Mycobacterium Infections

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What are Mycobacterium?

Mycobacterium are related to the bacteria that cause tuberculosis. There are several varieties of this aquatic bacteria. Three of the more common are:

- Mycobacterium marinum
- Mycobacterium fortuitum
- Mycobacterium chelonei

These three bacteria are commonly cultured from a variety of freshwater, brackish or marine species of fish. All of the *Mycobacterium* listed can cause chronic or acute disease in captive fish.

How are fish infected with Mycobacterium?

The most likely route of infection for fish is ingestion of infected fecal material or tissues. In addition, *Mycobacterium* may be introduced into the water from an infected fish's gills or ulcerated skin lesions.

What are the symptoms of Mycobacterium infections in fish?

There can be many symptoms of a *Mycobacterium* infection. The most common are:

- Exophthalmia (protrusion of the eyeball)
- Lethargy
- Scale loss
- · Abdominal distension
- · Pigment changes
- Poor body condition
- Skin ulcers

Many other fish diseases can cause similar signs. Many fish can be long-term carriers of *Mycobacterium* before any symptoms develop.

How is a *Mycobacterium* infection in fish treated? There is no successful treatment for *Mycobacterium* infections in fish.

Can people get *Mycobacterium* infections and how can they be prevented? Yes, people can become infected with *Mycobacterium* from fish. The most common source of infection with *Mycobacterium* is contact with water or fish contaminated with the bacteria. Most often the bacteria will enter the body through a break in the skin such as a wound or cut. Lesions are typically found on the extremities (fingers and hands) because of this bacteria's preference for lower temperature. The lesions are generally nodules, which may become ulcerated. The resulting infection is called "Fish-handlers Disease" or "Fish-tank Granuloma."

Person with HIV/AIDS or other immune-compromising illnesses may develop a systemic infection, such as in the respiratory tract, as a result of exposure to these bacteria.

The best way to prevent an infection from your captive fish environment is by wearing gloves. Waterproof gloves protect the handler from exposure to these bacteria. Gloves also protect the fish. Bare hands can be abrasive and contain oils; both can damage the delicate outer layers of fish making them susceptible to disease. In addition, persons working in or around aquariums or ponds should wash their hands immediately after they have finished their work.



Persons with a disease or condition that compromises the immune system such as HIV/AIDS, chemotherapy, transplant recipients, etc. should not handle captive fish or aquarium/pond ornamentals.

