**Aslamalaikum mam**

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**Stay safe mam from corona..**

**(Q no 1)**

**Ascariasis=**

**is a disease caused by the parasitic**[**roundworm**](https://en.m.wikipedia.org/wiki/Roundworm)[**Ascaris lumbricoides**](https://en.m.wikipedia.org/wiki/Ascaris_lumbricoides)**.**[**[1]**](https://en.m.wikipedia.org/wiki/Ascariasis#cite_note-Dold2011-1)**Infections have no symptoms in more than 85% of cases, especially if the number of worms is small.**[**[1]**](https://en.m.wikipedia.org/wiki/Ascariasis#cite_note-Dold2011-1)**Symptoms increase with the number of worms present and may include**[**shortness of breath**](https://en.m.wikipedia.org/wiki/Shortness_of_breath)**and fever in the beginning of the disease.**[**[1]**](https://en.m.wikipedia.org/wiki/Ascariasis#cite_note-Dold2011-1)**These may be followed by symptoms of abdominal swelling, abdominal pain, and**[**diarrhea**](https://en.m.wikipedia.org/wiki/Diarrhea)**.**[**[1]**](https://en.m.wikipedia.org/wiki/Ascariasis#cite_note-Dold2011-1)**Children are most commonly affected, and in this age group the infection may also cause poor weight gain,**[**malnutrition**](https://en.m.wikipedia.org/wiki/Malnutrition)**, and learning problems**.

**Ascariasis, infection of humans and other mammals caused by intestinal**[**roundworms**](https://www.britannica.com/animal/nematode)**of the genus Ascaris. In humans, ascariasis typically is caused by A. lumbricoides; the large**[**roundworm**](https://www.britannica.com/animal/nematode)**of pigs, A. suum, can also cause**[**illness**](https://www.britannica.com/science/disease)**in humans. Although persons infected with Ascaris worms often are asymptomatic, heavy infestation can cause severe complications, particularly in children, who may experience**[**malnutrition**](https://www.britannica.com/science/malnutrition)**, growth stunting, or**[**intestinal obstruction**](https://www.britannica.com/science/intestinal-obstruction)**. Ascariasis exists worldwide, affecting an estimated 807 million to 1.2 billion persons. It is most common in children, especially those living in rural and impoverished**[**communities**](https://www.merriam-webster.com/dictionary/communities)**.**

**In humans, ascariasis involving A. lumbricoides develops following the ingestion of fertilized eggs that have contaminated foods or soil. In the**[**small intestine**](https://www.britannica.com/science/small-intestine)**the larvae are liberated and migrate through the intestinal wall, reaching the**[**liver**](https://www.britannica.com/science/liver)**and then the**[**lungs**](https://www.britannica.com/science/lung)**, where they may produce a host sensitization that results in lung**[**inflammation**](https://www.britannica.com/science/inflammation)**and fluid retention. About 10 to 14 days later, the larvae pass through the alveolar walls in the airways of the lungs, migrate up the bronchi, and are swallowed. Returned to the small intestine, the larvae mature into egg-producing worms, which grow to some 15 to 35 cm (6 to 14 inches) in length. The adult worms can survive in the small intestine for 10 to 24 months. Males and females mate, resulting in the production of**[**copious**](https://www.merriam-webster.com/dictionary/copious)**numbers of eggs—a single adult female can lay more than 200,000 eggs in one day. The eggs are excreted in human**[**feces**](https://www.britannica.com/science/feces)**, beginning the infective cycle anew. Female worms can lay both fertilized and unfertilized eggs; only the former, once shed in human feces, are capable causing infection in humans.**

**For some individuals, the first sign of ascariasis is the presence of a live**[**worm**](https://www.britannica.com/animal/worm)**in the feces. Cough,**[**fever**](https://www.britannica.com/science/fever)**, and abdominal discomfort can also occur. Abdominal pain may be a sign of severe infection..**

**The sanitary disposal of human excreta is the most-important preventive measure. Other means of prevention include hand-washing prior to handling food and thorough washing and cooking of raw vegetables. Treatment is by the use of**[**anthelmintic drugs**](https://www.britannica.com/science/anthelmintic)**, including mebendazole and pyrantel pamoate…**

**(Q no 2)=**

**Life cycle of enterobius vermicularis=**

Enterohius vermicularis (Oxyuris vermicularis) is commonly called human pinworm. It grows in human caecum, colon and appendix. The female worms are longer than the male. Its terminal mouth is bounded by three lips like structure and a pair of cephahc expansions of cuticle. The males have a curved tail and a single penial spicule in the cloaca (fig. 9.24).

i.e. it completes its life cycle in one host. Copulation takes place in human colons. During night time, the female crawl out of the anus of the human host for egg laying. The female worm releases near the anus of the human body spreading their eggs in the adjacent parts of the host and on the under garments.

[These eggs contain the rhabditiform larva. The eggs are ingested by the same or other hosts with contaminated food and drinks or directly by contaminated fingers and fingernails. The egg shell is digested in the duodenum of the host and the larvae are released. The larvae migrate to the large intestine of the host and grow in size.](https://www.biologydiscussion.com/wp-content/uploads/2014/09/clip_image00221.jpg)

[They undergo four moults and in about two month’s time grow into adults. The disease caused by pinworm is known as oxyuriasis. The common symptoms of the disease include loss of appetite, itching of anal parts, restlessness, diarrhea, and inflammation of rectum.](https://www.biologydiscussion.com/wp-content/uploads/2014/09/clip_image00221.jpg)

### **Enterobius vermicularis**

Enterobius vermicularis is a nematode commonly found in the tropics. Although Alemantry track infection  is common, occasional reports exist of its occurrence in the endometrium, Fallopain tube, and other sites. Most often the eggs of E. vermicularis occur as a contaminant in vaginal pool material, especially among women with poor personal hygiene. These eggs are 50–60 μm by 20–25 μm. They are flattened on one side). The shell is double-walled and smooth. Within the egg, an embryo can often be recognized. Only rarely may the larvae be seen in the vegnal smere

**Q no 3**

**Transmission and life cycle of entamoeb histology**

## **Causal Agent**

Several protozoan species in the genus Entamoeba colonize humans, but not all of them are associated with disease. Entamoeba histolytica is well recognized as a pathogenic ameba, associated with intestinal and extraintestinal infections. The other species are important because they may be confused with E. histolytica in diagnostic investigations.

Cysts and trophozoites are passed in feces (1). Cysts are typically found in formed stool, whereas trophozoites are typically found in diarrheal stool. Infection by Entamoeba histolytica occurs by ingestion of mature cysts (2) in fecally contaminated food, water, or hands. Excystation (3) occurs in the small intestine and trophozoites (4) are released, which migrate to the large intestine. The trophozoites multiply by binary fission and produce cysts (5), and both stages are passed in the feces (1). Because of the protection conferred by their 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. In many cases, the trophozoites remain confined to the intestinal lumen (A: noninvasive infection) of individuals who are asymptomatic carriers, passing cysts in their stool. In some patients the trophozoites invade the intestinal mucosa (B: intestinal disease), or, : intestinal disease), or, through the bloodstream, extraintestinal sites such as the liver, brain, and lungs (C: extraintestinal disease), with resultant pathologic manifestations. It has been established that the invasive and noninvasive forms represent two separate species, respectively E. histolytica and E. dispar. These two species are morphologically indistinguishable unless E. histolytica is observed with ingested red blood cells (erythrophagocystosis). Transmission can also occur through exposure to fecal matter during sexual contact (in which case not only cysts, but also trophozoites could prove infective).

## [**Life Cycle of Parasites**](https://www.sciencedirect.com/science/article/pii/B9780080552323602326)

### **Entamoeba histolytica**

entamoeba histolytica infects up to 10% of the world's population, resulting in morbidity and mortality second only to that of malaria and shistosomiasis. Entamoeba histolitica causes an amebiasis, popularly called "Montezuma's revenge," among travelers. This condition is characterized by severe dysentry, usually without fever. Ingestion of entamoeba histolytics usually is a result of fecal-contaminated food, water, or hands. Passage of the cysts occurs in the small intestine, from wheretrophozoites migrate to the large intestine where they multiply by binary fission and produce more cysts. These are then passed in the feces. The cysts can survive days to weeks in the external environment. Asymptomatic passers of cysts retain trophozotics in the intestinal lumen. In some instances, the trophozoites can penetrate the intestinal mucosa and invade the liver, brain, or lungs. Cysts may also be passed through sexual contact.

Entamoeba histolytica is an enteric protozoan parasite with worldwide distribution. It is responsible for amoebic dysentery (bloody diarrhea) and invasive extraintestinal amebiasis (such as liver abscess, peritonitis, pleuropulmonary abscess). Other species of Entamoeba; Entamoeba hartmanii, Entamoeba coli, and Entamoeba dispar do not cause diseases but their trophozoite is difficult to distinguish from those of E.histolytica by light.

**Q no 4=**

## **How to diagnose triposoma crusi in laboratory**

An adult (57 months), male, pigtailed macaque (Macaca nemestrina) was screened for an AIDS-related research project and found to be positive on a B-cell lymphocyte culture for trypanosomes. Characterization of the trypanosome was done by using hemocultures, serology, and molecular techniques. Nucleic-acid amplification and sequencing of the nuclear repetitive sequence, kinetoplast DNA, and a fragment of the small subunit RNA gene confirmed that the trypanosome isolated was Trypanosoma cruzi and not T. rangeli, the only other trypanosome known to infect mammals in the New World. This represents the first naturally occurring case of Chagas' disease (American trypanosomiasis) in M. nemestrina, an Old World macaque, and may present an opportunity for development of an animal model of this human disease. The presence of under-recognized but enzootic T. cruzi infection in colony-raised M. nemestrina may have a significant impact on research programs, mandating effective screening of high-risk animals prior to protocol assignment.

During the acute phase of infection, parasites may be seen circulating in the blood. The diagnosis of Chagas disease can be made by observation of the parasite in a blood smear by microscopic examination. A thick and thin blood smear are made and stained for visualization of parasites.

Diagnosis of chronic Chagas disease is made after consideration of the patient’s clinical findings, as well as by the likelihood of being infected, such as having lived in a country where Chagas disease is common. Diagnosis is generally made by testing for parasite specific antibodies.

Treatment for Chagas disease is recommended for people diagnosed early in the course of infection (acute phase), babies with congenital infection, and for those with suppressed immune systems. Many patients with chronic infection may also benefit from treatment.

Patients should consult with their primary health-care provider. Some patients may be referred to a specialist, such as a cardiologist, gastroenterologist, or infectious disease specialist.

Your health-care provider can talk with CDC staff about treatment options for Chagas disease.

**Q no 5=**

***Leishmania***  is a genes of trypanosomes that are responsible for the disease  They are spread by sandflies of the genus phlebes in the old world, and of the genus *Lutzomia* in the new world. At least 93 sandfly species are proven or probable vectors worldwide Their primary hosts are vertibrates; *Leishmania* commonly infects hyrxea, canidas, rodonts, and humains.

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| **Species** |
| [*L. aethiopica*](https://en.m.wikipedia.org/wiki/Leishmania_aethiopica)[*L. amazonensis*](https://en.m.wikipedia.org/wiki/Leishmania_amazonensis)[*L. arabica*](https://en.m.wikipedia.org/w/index.php?title=Leishmania_arabica&action=edit&redlink=1)[*L. archibaldi*](https://en.m.wikipedia.org/w/index.php?title=Leishmania_archibaldi&action=edit&redlink=1) (starus species)[*L. aristedesi*](https://en.m.wikipedia.org/w/index.php?title=Leishmania_aristedesi&action=edit&redlink=1) (status disputed)[*L. (Viannia) braziliensis*](https://en.m.wikipedia.org/wiki/Leishmania_braziliensis)[*L. chagasi*](https://en.m.wikipedia.org/wiki/Leishmania_chagasi) (syn. *L. infantum*)[*L. donovani*](https://en.m.wikipedia.org/wiki/Leishmania_donovani)[*L. (Mundinia) enriettii*](https://en.m.wikipedia.org/w/index.php?title=Leishmania_enriettii&action=edit&redlink=1)[*L. forattinii*](https://en.m.wikipedia.org/w/index.php?title=Leishmania_forattinii&action=edit&redlink=1) (status disputed)[*L. garnhami*](https://en.m.wikipedia.org/w/index.php?title=Leishmania_garnhami&action=edit&redlink=1) (status disputed)[*L. gerbili*](https://en.m.wikipedia.org/w/index.php?title=Leishmania_gerbili&action=edit&redlink=1)[*L. (Viannia) guyanensis*](https://en.m.wikipedia.org/w/index.php?title=Leishmania_guyanensis&action=edit&redlink=1)[*L. infantum*](https://en.m.wikipedia.org/wiki/Leishmania_infantum)[*L. killicki*](https://en.m.wikipedia.org/w/index.php?title=Leishmania_killicki&action=edit&redlink=1) (status disputed)[*L. (Viannia) lainsoni*](https://en.m.wikipedia.org/w/index.php?title=Leishmania_lainsoni&action=edit&redlink=1)[*L. major*](https://en.m.wikipedia.org/wiki/Leishmania_major)[*L. (Mundinia) macropodum*](https://en.m.wikipedia.org/w/index.php?title=Leishmania_macropodum&action=edit&redlink=1)[*L. (Mundinia) martiniquensi*](https://en.m.wikipedia.org/w/index.php?title=Leishmania_martiniquensis&action=edit&redlink=1) |

**Clinical finding of species=**

**Important PropertiesSandflies are the vectors for these three organisms, and forest rodents are their main reservoirsThe life cycle of these parasites is essentially the same as that of L. donovaniPathogenesis & EpidemiologyThe lesions are confined to the skin in cutaneous leishmaniasis and to the mucous membranes, cartilage, and skin in mucocutaneous leishmaniasisThe lesions tend to become superinfected with bacteria**

**Clinical FindingsThe initial lesion of cutaneous leishmaniasis is a red papule at the bite site, usually on an exposed extremityThis enlarges slowly to form multiple satellite nodules that coalesce and ulcerateThere is usually a single lesion that heals spontaneously in patients with a competent immune systemHowever, in certain individuals, if cell-mediated immunity does not develop, the lesions can spread to involve large areas of skin and contain enormous numbers of organisms**

**Mucocutaneous leishmaniasis begins with a papule at the bite site, but then metastatic lesions form, usually at the mucocutaneous junction of the nose and mouthUlcerating lesions destroy nasal cartilage but not adjacent boneThese lesions heal slowlyLaboratory DiagnosisDiagnosis is usually made microscopically by demonstrating the presence of amastigotes in a smear taken from the k lesion**