

Common Aquarium Fish Bacterial Infections: Causes, Symptoms, and Treatment

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Bacteria are present everywhere on both land and in the water. Bacteria are normally classified as either 'good' bacteria or 'bad' bacteria. The good bacteria in the aquarium consist of the ones that make up the biological filter. These bacteria break down ammonia and nitrate so that it can be removed from the water. Without good bacteria most life would not be able to exist. The bad bacteria are often bacteria that are normally present but do not cause problems until the fish is injured, stressed, or suffering from another disease. These bad bacteria take advantage of the compromised animal's weakened immune system and reproduce out of control, creating the resultant sicknesses and problems. The key to dealing with any bacterial infection is early recognition and treatment. Of course, prevention through careful introduction of new fish, plants, and water, as well as maintaining a healthy, stress-free environment for your fish, is still the best course of action. This article will assist the aquarist with the identification and treatment of some of the more common bacterial infections.

Fin rot

Signs: Fin rot often begins with red streaks in the fins that are soon followed by abnormal lightening of the edge of the fin and then a fraying or rotting of the fin membrane and edges. This infection can lead to a complete rotting of the fin and can spread to the body and lead to death.

Cause: *Aeromonas*, *Pseudomonas*, and *Flexibacter*

Transmission: Infection occurs from bacteria that are already in the water, but do not cause problems in healthy fish. Injury to the fins, stress, or poor water quality can all lead to an increase in these infections.

Treatment: Infected fish can be bathed in a salt solution (make sure your species of fish can tolerate this) or given topical treatment of the affected area with Gentian Violet. Treatment tanks with appropriate antibiotics are sometimes also used. Correcting water problems and removing fighting fish are also necessary to prevent reoccurrence.

Fish tuberculosis

Signs: Fish with tuberculosis usually show a loss of appetite, pale skin color, emaciation, lethargy, skin ulcers, and general poor health. The disease may progress slowly leading to skeletal deformities and eventually death. Post mortem exam will reveal small white nodules in the internal organs.

Cause: *Mycobacterium*

Transmission: The bacteria can be transmitted through the water from open ulcers, feces of infected fish, or through the consumption of infected, dead, or dying fish in the tank.

Predisposing factors: This disease is not highly contagious, however, it is often associated with poorly kept or dirty tanks with poor water quality. Any dead fish should quickly be removed and disposed of. Diseased live fish should be removed to a treatment tank.

Treatment: The antibiotics kanamycin or erythromycin are sometimes successful. All infected fish should be handled with care to prevent transmission to humans through open wounds or cuts.

Mouth rot

Signs: There are two forms of mouth rot: Acute and chronic.

Acute Form: Sudden, unexplained death with the diagnosis made on post mortem examination.

Chronic Form: The disease usually begins with small white to gray marks on the head, fins, or gills. The lips may be involved and the disease may progress to the inside of the mouth. The lesions grow to resemble white, fluffy, fungus-like tufts. The lesions produced by a bacterial infection are coarser and grayer in color than most fungal infections. The infection can continue to grow and can lead to death.

Cause: *Flexibacter columnaris*

Transmission: The bacteria are commonly present in aquarium water, on the skin of healthy or diseased fish, and on organic material in the tank.

Predisposing factors: Any existing injuries or diseases of the mouth, incorrect PH, high levels of nitrate, low oxygen concentrations, or even a vitamin deficiency, can increase the risk of fish developing this disease.

Treatment: A treatment bath containing phenoxyethanol is normally curative. In more severe cases, treatment with an antibiotic such as oxytetracycline may be necessary.

Skin ulcers

Signs: Ulcers usually show up as raw opened areas on the skin. They often have reddened edges and may be associated with

other symptoms of systemic infection or disease.

Causes: *Aeromonas*, *Pseudomonas*, *Mycobacterium*, and *Vibrio*

Transmission: The bacteria are commonly found in the water and will invade a wound or skin injury on an otherwise healthy fish.

Predisposing factors: Previously damaged skin, poor water conditions, and stress can all lead to an increase in ulcers.

Treatment: Antibiotic baths coupled with anti-fungal baths containing phenoxyethanol are the most common treatments. Improving water quality, reducing stress, and decreasing the risk of injury are all very important in reducing the incidence of ulcers.

Vibriosis

Vibriosis is most often found in marine or brackish water fish, but can occasionally be found in tropical species as well.

Signs: There are two forms of vibriosis: Acute and chronic.

Acute Form: Death may occur suddenly, before any signs are noticed. Symptoms may include increased respiration, loss of appetite, lethargy, skin hemorrhages, and death. Post mortem exams may reveal enlarged internal organs, but without a diagnostic test, this disease is difficult to distinguish from other bacterial infections.

Chronic Form: Exophthalmos, ulcers, and intestinal inflammation in fish that have died.

Transmission: Fish contract the bacteria *Vibrio anguillarum* through open sores or feeding on dead fish that died from the disease.

Treatment: The best treatment includes the oral antibiotics chloramphenicol or furazolidone.

Summary

These are just a few of the most common bacterial infections that can infect fish. After reviewing the list of infections, it is very clear that most bacterial infections are caused by a few similar situations, and that following a few basic precautions can prevent most of these infections. The precautions include maintaining excellent water quality at all times, quickly removing any dead or diseased fish from the tank, treating all diseased fish, never introducing diseased or sick fish into your community tank, and preventing injuries from fighting or unsuitable habitat. If these basic guidelines are followed, bacterial infections will be a very rare occurrence in your tank.