

Mycobacterium marinum

Fish Tank Granuloma, Swimming Pool Granuloma

What is *Mycobacterium marinum* and what causes it?

Mycobacterium marinum (my-coe-back-tear-EE-um mare-EE-num) is a bacterial organism found in a variety of water sources (salt and freshwater) that can cause skin lesions in fish and people. People who fish, work in aquaculture or have fish aquariums are at greater risk. Improperly sanitized swimming pools can also be a source.

What animals get *Mycobacterium marinum*?

Fish are the primary species affected by *Mycobacterium marinum*. Wild and aquaria fish are susceptible. Some cases have been reported in reptiles housed in aquaria previously used for fish.

How can my animal get *Mycobacterium marinum*?

The bacteria is commonly found in many water sources, so fish are exposed from their environment (**direct contact**). Stress, poor nutrition or external abrasions can weaken the immune system of fish, making them more vulnerable to infection. Fish can also get the bacteria for contact with infected fish.

How does *Mycobacterium marinum* affect my animal?

Fish infected with *Mycobacterium marinum* will have skin lesions or ulcers. The eyes may bulge and enlargement of the abdomen may be noted. Spine deformities can also occur, as can sudden death.

Can I get *Mycobacterium marinum*?

Yes. Humans can get *Mycobacterium marinum* through **direct contact** with contaminated water sources. This can include fish aquarium water. Infection most commonly occurs at sites of skin wounds or abrasions (the bacteria need an entry site).

Signs of disease involve localized skin lesions, usually on the fingers or hands. They may be single nodule or ulcer or a series of multiple nodules. Skin lesions can heal on their own or persist for months. Less commonly the bacteria can spread in the body and cause joint and bone infections. Death is rare but occasionally occurs, most often in persons with weakened immune systems.

Who should I contact, if I suspect *Mycobacterium marinum*?

In Animals –

Contact your veterinarian.

In Humans –

Contact your physician.

How can I protect my animal from *Mycobacterium marinum*?

Prevention is the best way to protect your fish. Keep them healthy, monitor water quality parameters, and change the water regularly. Sick or dying fish should be removed from the tank (e.g., quarantine or euthanize). Disinfection of the tank can be difficult, since exposed fish or water sources may still carry the bacteria. However, any equipment used to clean the tank should be cleaned and disinfected (dilute bleach solution) after use.

How can I protect myself from *Mycobacterium marinum*?

Since infection primarily occurs with contact with fish or fish water sources, avoid contact with these sources as much as possible. When necessary to have contact, wear gloves when contacting fish, fish water, or any associated equipment. Hand washing is essential after glove removal.


For More Information

CFSPH Technical Fact Sheet. *Mycobacterium marinum* at <http://www.cfsph.iastate.edu/DiseaseInfo/default.htm>

eMedicine. *Mycobacterium marinum* infection of the skin at <http://www.emedicine.com/DERM/topic281.htm>

Maryland Department of Health and Mental Hygiene. *Mycobacterium marinum* factsheet at <http://www.dnr.state.md.us/fisheries/oxford/research/fw/stripedbass/factsheet.pdf>

Mycobacterium marinum
is a bacteria,
found in water,
that can cause
skin lesions or ulcers
on fish and people.



Photos from: National Library of Medicine and Dr. Anna Ross at Christian Brothers University-www.cbu.edu.