

# WORKING *with* FRESHWATER FISH



*Like all animals, fish can carry germs that may cause illness in people. Illnesses caused by germs spread between animals and people are known as zoonotic diseases (or zoonoses). Even animals that appear healthy can carry germs that cause zoonotic diseases.*

## Protect Yourself While Working with Freshwater Fish

- Familiarize yourself with the animals you will be working with and the potential for zoonotic disease from each species.
- Wash your hands with soap and running water before and after handling/cleaning aquariums and feeding fish.
- Keep animal areas clean and disinfect equipment after use. Use cleaning techniques that do not aerosolize dirty water or other contaminated materials.



- Wear appropriate personal protective equipment (PPE), such as eye protection and gloves, when cleaning aquariums. Wear waterproof clothing when there is a chance clothing can come in contact with fish. Launder potentially contaminated clothing separately from other clothing, preferably at the animal facility.



- Do not consume or store food and beverages in areas where animals are housed or worked with. Do not apply makeup or use tobacco products while handling animals.

- To avoid development of infection, make sure open wounds or cuts are properly covered prior to handling fish or aquarium water. Make sure these wounds or cuts do not come in contact with fish, fish-contaminated materials or aquarium water.



- If you receive a scratch or cut while handling fish or cleaning an aquarium, immediately wash the wound with soap and warm water; this can reduce the risk of infection.

- Contact the Biosafety Occupational Health Program at [bohpt@tamu.edu](mailto:bohpt@tamu.edu) to report the incident. The Texas A&M University Occupational Health Physician will perform a risk assessment and determine what occupational health services, if any, you should be offered (e.g., tetanus vaccination, post exposure prophylaxis, etc.).
- Go to an emergency room or urgent care if the wound appears infected (indicated by swelling, pain, redness or draining fluids or pus).



- Keep your tetanus vaccination up to date.

## Main Zoonotic Diseases Associated with Freshwater Fish

### ***Aeromonas* spp.**

*Aeromonas hydrophilia* is considered a normal intestinal microflora of healthy fish. Infection occurs through open wounds or by drinking contaminated water (usually freshwater species). The most common syndromes are gastroenteritis and localized wound infections. Individuals with weak immune systems are most affected and may experience diarrhea and blood infections.

### **Mycobacterium** (*M. marinum*, *M. fortuitum*, *M. chelonae*)

Infection occurs by coming into contact with infected animals or contaminated water. The most common sign of infection is development of a skin infection, which may become severe. A localized hard bump may form on the hands or fingers approximately 6-8 weeks after exposure to the organism. In some cases, the bacteria can spread throughout the body.

### ***Salmonella* spp.**

Salmonellosis is a bacterial disease caused by the bacterium *Salmonella*. Infection occurs by eating/handling contaminated food or coming into contact with the stool or habitat of certain animals, including fish. Aquariums that contain reptiles or amphibians, in addition to fish, are at a higher risk for having *Salmonella*. People infected with *Salmonella* may experience fever, vomiting, diarrhea and abdominal cramps. It can also spread elsewhere in healthy people, like to bones, and cause deep infections. Individuals with a weakened immune system are more likely to develop severe illness.

### ***Streptococcus iniae***

Infection occurs through open skin abrasions or scrapes while handling infected fish or cleaning aquariums, resulting in a skin infection. It can lead to human infections of joints, the heart or brain.

### ***Erysipelothrix rhusiopathiae***

Infection occurs through open skin abrasions or scrapes while handling infected fish or cleaning aquariums, resulting in a skin infection. It can lead to widespread infection and infection of the heart.

### ***Campylobacter*, *Vibrio*, (mostly saltwater), *Escherichia*, *Klebsiella*, *Edwardseilla*, *Burkholderia pseudomallei***

These are other bacteria that can be transmitted by contact with abraded skin or wounds and cause skin infections or spread to other organs.

