

Zoonoses Associated with Birds (Including Poultry & Pigeons)

This document provides information on various diseases that can be passed from chickens, turkeys, ducks, pigeons, parrots, parakeets, sparrows, finches, crows, raptors and other birds to people. Often these diseases do not make birds appear ill but can cause serious illness in humans. Persons with specific medical conditions such as a chronic illness, immunodeficiency and pregnancy may be at higher risk of developing disease or complications from a zoonotic disease and should consult with their physician before working with animals. Zoonotic diseases associated with birds include avian tuberculosis, erysipelas, ornithosis, cryptococcosis, salmonellosis, cryptosporidiosis and campylobacteriosis. Avian influenza and velogenic Newcastle disease are potential threats in birds from foreign countries but are not currently present in bird populations in the United States of America.

Mycobacterium avium complex (MAC), the causative agent of avian tuberculosis is found world-wide in soil and droppings of infected birds. Persons infected with MAC may develop lymphadenitis & pulmonary disease similar to tuberculosis or more severe disseminated disease. Transmission of MAC occurs primarily through aerosolization and inhalation of the agent in dried bird droppings and contaminated soil. *Cryptococcus neoformans* is a fungus frequently found in pigeon droppings and in soil in many parts of the world. Disease in humans usually presents as chronic meningitis; infection of the lungs, kidneys, prostate and bone may also occur. Immunodeficient persons have increased susceptibility to cryptococcosis and disseminated MAC infection and should consult with their personal physician before working with birds.

Erysipelas is a bacterial infection of chickens that is transmitted through direct contact with animals, tissues and droppings. The risk of infection increases if persons have unprotected cuts or abrasions on their hands. Disease in humans may present as cellulitis, bacteremia, endocarditis, encephalitis and arthritis.

Ornithosis, also known as psittacosis, parrot fever and avian chlamydiosis is caused by *Chlamydophila psittaci* and is found in parrots, parakeets, turkeys, geese, ducks, pigeons and other birds. Birds may become ill or show no symptoms of disease. *Chlamydophila psittaci* infections in people usually result in flu-like symptoms and respiratory disease with occasional complications. Infection in pregnant women has been associated with infectious abortion. Transmission is usually by inhalation of dried droppings, secretions and feather dust of infected birds.

Salmonellosis, cryptosporidiosis, and campylobacteriosis are acquired by contact and accidental ingestion of fecal material or consumption of undercooked meat and egg products from infected birds. Birds infected with these diseases may have diarrhea and discolored droppings but some birds may show no symptoms of disease. Free-ranging or wild-caught animals are more likely to carry these infections than those raised and housed in a laboratory setting. Any animal with diarrhea should be suspect of having a zoonotic disease.

West Nile virus, eastern equine encephalitis virus and other related arboviruses do infect poultry and other birds but transmission to people is via the bite of an infected mosquito and not by contact with infected birds.

Individuals with exposure to birds and avian environments may develop allergic reactions to avian proteins (allergens). Approximately 20-30 percent of individuals working with laboratory animals will develop an allergic reaction to animal proteins and 5-10 percent of individuals will develop asthma. Personnel may be exposed to allergens through inhalation and contact with skin, eyes and mucous membranes. Animal allergens may be present in dander, feathers, skin, urine, saliva, serum and any contaminated feed or bedding materials. Risk factors for developing an allergic reaction include history of previous allergies to animals. The signs and symptoms of an allergic reaction are nasal discharge and congestion, conjunctivitis, tearing and eye itching, skin redness, rash or hives and lower airway symptoms (coughing, wheezing and shortness of breath). Individuals with symptoms suggestive of an allergic reaction related to a workplace allergen should report their concerns to their supervisor and consult a physician.

Transmission of zoonotic diseases from animals is primarily by direct contact, indirect contact with insect vectors and contaminated inanimate objects, oral ingestion or inhalation of aerosolized materials. We can protect ourselves from most diseases by using the following basic hygiene procedures:

- Do not eat, drink, apply makeup or use tobacco products while handling animals or in animal housing areas.
- Wear respiratory protection when appropriate.
- Wear gloves when handling animals, animal tissues, body fluids and waste and wash hands after contact.
- Wear dedicated protective clothing such as a lab coat or coveralls when handling animals. Launder the soiled clothing separate from your personal clothes and preferably at the animal facility.
- Keep animal areas clean and disinfect equipment after using it on animals or in animal areas.

Most importantly, familiarize yourself about the animals that you will be working with and the potential zoonotic diseases associated with each species. If at any time, you suspect that you have acquired a zoonotic disease, inform your supervisor and seek medical care.

If you have further questions, contact:

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