endolimax nana*:**

***E. nana* cysts.**



hogenic) Amebae

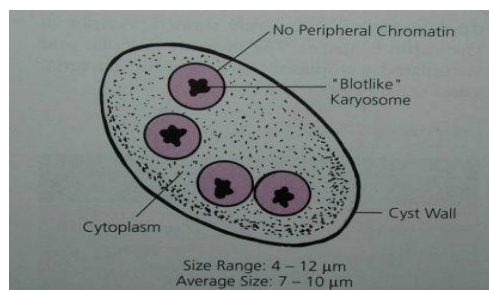
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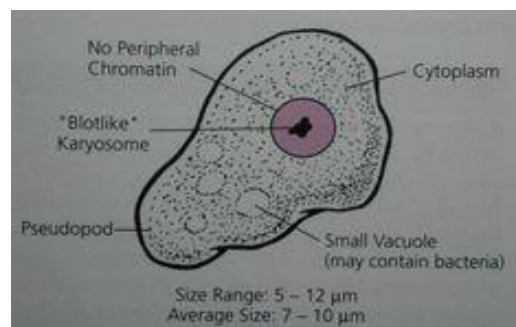
***Endolimax nana*:**

***E. nana* cysts.**



Cysts of *Endolimax nana* vary from spherical to ellipsoidal in shape and measure 5–10 μm . Mature cysts have four small nuclei with large, usually centrally located karyosomes and no peripheral chromatin. The cytoplasm may lack chromatoid bodies.

***E. nana* trophozoites.**



Endolimax nana trophozoites measure 6–12 μm and have a single nucleus with a characteristically large, irregularly shaped, blot-like karyosome. The nucleus lacks peripheral chromatin. Their cytoplasm is granular and often highly vacuolated and may contain inclusions of bacteria.

***Entamoeba coli*:**

***E. coli* cysts.**

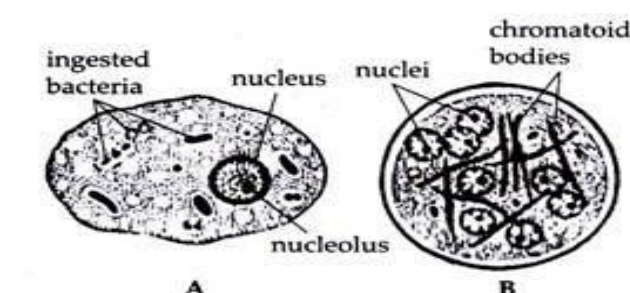
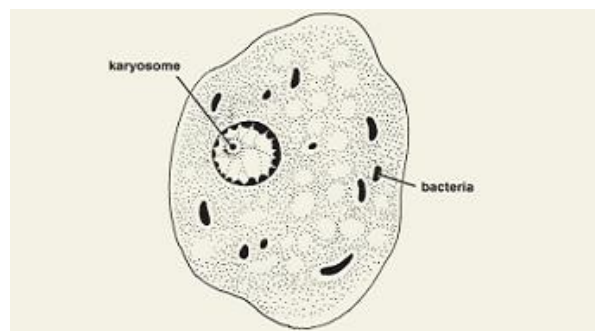


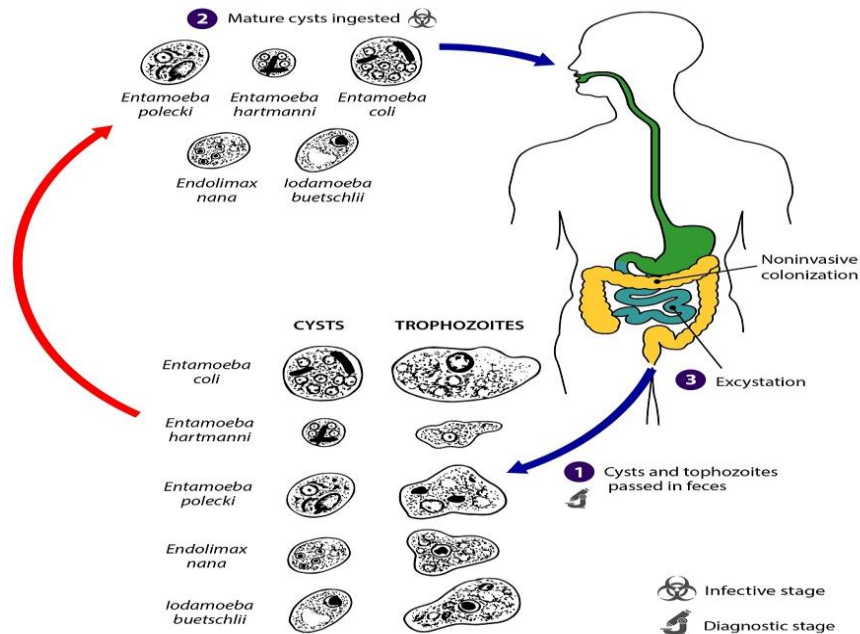
Fig. 1.7 : *Entamoeba coli*. A. Mature trophozoite, B. Octonucleate cyst.

Cysts of *Entamoeba coli* are usually spherical but may be elongated and measure 10–35 μm . Mature cysts typically have 8 nuclei but may have as many as 16 or more. *Entamoeba coli* is the only *Entamoeba* species found in humans that has more than four nuclei in the cyst stage. Karyosomes may be compact or diffuse and are usually eccentrically located. Peripheral chromatin is present and is often coarse, granular,. Chromatoid bodies are seen less frequently than in *E. histolytica*. When present, they are usually splinter like with pointed ends.

***E. coli* trophozoites.**

Trophozoites of *Entamoeba coli* usually measure 15–50 μm . The trophozoites have a single nucleus with a characteristically The cytoplasm is usually coarsely granular and vacuolated (often described as “dirty” cytoplasm). Pseudopodia may be seen and are often short and blunt





Entamoeba coli, and *Iodamoeba buetschlii* are generally considered nonpathogenic and reside in the lumen of the large intestine in the human host. Both cysts and trophozoites of these species are passed in stool and are considered diagnostic

1-. Cysts are typically found in formed stool, whereas trophozoites are typically found in diarrheal stool. Intestinal colonization with nonpathogenic amebae occurs after ingestion of mature cysts in fecally contaminated food, water, or fomites

2-. Excystation occurs in the small intestine

3-; and trophozoites are released, which migrate to the large intestine. The trophozoites multiply by binary fission and produce cysts, and both stages are passed in the feces .

4-Because of the protection conferred by their cell walls, the cysts can survive days to weeks in the external environment and are responsible for transmission. Trophozoites passed in the stool are rapidly destroyed once outside the body and, if ingested, would not survive exposure to the gastric environment.

Hosts

Humans are considered the main host for all of the discussed species except for *Entamoeba polecki*, which is usually associated with primates and swine.

Clinical Presentation

None of these amebae cause symptomatic disease in humans; colonization is noninvasive. However, the presence of trophozoites or cysts of nonpathogenic amebae in stool indicates that the person from whom the specimen was collected had fecal exposure.