

## Key Zoonotic Diseases Transmitted from Birds

Our topics for this week are:

- Diseases transmitted from companion birds to humans
- Sanitary practices when handling birds

### KEY ZOONOSES

Apparently healthy captive-bred, caged companion birds pose little risk of transmitting disease to healthy adult handlers who practice conventional personal hygiene. The risks of physical injury are greater than the risks of acquiring an infectious disease.

#### Direct Transmitted

##### Systemic Disease

Many zoonoses from birds can cause generalized (systemic) illness. Nearly all are described as flu-like symptoms. None are common in adult handlers of healthy appearing birds.

Avian influenza (fowl plague) is an influenza A virus that is able to mutate to a form that can affect humans. The disease in birds is highly contagious, affecting fowl, turkeys, pheasants, ducks, and many wild species, but rarely water birds or pigeons. Clinically, there is a short course of disease and very high mortality. Birds that survive have a nasal discharge, white spots on the comb and wattles, and swelling of the head and neck. Some strains, notably H5N1 and H7N7, have emerged as the cause of fatal, but rare, human infections. Precautions include keeping caged companion birds and wild birds separate and promptly reporting any possible cases of avian influenza to state agriculture and public health authorities.

##### Respiratory Disease

Psittacosis (*Chlamydophila psittaci*) and avian tuberculosis (*Mycobacterium avium*) are two respiratory diseases that can be acquired from birds by nasal secretions and feces, but the risks are low in captive-bred, properly housed caged companion birds. However, infected birds may be without clinical signs.

Psittacosis is a bacterial disease transmitted by parrots, macaws, cockatiels, and budgerigars. Canaries and finches are less commonly infected with psittacosis. It is transmissible to humans as a respiratory disease. In birds with clinical signs, psittacosis is a symmetric infection and signs include diarrhea and ocular and nasal discharge. Pigeons, doves, budgerigars, cockatiels, and cockatoos are less likely to show clinical signs of disease, while parrots, lorikeets, mynahs, and canaries are more susceptible to illness from psittacosis. Psittacosis is more common than avian tuberculosis, but less than 50 cases in humans are reported annually in the U.S.

Avian tuberculosis occurs most often in parrots and occasionally in toucans, finches, and pigeons. Parrots with tuberculosis are more likely to appear ill, while infected pigeons are more often carriers of the disease without signs of illness. Transmission to handlers can occur from

contact with infected birds' feces.

Several systemic fungal diseases, such as histoplasmosis and cryptococcosis are associated with birds, but transmission is from bird feces contaminated soil or bedding, not direct transmission from birds.

Newcastle disease is caused by a virus that causes respiratory and neurologic signs of disease. In general, affected birds appear ill and most die. However, Amazon parrots can be carriers without signs. In humans, Newcastle disease can cause mild conjunctivitis and influenza-like respiratory disease.

### **Digestive Tract Disease**

Salmonellosis is often carried by birds. Since they eliminate their feces indiscriminately and their eggs pass through a contaminated cloaca, birds can easily expose handlers to salmonellosis. Salmonellosis in humans causes severe diarrhea and can enter the bloodstream and cause abscesses in various organs. Yersiniosis is a bacteria that causes diarrhea and abdominal pain that can mimic appendicitis.

Campylobacteriosis is a common cause of diarrhea in people that can be acquired directly by fecal-oral exposure from birds, but eating uncooked poultry is a much more common source of exposure. Cryptosporidiosis species in birds do not cause disease in mammals.

### **Skin Disease**

Red mites (*Dermanyssus gallinae*) of birds can cause skin irritation in humans, but they require birds to reproduce. Infestations in humans are usually transient. It is a major parasite of domestic fowl but also occurs on other birds including aviary and wild colonies. Infested birds usually have signs of excessive preening, restlessness, and ruffling of feathers.

### **Vector-Borne**

Equine encephalomyelitis viruses and West Nile Virus are carried by birds and transmitted by mosquitoes.

### **Sanitary Practices**

When handling more than one bird from different households, proper sanitation is required to prevent the spread of disease from carriers without clinical signs. Birds from different origins should not be confined in the same cage. Other basic procedures are for handlers to wash their hands and to clean and disinfect table tops and cages used in handling.

A handler of birds should wear appropriate dress to protect against skin contamination with feathers and skin scales or fecal droppings. Basic sanitary practices should be practiced, such as keeping hands away from eyes, nose, and mouth when handling birds and washing hands after handling birds. Immunocompromised handlers should not clean cages.

Handlers should not kiss birds. Stressing birds should be avoided. Stress can cause shedding of psittacosis and other diseases. The origin of birds should be verified to prevent buying illegally imported birds. Legal importation requires quarantine period and prophylactic treatment for psittacosis. Dust from bird enclosures and feathers should be controlled. A face mask should be worn when cleaning cages and floors. After cleaning, cages should be disinfected with 1:100 solution of bleach to water (two tablespoons/gallon of water).

Special precautions are needed if sick birds are handled, and sick birds should be isolated

from apparently normal birds. New group members should be quarantined for at least two weeks to reduce the risk of transmitting a disease that new birds could be incubating before introducing to the rest of the group.

Now, let's recap the key points to remember from today's episode:

- Companion birds should never have any contact with wild birds
- Psittacosis is a serious respiratory disease that can be transmitted by parrots smuggled into the U.S.
- A face mask should be worn when cleaning bird cages.

Abby says it is time to wrap up this episode.

More information on animal handling is available in my book, *Animal Handling and Physical Restraint* published by CRC Press. It is also available on Amazon and from many other fine book supply sources.

Don't forget serious injury or death can result from handling and restraining some animals. Safe and effective handling and restraint requires experience and continual practice. Acquisition of the needed skills should be under the supervision of an experienced animal handler.