

One Health Briefs For Practitioners: Backyard Poultry

What is Backyard Poultry?

Keeping backyard poultry has become a popular hobby with increasing prevalence over the years. Poultry animals can include many different species with some of the most popular birds being chickens, ducks, turkeys, and geese.

Although many poultry animals are raised for egg and meat purposes, some may be raised as pets or for educational purposes.

How are diseases spread?

Poultry can be carriers of multiple infectious and zoonotic diseases. Some of these diseases can include *Salmonella*, *E. coli*, *Campylobacter*, and avian influenza.

Most zoonotic diseases spread by poultry are spread through fecal-oral routes, however, some may be aerosolized. Owners should wash their hands after handling their birds. Eggs should also be brushed off before storage in a refrigerator.



Veterinary Medical Professionals

Common signs and symptoms: Zoonotic diseases found in backyard poultry can have varying symptoms. Veterinarians should look for diarrhea, sudden death, decreased appetite and respiratory signs.

Diagnostics: Necropsy is often an integral part of poultry disease diagnosis, however, PCR and culture and sensitivity can also be used to more specifically identify pathogens.

PPE: Veterinary professionals should take the proper precautions when working with sick poultry animals including wearing gloves and washing their hands and equipment used.

Owner Communication: Clients that own backyard poultry should be informed of common zoonotic diseases such as *Salmonella*, and encouraged to take proper precautions to minimize disease transmission. Birds should only be purchased from reliable sellers and should be quarantined for 4 weeks before introducing them to the rest of the flock. Birds should also receive their recommended vaccinations.



Human Medical Professionals

Common signs and symptoms: Patients that have backyard poultry animals may become infected with various diseases. The clinical signs will vary based on the disease. Most commonly, these diseases will be enteric diseases such as Salmonellosis, resulting in diarrhea, abdominal pain, and fever.

Patient Communication: Patients should be asked if they keep poultry animals or eat farm-fresh eggs. Patients that may have contracted a disease from their poultry animals should be informed of zoonotic potential and educated on best practices to prevent themselves from becoming infected in the future by methods such as wearing gloves, washing hands, and cleaning bedding. Patients that consume farm-fresh eggs should also be encouraged to brush off eggs before storage or consumption.

References

Centers for Disease Control and Prevention. (2023). Backyard Poultry. <https://www.cdc.gov/healthypets/pets/farm-animals/backyard-poultry.html>

Centers for Disease Control and Prevention. (2023). Salmonella Outbreaks Linked to Backyard Poultry. <https://www.cdc.gov/salmonella/backyardpoultry-05-23/index.html>



A brief guide for owners when an animal is diagnosed with cryptosporidium

What is Cryptosporidium?

Cryptosporidium or “Crypto” is a protozoal parasite that can cause disease in animals and humans. There are many different species of *Cryptosporidium*, however, the species found in cattle is known to infect humans as well. The parasite most commonly causes severe, watery diarrhea. Most cases of disease in humans are caused by contaminated water and not contact with animals.

How did my animal become infected?

The parasite is spread through the feces of infected animals. When animals such as cattle consume food or water that has been contaminated with the feces of infected animals, they too can become infected with *Cryptosporidium*.

What is a zoonotic disease?

Zoonotic diseases are diseases that can be transmitted between animals and humans. Animals do not have to show signs of illness to transmit some diseases.

How do I prevent myself or others from becoming infected?

As most outbreaks of *Cryptosporidium* in humans are caused by contaminated water, the best way to prevent infection is to avoid consuming water from places such as pools or standing water. People who work with cattle should take proper precautions as well. Hands should always be thoroughly washed after handling cattle. Gloves should also be worn when handling calves with diarrhea and hands washed promptly after removing gloves.

Should I seek medical treatment?

Most people do not need to seek medical treatment if a pet is diagnosed with cryptosporidium. However, owners can inform their medical provider of the specific infection and ask what symptoms to watch for in all people in the household.



Scan to learn more about cryptosporidium from the Centers for Disease Control and Prevention (CDC).



OWNERS' GUIDE TO GIARDIASIS

A brief guide for owners
when a pet is diagnosed
with Giardia

What is Giardiasis?

Giardia is a protozoal parasite that can infect both animals and humans. Most types or “assemblages” of *Giardia* are not zoonotic; however, *Giardia* Assemblage A is. Most commonly, the parasite causes symptoms such as diarrhea and abdominal pain. Some patients infected, both human and animal, may be asymptomatic and have no signs of disease.

How did my pet become infected?

Giardia is spread through the feces of infected animals and humans. When animals consume either water or food that has been contaminated with feces from other infected animals, they too can become infected.

What is a zoonotic disease?

Zoonotic diseases are diseases that can be transmitted from animals to humans. Animals do not have to show signs of illness to transmit some diseases. Not all *Giardia* types can be transmitted to humans, however, some can.

How do I prevent myself or others from becoming infected?

Giardia is most often spread to humans through contaminated water or improper hand hygiene. People should avoid drinking from unsafe sources such as pools, lakes, or ponds. Owners of infected animals should take precautions by wearing gloves when cleaning up feces and washing hands thoroughly after handling feces or petting unknown animals. Infected pets should be bathed to remove any feces.

Should I seek medical treatment?

Most people do not need to seek medical treatment if a pet is diagnosed with a *Giardia* infection. However, owners can inform their medical provider of the specific infection and ask what symptoms to watch for in all people in the household.



Scan to learn more about giardiasis from the Centers for Disease Control and Prevention (CDC).



OWNERS' GUIDE TO HELMINTHIASIS

A brief guide for owners when a pet is diagnosed with zoonotic helminths

What is Helminthiasis?

Helminthiasis is an infection with a group of parasites called helminths. In small animals, these are commonly roundworms, tapeworms, and whipworms. Adult worms migrate to the digestive tract and live in the intestines. Sometimes the immature stages can migrate to other organs such as the eyes or brain and cause more severe symptoms like blindness.

How did my pet become infected?

Most pets become infected by ingesting feces or infected animal tissues. However, some of the parasites can penetrate the skin or be transmitted during lactation or pregnancy.

What is a zoonotic disease?

Zoonotic diseases are diseases that can be transmitted from animals to humans. Animals do not have to show signs of illness to transmit some diseases. Not all helminths can be transmitted to humans, but, some specific species can.

How do I prevent myself or others from becoming infected?

Owners of pets infected with helminths should take precautions while pets are shedding the parasite eggs in their feces. Feces should be picked up and disposed of daily using good sanitation and hand washing techniques. Ensure pets do not eat their own or other animal's feces. Owners should not walk barefoot in any area where pets may defecate and should avoid allowing pets to lick their face or mouths.

Should I seek medical treatment?

Most people do not need to seek medical treatment if a pet is diagnosed with a helminth infection. However, owners can inform their medical provider of the specific infection and ask what symptoms to watch for in all people in the household. Children are especially susceptible to infection.



Scan to learn more about helminthiasis from the Centers for Disease Control and Prevention (CDC).



OWNERS' GUIDE TO INFLUENZA

A brief guide for owners when an animal is diagnosed with zoonotic influenza

What is zoonotic influenza?

Zoonotic influenza is caused by a similar virus that causes the flu in humans. Most types of influenza viruses can not spread to different species, however, a few such as Avian and Swine Influenza occasionally can spread to humans. Influenza viruses mainly cause respiratory illness with symptoms including cough, nasal and ocular discharge, fever, and fatigue. Those who are immunocompromised may be at risk for more severe symptoms.

How did my animal become infected?

Influenza viruses are spread through respiratory droplets. Animals become infected through contact with other sick animals or contaminated objects.

What is a zoonotic disease?

Zoonotic diseases are diseases that can be transmitted between animals and humans. Animals do not have to show signs of illness to transmit some diseases.

How do I prevent myself or others from becoming infected?

People most at risk of being infected are those who work with swine and poultry, especially in enclosed spaces with minimal ventilation. To reduce the risk of contracting the flu, people who work with infected animals should wear gloves and wash their hands afterwards, wear N-95 face masks to prevent the inhalation of respiratory droplets and avoid face-to-face contact with their animals. Annual flu vaccination is also recommended.

Should I seek medical treatment?

Most people do not need to seek medical treatment if an animal is diagnosed with influenza. However, owners should inform their medical provider of the specific infection if they develop symptoms of influenza or upper respiratory illness.



Scan to learn more about influenza from the Centers for Disease Control and Prevention (CDC).



OWNERS' GUIDE TO Q FEVER

A brief guide for owners
when an animal is
diagnosed with Q Fever

What is Q Fever?

Q Fever is a disease caused by infection with the bacteria, *Coxiella burnetii*. In animals, the bacteria most commonly causes abortions or stillbirths in cattle, sheep, and goats. In humans, the bacteria often does not cause illness. Those who do become sick may have symptoms such as headaches and fevers. Some cases can be more severe and lead to miscarriages, heart valve infections, or chronic symptoms.

How did my animal become infected?

The most common route of infection is through the inhalation of the bacteria from excretions or tissues such as milk, urine, feces, or reproductive tissues, such as placentas, from infected animals.

What is a zoonotic disease?

Zoonotic diseases are diseases that can be transmitted between animals and humans. Animals do not have to show signs of illness to transmit some diseases.

How do I prevent myself or others from becoming infected?

Owners of animals infected with Q Fever should take appropriate precautions to prevent themselves from becoming infected. Gloves should always be worn and hands washed after handling potentially infected animals. This should also be done when handling reproductive tissues or when assisting an animal with delivery. Masks should be worn when working near or with infected animals.

Should I seek medical treatment?

Most people do not need to seek medical treatment if an animal is diagnosed with Q Fever. However, owners can inform their medical provider of the specific infection and ask what symptoms to watch for in all people in the household.



Scan to learn more about Q Fever from the Centers for Disease Control and Prevention (CDC).

One Health Briefs For Practitioners: Q Fever

What is Q Fever?

Q Fever is a disease caused by the gram-negative, obligate intracellular bacteria, *Coxiella burnetii*.

C. burnetii can infect many animals, but, is most commonly associated with infections in cattle, sheep, goats, and occasionally humans.

How is Q Fever spread?

C. burnetii is shed from the milk, urine, feces and birth products, such as the placenta, of infected animals. The bacteria is primarily spread through the inhalation of aerosolized dust particles that contain the bacteria.



Another route of infection is through the consumption of undercooked animal tissues or unpasteurized milk products. Some species of ticks may also play a role in transmission, however, this is considered controversial and not proven.

Veterinary Medical Professionals

Common signs and symptoms: The most common signs of Q Fever infection in animals such as cattle, goats, or sheep are abortions or stillbirths. Other symptoms are typically non-specific and can include fever, anorexia, and lethargy.

Diagnostics: As many animals may be asymptomatic, diagnosis may be difficult. Serological testing can be used to screen herds for *C. burnetii*. Other diagnostic tools available include PCR or immunohistochemistry. Culture is typically not used due to the bacteria being highly pathogenic.

PPE: Gloves should be worn and hands washed when handling tissues or excretions from animals that may be infected. Masks are also recommended when assisting with parturition of a suspect animal.

Owner Communication: Owners of animals infected with *C. burnetii* should be informed of the zoonotic potential of the bacteria. They should be encouraged to use proper PPE and hand hygiene when working with potentially infected animals.



Human Medical Professionals

Common signs and symptoms: Many people infected with *C. burnetii* are asymptomatic. Symptomatic individuals may develop non-specific symptoms such as fever, headache, and muscle pain. More serious infections may lead to miscarriage, pneumonia, or chronic Q fever.

Diagnostics: For definitive diagnosis of Q Fever PCR and/or serological testing on acute and convalescent samples is used. Treatment should not be withheld pending laboratory results and should be initiated based on clinical signs and patient history. Culture is not typically useful in the diagnosis of Q fever.

Patient Communication: Patients suspected of having Q Fever should be asked if they have come into contact with agricultural animals, particularly sheep, goats, or cattle or if they consume raw milk or dairy products. Patients should be informed of the zoonotic potential of the disease and should be advised on proper safety precautions to minimize the risk of future infections.

References

World Organization for Animal Health. (2023). Q Fever. <https://www.woah.org/en/disease/q-fever/>
Centers for Disease Control and Prevention. (2019). Q Fever. <https://www.cdc.gov/qfever/index.html>



OWNERS' GUIDE TO RABIES

A brief guide for owners
when a pet is exposed to
rabies

What is rabies?

Rabies is a zoonotic disease caused by the rabies virus. Rabies is fatal and considered to be incurable after the onset of symptoms in all species. Early symptoms typically begin with fever, weakness, or discomfort but then progress to symptoms such as agitation or aggression, hallucinations, hydrophobia (fear of water), salivation and eventually, death.

How do pets become infected?

The virus is transmitted through the saliva of infected animals. Animals typically become infected by being bitten by an infected wild animal, such as a skunk. Less commonly, scratches can also transmit the virus.

What is a zoonotic disease?

Zoonotic diseases are diseases that can be transmitted between animals and humans. Animals do not have to show signs of illness to transmit some diseases.

What will happen to my pet?

If your pet has been bitten by another animal, you should immediately contact your local veterinarian. Your veterinarian may recommend that your pet receives additional vaccinations. Quarantine or observation may also be required depending on your pet's rabies vaccination status.

Should I seek medical treatment?

People who come into contact or own animals suspected to be infected with rabies should contact their health providers to discuss potential treatment.

How can I prevent myself or others from becoming infected?

To avoid contracting rabies virus, people should avoid coming into contact with wild or stray animals and animals expressing aggressive behaviors.



Scan to learn more about rabies from the Centers for Disease Control and Prevention (CDC).

One Health Briefs For Practitioners: Rabies

What is Rabies?

Rabies is a deadly zoonotic disease caused by the negative-sense RNA Lyssavirus, Rabies virus.

Rabies can infect all mammals and is considered to have a 100% fatality rate after the onset of symptoms.

How is Rabies spread?

Rabies is primarily spread through direct contact with the saliva of infected animals. Mostly commonly, this occurs through a bite. However, contact of saliva with open wounds or mucus membranes should also be considered.

Other less potential methods include scratches and contact with nervous or brain tissue.



Veterinary Medical Professionals

Common signs and symptoms: Symptoms of rabies in animals can vary based on the stage of disease and species. Some of the most common symptoms can include ataxia, paralysis, seizures, aggression, and excessive salivation.



Diagnostics: The most common diagnostic test is a postmortem direct fluorescent antibody test (dFA) of brain tissue. Rabies in animals is reportable in the state of Kansas and samples should be submitted to the Kansas State Veterinary Diagnostic Laboratory (KSVDL).

PPE: Veterinary staff should use extreme caution when working with suspected rabid animals. Heavy rubber gloves, masks, eye protection, and protective gowns should be worn when decapitating suspected animals. Staff should be vaccinated against the virus.

Owner Communication: Owners and those who have come into contact with the animal should be informed of the zoonotic potential. They should be encouraged to talk to the local health department and/or their medical provider, especially if they have come into contact with saliva.

Human Medical Professionals

Common signs and symptoms: Symptoms of rabies in humans typically begin as non-specific flu like symptoms that progress to cerebral disease, agitation, hydrophobia, and hallucinations. Patients suspected to be infected with rabies should immediately be reported to the state health department.

Post-Exposure Prophylaxis (PEP): Not all animal bites require PEP. State and local guidelines should be used to determine when PEP should be administered with bite and non-bite exposures. Bats found in rooms with children as well as adults who are asleep or impaired are considered exposed.

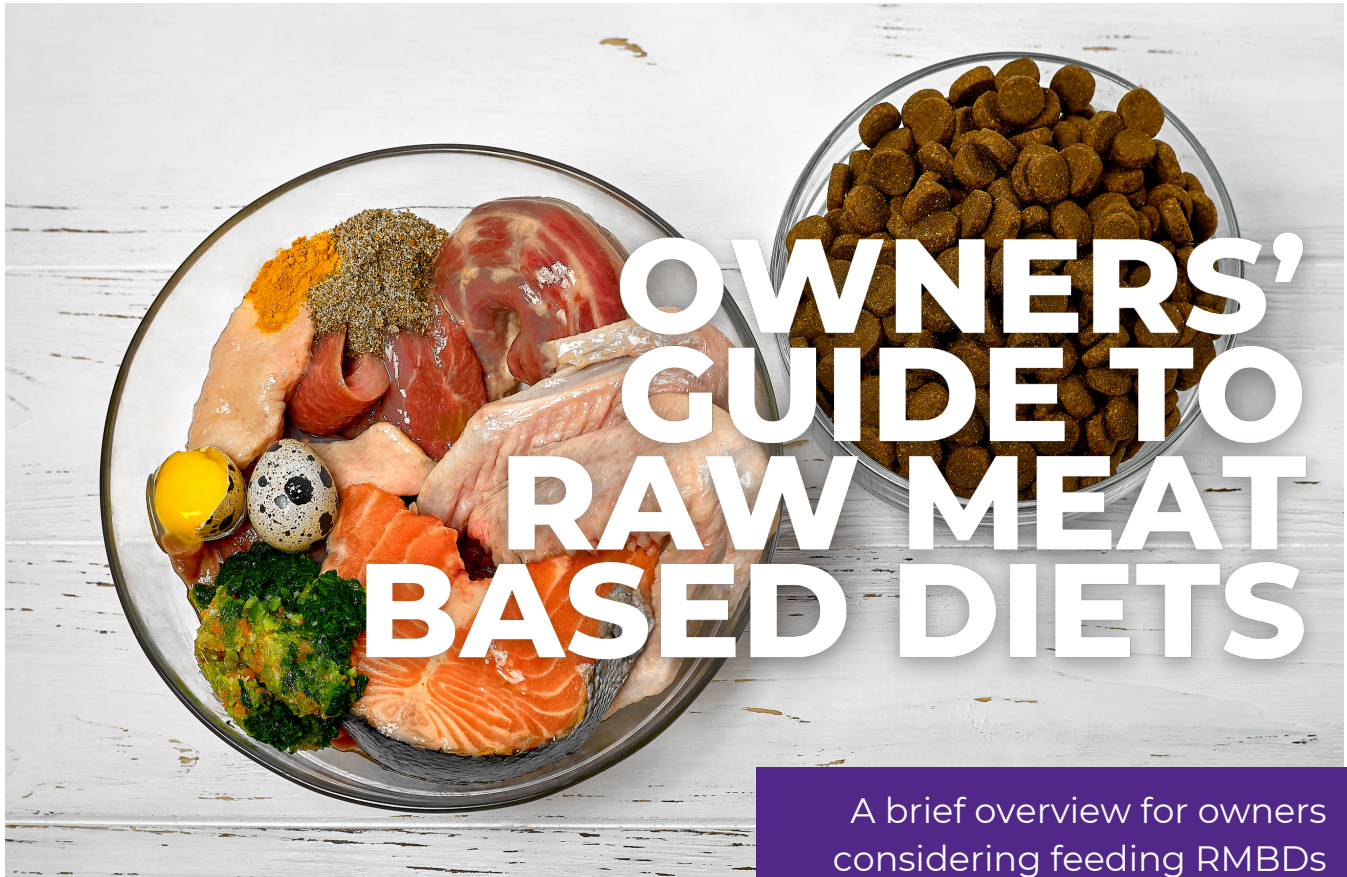
Diagnostics: Multiple ante-mortem tests including RT-PCR and virus isolation can only be performed to diagnose rabies in the terminal stage of disease. Collected samples should include CSF, skin biopsies, saliva, and serum.

Patient Communication: Bites and scratches from wildlife, bats, and stray animals present the greatest risk for rabies exposure. Patients should be educated to avoid handling or petting these animals and to seek medical care if they are bitten or scratched or consult public health if they find a bat in their home.

References

Kansas State Veterinary Diagnostic Laboratory. (2023). Rabies Laboratory. <https://ksvdl.org/laboratories/rabies-laboratory/>

Centers for Disease Control and Prevention. (2022). Rabies. <https://www.cdc.gov/rabies/index.html>



A brief overview for owners considering feeding RMBDs to their pets

What is a RMBD?

Raw meat based diets (RMBD) are diets made for pets containing raw meat or other raw animal tissues.

Why do owners choose these diets?

Pet owners may choose to feed RMBD to their pets because of multiple reasons. Some reasoning is that these diets are perceived as “healthier” or more “natural” compared to traditional kibble.

Do RMBD have health benefits?

Currently, there is no research-based evidence to prove that RMBDs have any health benefits compared to traditional kibble. However, RMBD have been linked to pet illnesses due to improperly balanced diets and numerous bacterial and parasitic infections.

Can RMBD transmit diseases to pets?

Although all foods can potentially transmit diseases, raw meat or other raw animal tissues have a higher chance of transmitting serious pathogens, such as *Salmonella*, *E. coli*, *Clostridium*, *Trichinella*, and *Toxoplasma gondii*.

Are there risks to humans?

Numerous disease outbreaks in humans have been linked to RMBDs, including *Salmonella* and *Listeria*. Immunocompromised persons and children are especially at risk for infection and severe outcomes.



Scan to learn more about pet food safety from the Centers for Disease Control and Prevention (CDC).



OWNERS' GUIDE TO RINGWORM

A brief guide for owners
when a pet is diagnosed
with ringworm

What is ringworm?

Ringworm, also called, dermatophytosis, is a zoonotic disease caused by fungus. The most common species in dogs and cats is *Microsporum canis*. In dogs and cats, ringworm typically appears as dry, patchy, bald spots on their skin. Treatment of ringworm in pets is a long process that typically takes weeks to months.

How did my pet become infected?

Ringworm is highly contagious through direct contact. Pets become infected by coming into contact with contagious fungal spores. These could be from their environment, however, direct contact with other infected animals is the more common transmission route.

What is a zoonotic disease?

Zoonotic diseases are diseases that can be transmitted between animals and humans. Animals do not have to show signs of illness to transmit some diseases.

How do I prevent myself or others from becoming infected?

Infected animals should be kept away from other animals to reduce the spread. It is ideal to wear gloves when applying topical medication, otherwise, thoroughly wash hands with soap and hot water after petting or handling pets. Owners should also avoid face-to-face contact or nuzzling their pets. Infected pets should not be allowed to sleep with owners while they are being treated. All blankets, bedding, or places where pets lay should be cleaned.

Should I seek medical treatment?

Owners of pets diagnosed with ringworm should contact their health care provider to determine what symptoms to watch for.



Scan to learn more about ringworm from the Centers for Disease Control and Prevention (CDC).

One Health Briefs For Practitioners: Ringworm

What is Ringworm?

Ringworm, also known as tinea or dermatophytosis, is an infectious disease caused by fungus. There are multiples species that cause ringworm.

Ringworm can affect many species, especially mammals such as humans, dogs, cats, sheep, and cattle. Many species of fungus that cause dermatophytosis are species specific, however, some are zoonotic .

How is Ringworm spread?



Ringworm is primarily spread through direct contact with three primary sources. These include direct contact with infected people, infected animals, or contagious spores in the environment.

Since the fungus prefers dark, moist environments, places such as locker rooms and communal showers often harbor ringworm.

Veterinary Medical Professionals

Common signs and symptoms: Animals that contract ringworm will likely present with round, hairless areas on their skin. Some of the most common species infected include dogs, cats, sheep, and cattle.

Diagnostics: There are multiple different diagnostic tools and tests that can be used to diagnose ringworm. Some tests include the Wood's Lamp Examination, direct microscopic examination, and culture.

PPE: Since ringworm is a highly contagious disease, veterinary professionals should not allow bare skin to come into contact with infected patients. Gloves and gowns should be worn to prevent the spread of disease. Hands should also be washed thoroughly afterwards.

Owner Communication: Owners should be informed of the zoonotic potential of the fungus. They should be encouraged to not allow their animals to come into contact with other animals and hands should be washed after handling infected animals or items that may act as fomites such as halters, collars, or leads.



Human Medical Professionals

Common signs and symptoms: Ringworm in humans typically presents with circular areas of red, scaly, and often itchy skin.

Diagnostics: There are multiple options for ringworm diagnostics. Potassium hydroxide preparation of skin scrapings, fungal culture, PCR, and the Wood's Lamp Examination are all accepted methods to diagnose ringworm.

Patient Communication: Patients should be asked if they have any exposure to animals such as dogs, cats, or cattle, whether domestic or wild. They should also be asked if they regularly use public showers or locker rooms. If the fungus is determined to be a zoonotic species, patients should be informed of its potential to spread to pets in addition to the typical transmission to other humans.

References

- Centers for Disease Control and Prevention. (2014). Ringworm. <https://www.cdc.gov/healthypets/diseases/ringworm.html>
- Centers for Disease Control and Prevention. (2022). Ringworm. <https://www.cdc.gov/fungal/diseases/ringworm/health-professionals.html>



OWNERS' GUIDE TO TOXOPLASMOSIS

A brief guide for owners
when a pet is diagnosed
with toxoplasmosis

What is Toxoplasmosis?

Toxoplasmosis is a zoonotic disease caused by a protozoal parasite called *Toxoplasma gondii* which can infect many different species. The most commonly affected species includes cats, goats, sheep, and humans. Although most do not have any clinical signs, some pets may present with diarrhea, fever, or other symptoms such as respiratory disease.

How did my pet become infected?

Cats commonly are infected with *T. gondii* by eating infected mice or birds. It can also be spread through other routes including fecal contamination of water and vegetation, consuming raw animal products such as meat or raw goat milk.

What is a zoonotic disease?

Zoonotic diseases are diseases that can be transmitted from animals to humans. Animals do not have to show signs of illness to transmit some diseases.

How do I prevent myself or others from becoming infected?

Owners of pets infected with *Toxoplasma gondii* should take appropriate actions to prevent transmission to humans. Gloves should be worn when cleaning up pet feces, and hands washed thoroughly afterwards. Owners should not feed pets raw animal products such as raw or undercooked meat or unpasteurized milk, and cats should be kept indoors.

Should I seek medical treatment?

Most people do not need to seek medical treatment if a pet has toxoplasmosis. However, pregnant or immunocompromised individuals should consult with their primary medical provider due to risk of severe health complications in the fetus.



Scan to learn more about toxoplasmosis from the Centers for Disease Control and Prevention (CDC).

One Health Briefs For Practitioners: Toxoplasmosis

What is Toxoplasmosis?

Toxoplasmosis is a zoonotic disease caused by the intracellular protozoal parasite, *Toxoplasma gondii*.

T. gondii can infect nearly all warm-blooded animals, however, cats are the only definitive host.

How is Toxoplasma spread?

Toxoplasmosis is the leading cause of death due to foodborne disease. Consumption of contaminated water, produce, and raw or under-cooked animal tissues, such as meat, are the most common routes of infection.

Other methods of transmission include fecal-oral from improper hygiene techniques when cleaning cat feces or gardening, and transplacentally from mother to fetus.



Veterinary Medical Professionals

Common signs and symptoms: Most patients are typically asymptomatic. However, some patients may present with diarrhea, fever, emesis, abortion, and/or respiratory, ocular, or neurological disease. Species of most concern include cats, goats, and sheep. This disease can be fatal in some cats.



Diagnostics: A centrifugal fecal exam can be performed to determine if cats are shedding the protozoan in their feces due to intestinal infections. Serologic testing can be performed to detect systemic infections in cats as well as other species.

PPE: Veterinary staff should use gloves when working with patients or fecal material. Hands should be washed after removing gloves and following exams or diagnostics tests on suspect animals.

Owner Communication: Owners, especially those who may be pregnant, should be informed of the zoonotic potential and encouraged to talk to their medical provider about diagnostic testing if concerned. Veterinarians should discuss safe methods of cleaning pet feces and that cat feces is typically only infectious for two weeks, and stress the importance of keeping cats indoors.

Human Medical Professionals

Common signs and symptoms: Although most patients infected will be asymptomatic, fever, muscle pains, and other flu-like symptoms can develop. Pregnant women infected are at the highest risk of complications, including spontaneous abortion. Fetuses with congenital infections can develop serious conditions such as ocular disease, mental disability, or seizures.

Diagnostics: The most common test used for the diagnosis of Toxoplasmosis is serology. Immunofluorescence (IFA) stains can be used to detect the protozoal organisms from tissue biopsies and cerebral spinal fluid.

Patient Communication: Patients should be asked about their diet and food handling techniques, including if raw or under-cooked animal tissues or raw goat milk are included in their diet. Patients should also be asked if they have had any exposure to animals, especially cats that are allowed to hunt or eat raw meat based diets, if they have come into contact with sand boxes that may be used by cats, and about hobbies, such as gardening, which may expose people unknowingly to cat feces.

References

American Veterinary Medical Association. (2023). Toxoplasmosis. <https://www.avma.org/resources/pet-owners/petcare/toxoplasmosis>

Centers for Disease Control and Prevention. (2023). Toxoplasmosis. <https://www.cdc.gov/tularemia/index.html>



OWNERS' GUIDE TO TULAREMIA

A brief guide for owners when a pet is diagnosed with tularemia

What is Tularemia?

Tularemia, also called Rabbit Fever, is a zoonotic disease caused by the bacteria *Francisella tularensis*. The disease can cause varying symptoms depending on the species infected and method of infection.

How did my pet become infected?

Tularemia can be transmitted through multiple pathways. Most commonly, infection happens from the bite of an infected tick or consuming animal tissues or milk from infected animals.

What is a zoonotic disease?

Zoonotic diseases are diseases that can be transmitted between animals and humans. Animals do not have to show signs of illness to transmit some diseases.

How do I prevent myself or others from becoming infected?

Pets infected with tularemia are no longer considered infectious after 72 hours of antibiotic treatment and clinical improvement. Pet owners should use flea and tick preventatives to avoid future infections. They should also work to reduce fly populations and use tick repellents in infested areas. People should avoid animal bites/scratches and seek medical care if they feel unwell.

Should I seek medical treatment?

People who are exposed to Tularemia positive animals should contact their medical provider to determine the next steps.



Scan to learn more about tularemia from the Centers for Disease Control and Prevention (CDC).

One Health Briefs For Practitioners: Tularemia

What is Tularemia?

Tularemia, also called Rabbit Fever or Deer Fly Fever, is a disease caused by the gram-negative coccobacillus, *Francisella tularensis*.

Tularemia has over 100 host species with the most common being rodents, rabbits, cats, humans, dogs, sheep, and birds.

How is Tularemia spread?



Tularemia is primarily spread through arthropod vectors. Tick species in the U.S. that can transmit the bacteria are the American Dog Tick (*Dermacentor variabilis*), Wood Tick (*Dermacentor andersoni*), and the Lone Star Tick (*Amblyomma americanum*). Deer flies (*Chrysops* spp.) can transmit the bacteria as well.

Other methods of transmission include contact with or consumption of infected animal tissues or contaminated water, cat bites, and inhalation.

Veterinary Medical Professionals

Common signs and symptoms: Symptoms vary based on route of entry with ulceroglandular tularemia being the most common type. Signs in cats and rabbits can include lymphadenopathy, lingual or oral ulcers, abscesses, fever, splenomegaly, and hepatomegaly.

Diagnostics: Veterinarians with patients suspected to be infected with *Francisella tularensis* should contact the Kansas Veterinary Diagnostic Laboratory to submit samples. Necropsies should only be performed by a qualified pathologist under a biosecurity hood.

PPE: Veterinary staff should use gloves, eye and face shields, and gowns when working with suspected infected animals. All surfaces and instruments that contact the animal should be cleaned with an appropriate disinfectant.

Owner Communication: Owners should be informed of the zoonotic potential and that animals treated with antibiotics are no longer infectious after 72 hours. Clients are encouraged to discuss health concerns with their local health department or medical provider.



Human Medical Professionals

Common signs and symptoms: Symptoms vary based on route of entry with ulceroglandular tularemia being the most common type. Most signs are non-specific and can include fever, chills, headache, malaise, and chest pain.

Diagnostics: The most common diagnostics used for Tularemia in human patients include culture and serology. Wounds believed to have caused the infection should be cultured. Suspected cases without wounds or ulcers should utilize serology.

Patient Communication: Patients should be asked if they have any exposure to animals such as cats or rabbits, whether domestic or wild, as well as raw or under cooked meat. They should also be asked if they have been to an area infested by ticks or deer flies, or if they have recently mowed. Patients should be informed that there is no evidence that Tularemia can spread from person to person.

References

American Veterinary Medical Association. (2003). Tularemia facts. <https://www.avma.org/tularemia-facts>
Centers for Disease Control and Prevention. (2018). Tularemia. <https://www.cdc.gov/tularemia/index.html>

One Health Briefs For Practitioners: Zoonotic Influenza

What is Zoonotic Influenza?

Influenza, commonly called the flu, can infect multiple different species. However, most influenza viruses are species specific and not zoonotic.

Although uncommon, influenza A is known to occasionally be spread from animals to humans. The most common animals implicated in the spread of the disease to humans include poultry and swine.

How is Influenza spread?

Influenza virus is primarily spread through aerosolized respiratory droplets. Outbreaks are most likely to occur when large quantities of sick animals are kept in close quarters with limited ventilation or airflow.



Veterinary Medical Professionals

Common signs and symptoms: Swine typically present with respiratory disease with signs including coughing, conjunctivitis, and pyrexia. Poultry infected with influenza often present with both respiratory and digestive symptoms and very high mortality rates.



Diagnostics: Common diagnostic tests used to identify influenza virus in poultry and swine include RT-PCR, virus isolation, and ELISA.

PPE: Veterinary professionals who come into contact with poultry, swine, or other animals potentially infected with influenza should use caution. Gloves should be worn while handling animals and hands should be washed afterward. N-95 masks are also recommended to be worn.

Owner Communication: Owners of animals infected with influenza should be informed of the risk of zoonotic infection. They should be encouraged to avoid face-to-face contact with their animals, wash hands immediately after handling or feeding sick animals, and consult their healthcare provider if they develop fever, cough, or other upper respiratory symptoms. Depending on the species, public health monitoring may occur after an individual has been exposed to zoonotic influenza.

Human Medical Professionals

Common signs and symptoms: Zoonotic influenza presents with the same symptoms as typical influenza found in humans including fever, sore throat, cough, conjunctivitis, and fatigue. Although typically uncomplicated, some patients, especially those who are immunocompromised, may have more severe symptoms including encephalitis, sepsis, or even death.

Diagnostics: Multiple different tests are available to diagnose influenza, the most common being the “rapid influenza diagnostic tests” (RIDT). Other tests available include rapid molecular assays, RT-PCR, viral culture, or immunofluorescence assays.

Patient Communication: Patients presenting with symptoms of influenza should be asked if they regularly work with or come into contact with animals such as poultry or swine. Although zoonotic influenza infections are rare, rapid identification is necessary. If you suspect your patient has zoonotic influenza, contact the state or local health department for confirmatory testing. Patients who work with ill swine or poultry animals should be encouraged to use PPE, including fit-tested N-95 masks.

References

World Health Organization. (n.d.). Zoonotic Influenza. <https://www.who.int/news-room/spotlight/influenza-are-we-ready/zoonotic-influenza>

Centers for Disease Control and Prevention. (2022). Influenza (flu). <https://www.cdc.gov/flu/other/animal-flu.html>