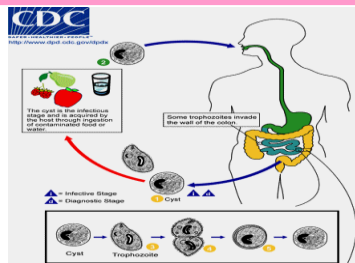
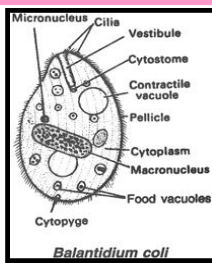


Balantidium coli



- Geographical Distribution - Tropical zones but is present throughout temperate climate as well.
- Epidemiology & effects are similar to those of E. histolytica.

- DH: Humans, pigs, guinea pigs, rats and other mammals.
- IH: None

- Mode of transmission
- Feco-oral (cysts that found in stools are ingested).
- Disease - balantidiasis

Pathogenesis

- 2o foci – liver & lung.
- * foci - a localized area of disease or the chief site of a generalized disease or infection.
- Urogenital organs sometimes are attacked.

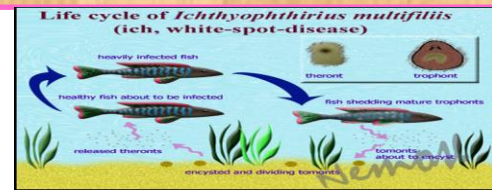
Treatment & Control

- Drugs used: Carbarsone, Diiodohydroxyquin & Tetracycline

Prevention & control

- Measures are similar to those for E. histolytica, except particular care by those who work with pigs.

Ichthyophthirius multifiliis

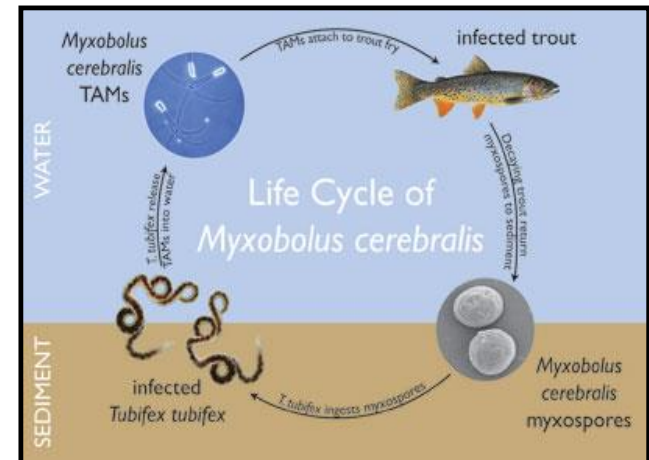


- I. multifiliis* is very large, and the cysts on infected fish are visible.
- Disease known as ick (white spot disease) where the parasites attack epidermis, cornea, and gill filaments.
- Pathogenesis
- Grayish pustules (small bumps on the skin that fill with fluid or pus) from the colonized skin.
- Host's action:
- Mucus production by epidermal cells.
- Fish may die due to gas exchange interruption when the parasites attack the gill.
- Some different fish species that recover show protective immunity suggesting possible development of vaccines. e.g. in catfish.
- Treatment
- For aquarium fish:
- Dilute concentration of formaldehyde, malachite green, or methylene blue.
- Food with malachite green developed to control ick.

Ciliated Protozoa

Ciliated, Microsporid a& Myxozoa Protozoa

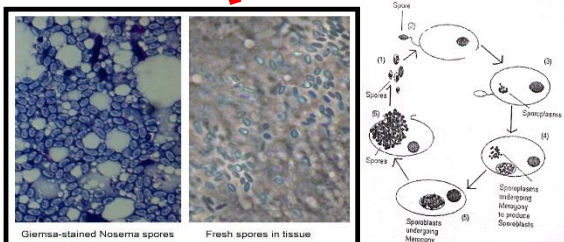
Myxozoa Parasite



Myxobolus cerebralis

- ✓ Parasites of salmonids (salmon & trout).
- ✓ Causes Whirling disease in farmed salmon and trout and also in wild fish population.
- ✓ Afflicts juvenile fish (fingerlings and fry) and causes skeletal deformation and neurological damage.
- ✓ M. cerebralis feeds on the fish's cartilage, and the infection can cause skeletal deformities, a blackened tail, and whirling behavior
- ✓ Fish "whirl" forward in an awkward corkscrew-like pattern instead of swimming normally, find feeding difficult, and are more vulnerable to predators.

Microsporida Parasite



Oval (4µm-6µm long by 2µm-4µm wide).

Extended filament is 250µm to 400µm long.

Nosema apis

- Parasite of honey bee (*Apis mellifera* Linnaeus) that cause much loss to beekeepers.
- Infects epithelial cells in the bee's midgut.
- Infected bees:
 - Lose strength
 - Listless (lethargic)
 - Die

Disease known as:

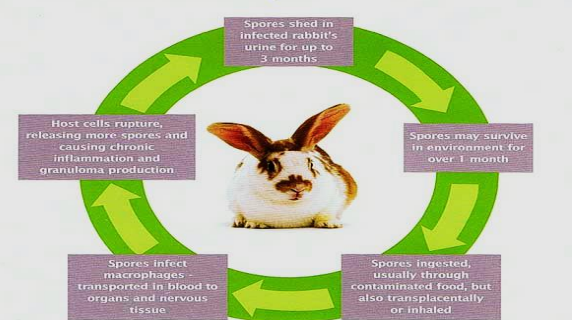
- Nosema disease
- Spring dwindling
- Bee dysentery
- Bee sickness
- May sickness



Nosema bombycis

- ❖ One of the first 'germs' proved to cause disease.
- ❖ Parasite of silk moth larvae (*Bombyx mori* Linnaeus) that give a great impact in the silk industry.
- ❖ Affect nearly all tissues of the insect's body, including intestinal epithelium.
- ❖ Parasitized larvae show brown or black spots on bodies (peppered appearance)

Transmission and lifecycle



Encephalitozoon cuniculi

- ❑ Among the most extensively studied of all Microsporida.
- ❑ Occurring in laboratory mice, rabbits, monkeys and human too.
- ❑ It was thought to cause rabies & polio previously.
- ❑ May be transmitted by body exudates (any fluid that filters from the circulatory systems into lesions or areas of inflammation) or transplacentally.
- ❑ Damage is usually minimal but it can be fatal in AIDS patients.

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