

# Lecture 8: *Balantidium coli*

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## *Balantidium coli*

- Largest protozoan and the only ciliate parasitic to humans
- Responsible for the disease balantidiasis



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## Balantidiosis

Zoonotic disease acquired by humans via the fecal-oral route

Normal host is the pig which are asymptomatic for the disease.

Disease is world-wide in distribution but mostly in hog-raising countries.

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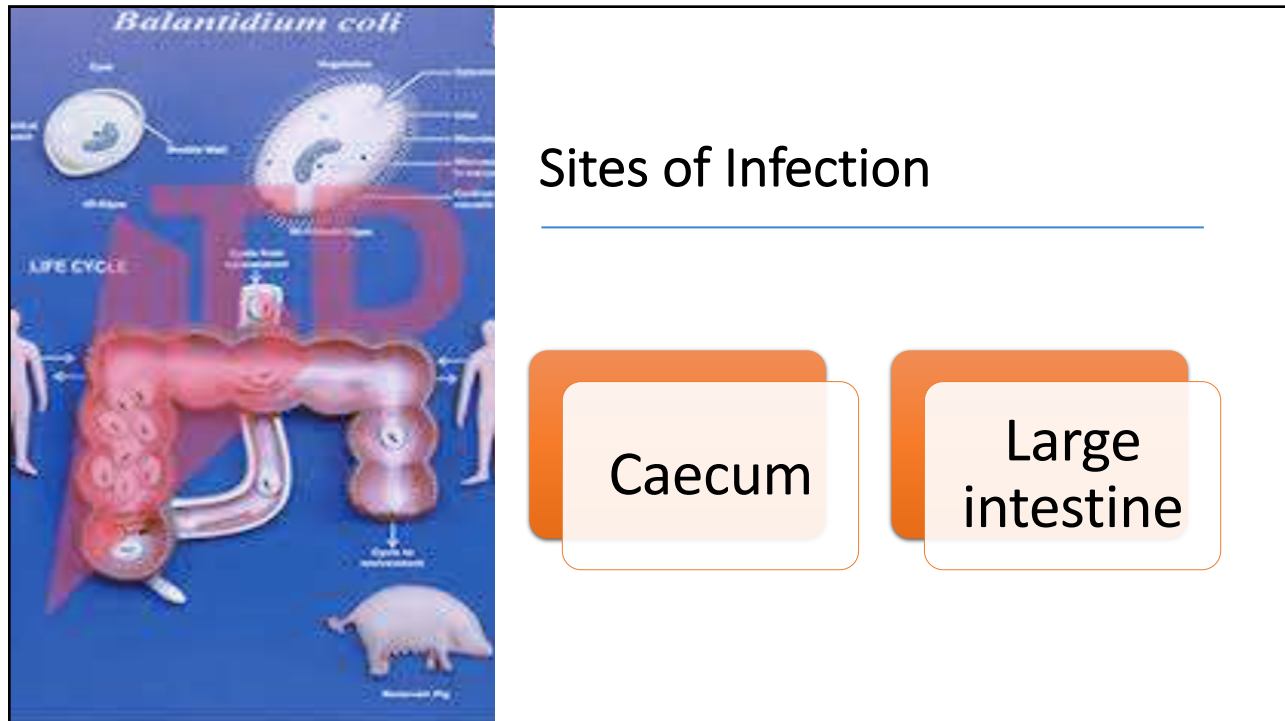
## Hosts of *Balantidium coli*

Pigs and monkeys are common hosts.

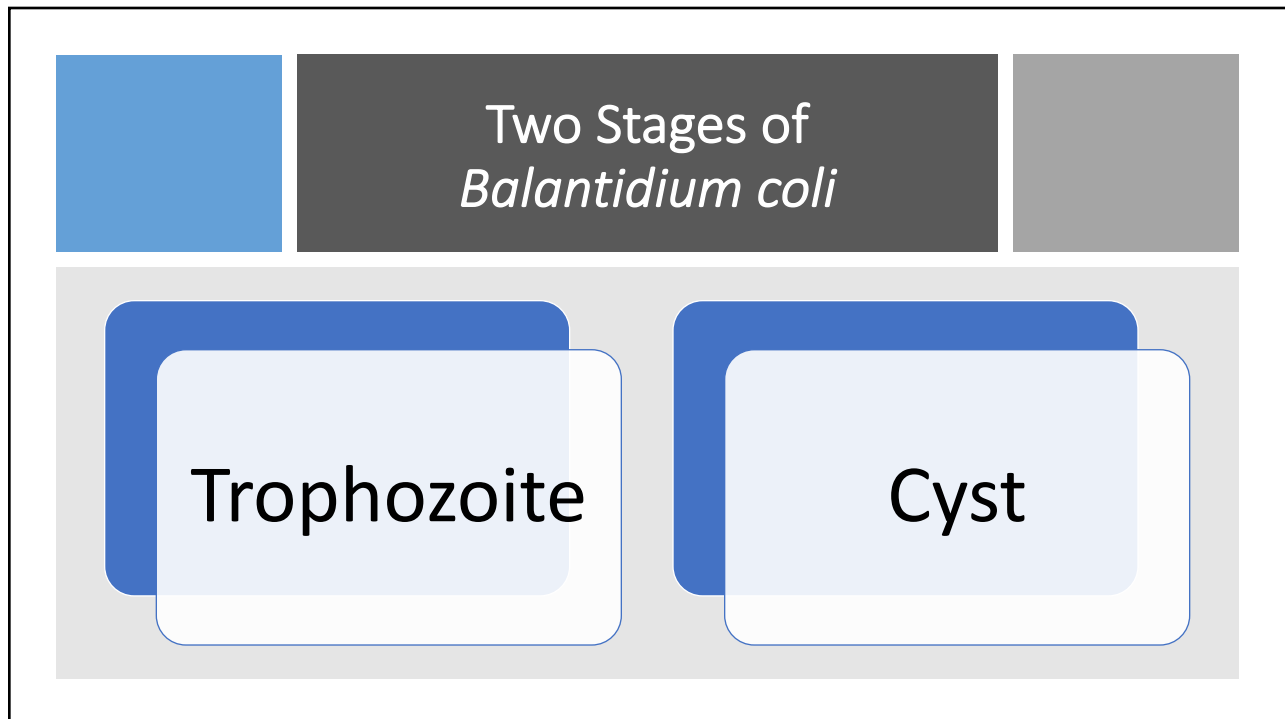
Can also be found in dogs.

Humans also acquire the disease hence its zoonotic description.

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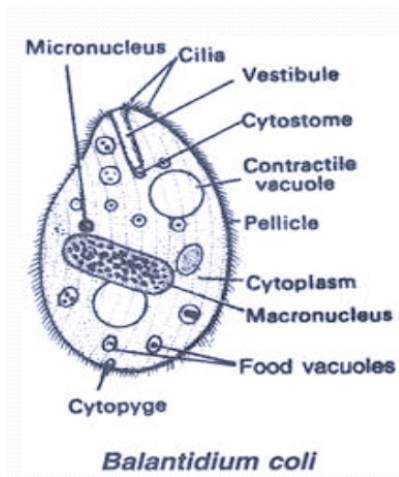


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## *B. coli* Trophozoite




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Oval, pointed at anterior end

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50-130  $\mu$ m long

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Covered in cilia

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Non-infective

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Reproduce by binary fission and conjugation

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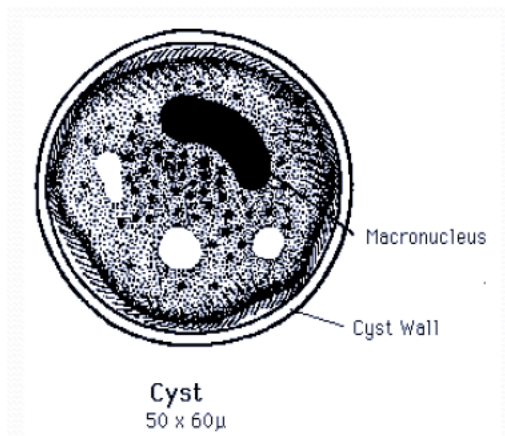
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With micronucleus and macronucleus

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## *B. coli* Cyst




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Spherical

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40-60  $\mu$ m across

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Covered with thick hard cyst wall

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With cilia

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Infective stage

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Non-reproductive

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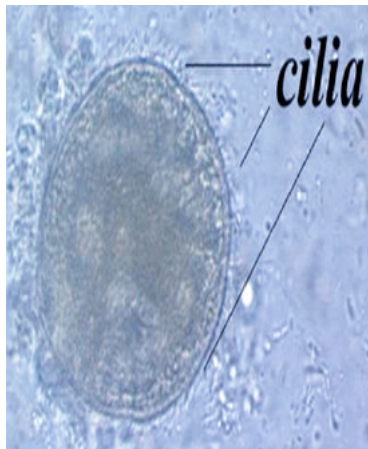
With macronucleus

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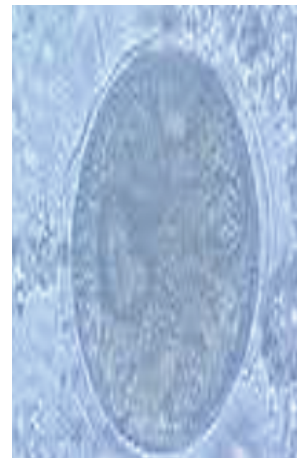
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## *Balantidium coli*

Trophozoite

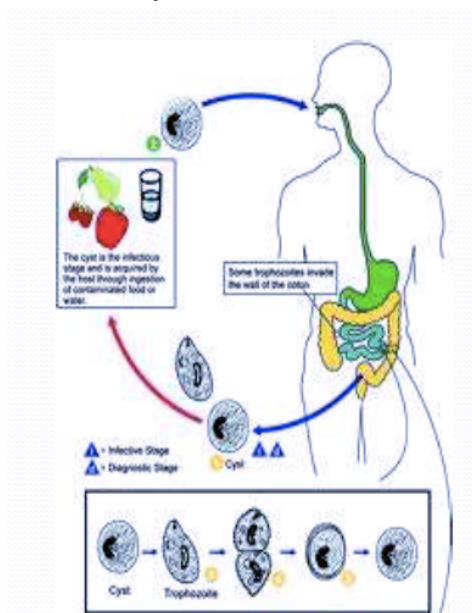


Cyst



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### Life Cycle of *B. coli*



- Cyst is the infective stage.
- Cyst is ingested in food contaminated with feces or contaminated water.
- Passes into the host digestive system.
- Excystation occurs in the small intestine releasing the trophozoite.
- Motile trophozoite resides in the lumen of large intestine feeding on intestinal nutrients.
- Trophozoites multiply by asexual binary fission or sexual conjugation.
- They may become invasive and penetrate the mucosa of the large intestine.
- Trophozoites encysts and released into the environment through the feces.

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## Signs and Symptoms of Balantidiasis

Acute and can even be hemorrhagic

Diarrhea

Ulceration in gut wall

Dysentery

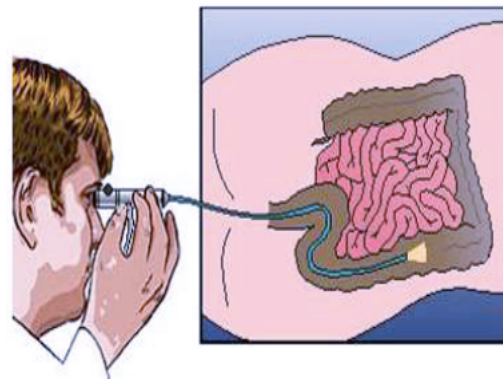
Colitis

Abdominal pain

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## Diagnosis of Balantidiasis

- Microscopic examination of patient's stool
- Biopsy
- Use of sigmoid scope to visually inspect the last sections of the large intestine



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## Treatment

Tetracycline

Metronidazole

Iodoquinol

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## Control and Prevention

Avoid

Avoid ingestion of contaminated food and water.

Ensure

Ensure proper disposal of human waste and pig waste.

Treat

Treat infected pigs and humans

Prevent

Prevent fecal contamination of food and water supply.

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Thank you.

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