

ZOONOTIC CONSIDERATIONS FOR FROG HANDLERS



Diseases can be caused by microorganisms that are transmitted from frogs to humans. Zoonotic organisms can also be present in the tanks and contaminated water. This brochure discusses the causes, symptoms, treatment and prevention of some of the most common of these diseases, including Mycobacteriosis, Chlamydiosis, and Salmonellosis.

Mycobacteriosis

Mycobacteriosis is caused by waterborne atypical Mycobacteria and is frequently the cause of disease in frogs.

- Infected frogs may have no visible symptoms or may exhibit skin ulcers and nodules.
- All aquaria are assumed to harbor *Mycobacteria species*.
- Transmission from the frog or aquaria to humans most likely occurs through minor cuts and skin abrasions.
- After exposure, symptoms in humans may not appear for 7-14 days or longer and can include dermatitis, painless subcutaneous nodules, lesions or skin loss. Invasion into bone and deeper tissues has also been reported in some cases.
- Treatment in humans may include antibiotics and/or surgical excision.

Chlamydiosis

Chlamydiosis is caused by the intracellular bacteria of the genera *Chlamydia* (now *Chlamydophila*). Outbreaks have been reported in captive frogs.

- *Chlamydia pneumoniae* is an important human pathogen and has been identified as the cause of disease in captive frogs used for research.
- Chlamydia is mainly transmitted by inhalation of contaminated aerosols and can lead to the development of pneumonia in people.
- Until more is known about the epidemiology and prevention of Chlamydial infections, caution must be exercised in human contact with *Xenopus* and *Rana* species of frogs in particular.

Salmonellosis

Salmonellosis is a significant cause of gastroenteritis in humans.

- Frogs can be asymptomatic carriers of *Salmonella species*.
- Pathogenic strains of *Salmonella* may be transmitted from frogs to humans by the fecal-oral route.

Other organisms

Tank water can contain other opportunistic pathogens such as *Aeromonas*, *Edwardsiella*, and other bacteria. Many of these organisms are capable of causing wound infections in minor cuts and skin abrasions, and possible systemic infections in susceptible individuals.

General Recommendations

You can minimize your chance of contracting a zoonotic infection when handling frogs or working with their tanks or contaminated water.

- Cover open wounds or other breaks in the skin with waterproof dressing.
- Wear appropriate-length gloves and a fluid resistant gown that protects street clothes when handling frogs or their contaminated water.
- Wash hands after removing gloves and before leaving the vivarium.
- If significant splashes are anticipated, a face shield may be prudent to minimize potential exposure to the mouth, nose and eyes of personnel.
- Eating, drinking, and handling of contact lenses is prohibited where captive frogs are present.
- Use an effective disinfectant such as 10% Bleach or Beaucoup® (available from Hospital storeroom, bin# 92952) to decontaminate work surfaces.
- Immunocompromised individuals should seek medical consultation before initiating work with frogs.
- Avoid washing human use utensils in the same sink with aquatic equipment or tanks.
-

If you have an exposure or experience symptoms

If a percutaneous injury or significant exposure occurs while handling frogs or working with their tanks, wash the area with soap and water, notify your supervisor and seek medical advice from UVA WorkMed or Student Health Services.

- Continue to monitor for dermal lesions as a delayed onset of symptoms is possible.
- **Even if you did not have a specific injury or a known exposure, you should report any unusual dermal lesions to your supervisor and seek medical advice at WorkMed or Student Health Services.**



Important Contacts for the Occupational Health Program

UVA-WorkMed: 243-0075
 Elson Student Health Center: 924-5362
 Environmental Health and Safety: 982-4911
 Institutional Animal Care and Use Committee (ACUC): 924-0405
 Center for Comparative Medicine: 924-2052
 University Human Resources: 924-4598

The Occupational Health Program is jointly administered by UVA-WorkMed and Student Health, in consultation with representatives of University Human Resources, Comparative Medicine, the ACUC, and Environmental Health and Safety. For more information about the Program, visit our web site: <http://hsc.virginia.edu/research/ccm/page5.htm>.