

THE FRIESIAN

ZOON

Just Who's

I recently came across a paragraph in one of my online journals that described the death of U.S. woman who had been traveling in India. The woman was in the country on a yoga retreat and was unfortunately bitten by a puppy outside her hotel. The wound was washed with water at the time but she received no further treatment. She returned to the United States where she presented at a U.S. urgent care with pain in her right arm, for which she was prescribed painkillers. She was, in fact, already infected with rabies and most likely destined to die. Approximately 6 weeks after the puppy bite, the woman, who was being treated in a hospital for shortness of breath, anxiety, insomnia and difficulty swallowing water, became progressively more agitated and combative and was gasping for air when drinking water. She was diagnosed with rabies and, despite aggressive treatment (Milwaukee protocol), she did not improve and subsequently died.

Rabies is a classic example of a zoonotic disease. So what exactly is the definition of a zoonotic disease? According to the CDC (Centers for Disease Control and Prevention) website, "zoonotic diseases (also know as zoonoses) are caused by infections that are shared between animals and people". Because these diseases can cause sickness and even death in people, the CDC is always tracking and reporting them. Zoonotic diseases are very common and can be caused by viruses, bacteria, parasites and fungi. Some animals can



ZOO NOTIC DISEASES

Threat to Whom in the Barn??

by Dr. Katherine Fox
Fenway Foundation for Friesian Horses

appear healthy even though they may be carrying harmful germs that can cause sickness in people. From the CDC website: "Scientists estimate that more than 6 out of every 10 known infectious diseases in people are spread from animals, and 3 out of every 4 new or emerging infectious diseases in people are spread from animals".

So how are these germs spread? Through direct contact (petting an animal or an animal bite or scratch, for example), indirect contact (water, soil, food dishes, for example), some are vector-borne (such as ticks or mosquitoes) while others are foodborne (undercooked meat or unpasteurized milk can be sources).

Who is at risk for contracting a zoonotic disease? The short answer is that anyone can become sick from one of these diseases, even if they are otherwise healthy. But certainly there are those groups of people that may be a higher risk and should take additional precautions to protect themselves, such as immune compromised people, the elderly and young children.

How can you protect yourself? Simple things like keeping your hands clean which means washing them with soap and water after being around animals or using a hand sanitizer if soap and water is not available. Know the basics when it comes to being safe around animals to avoid being bitten or scratched. Use methods to decrease the incidence of mosquito, tick and flea bites. Educate yourself about food safety, whether that food is intended for you or for your pets or other animals. Be aware of the potential for zoonotic diseases when visiting petting zoos, animal exhibits or when traveling.

So, getting back to rabies, in the United States dog rabies has largely been eliminated through strict vaccination laws. Yet the virus remains very common in other parts of the world, such as Africa, Asia and Latin America. According to the CDC, rabies virus kills approximately 59,000 people a year globally. Rabies is almost 100% fatal once the symptoms become evident, but it can take weeks for symptoms to appear, increasing the potential risk of exposure of other people to the virus. In the United States, bats are the primary source of human rabies deaths, but raccoons, foxes and other animals have also been involved in transmission of the virus to humans. A vaccination is available that can be given as a preventative but also is highly effective even if given after a bite if it is given to the person before they are showing any symptoms. Certainly rabies is one of the most important diseases that we, as humans, need to be aware of in our interactions with the animals around us.

I have included 2 tables with this article. One table covers some of the more common zoonotic diseases that one might encounter in the day-to-day contact with horses and other animals that commonly inhabit the barn or farm property. When thinking about zoonotic disease, probably the most important piece of information we might want easy access to would be the most common symptom for each of these diseases and this information is organized in a separate table.



Table 1

HUMAN	Horse	Dog	Cat	Other Livestock	Wildlife
	Rabies	Rabies	Rabies	Rabies	Rabies
	Brucellosis	Brucellosis	Toxoplasmosis		Bird Flu
	Lyme Disease	Lyme Disease			Psittacosis-birds
	Cryptosporidium	Cryptosporidium	Cryptosporidium	Cryptosporidium	Cryptosporidium
	Salmonella	Salmonella	Salmonella	Salmonella	Salmonella
		Campylobacteriosis	Campylobacteriosis	Campylobacteriosis	
		External Parasites	External Parasites		
		Internal Parasites Tapeworm Hookworm Roundworm	Internal Parasites Roundworm	Internal Parasites Swine	Internal Parasites Raccoon
	Leptospirosis	Leptospirosis		Leptospirosis	Leptospirosis
		E. coli	E. coli	E. Coli (esp. calves)	E. Coli (deer)
	Ringworm	Ringworm	Ringworm	Ringworm	
			Pasteurellosis	Orf Virus-Sheep/Goats	
	EGE(same tick/same organism as HGE)		Cat Scratch Disease	Yersinosis (raw or undercooked pork)	
		Capnocytophagosis	Capnocytophagosis		
	Encephalomyelitis		Q Fever		
	Sporotrichosis	Sporotrichosis	Sporotrichosis	Sporotrichosis	Sporotrichosis
	Hendra				Hendra (fruit bats)
	Anthrax		Tularemia Plague	Anthrax	Tularemia Plague - Rodents
		Giardia	Giardia	Giardia	Giardia
	vCJD (linked to BSE in cattle)			BSE - cattle	
	MRSA	MRSA	MRSA		
				Swine Flu	
				TB	TB

EGE – Equine Granulocytic Ehrlichiosis
HGE – Human Granulocytic Ehrlichiosis
vCJD – variant Creutzfeldt-Jakob disease
BSE-Bovine Spongiform Encephalopathy
TB – Tuberculosis, very low risk of transmission

Lyme Disease–Contact with infected ticks on animals can lead to human disease.

MRSA – Methicillin-Resistant Staph aureus (usually not clinically relevant in the horse)

External Parasites – mites, fleas, ticks,

For more information, please visit cdc.gov and reference the section covering diseases that can spread between animals and people.

Table 2

Disease	Most Common Presenting Symptom(s) in Humans
Rabies	Difficulty swallowing water (hydrophobia)-classic symptom
Brucellosis	Fever, sweats, fatigue, headache, pain (muscle, joints, +/- back pain)
Toxoplasmosis	Mild flu-like symptoms. pregnant women -miscarriage, stillborn child, child born with congenital issues
Bird Flu	Flu-like symptoms, conjunctivitis (mild to severe symptoms)
Lyme Disease	Fever, headache, fatigue, skin rash
Psittacosis	Fever, headache, dry cough, pneumonia
Cryptosporidium	Watery diarrhea
Salmonella	Diarrhea, vomiting, fever, abdominal cramps
Campylobacter	Diarrhea (often bloody), fever, abdominal cramps
External Parasites	Scabies-temporary itching, skin rash (self limiting if contracted from a pet)
Internal Parasites	Hookworm-skin lesions Tapeworm-proglottids passed in bowel movement Roundworm-fever, coughing, enlarged liver, pneumonia, eye issues
Leptospirosis	High fever, headache, chills, jaundice, red eyes, muscle aches, rash
E. Coli	Watery or bloody diarrhea, fever, abdominal cramps, nausea, vomiting
Ringworm	Itchiness of the affected skin with a rash that's reddened, scaly, circular.
Pasteurellosis	Pain/swelling/redness at the site of the bite/scratch (progresses rapidly)
Orf Virus	Skin lesions that begin as small papules that become ulcerative, fever, lethargy
HGE	Sudden high fever, headache, muscle aches, chills, weakness, fatigue. *Same tick/same organism as with horses but humans are infected by a tick bite If your horse has EGE, humans need to be aware of the risk of HGE.
Cat Scratch Disease	Mild infection at the site of the scratch/bite, fever, headache, poor appetite, swollen lymph node
Capnocytophaga	Blisters/redness/swelling/pus/pain around the bite wound, fever, diarrhea
Encephalomyelitis	Fever, confusion, drowsiness, hallucinations
Q Fever	Fever, chills, fatigue, muscle pain (flu-like symptoms)
Hendra	Severe flu-like symptoms. Can progress to encephalitis
Sporotrichosis	Skin-small, painless bump red/pink/purple in color that can enlarge/ulcerate
Anthrax (4 forms)	Inhaled form: flu-like symptoms, mild chest discomfort, shortness of breath Cutaneous: skin lesions that are slow to heal. GI: nausea, vomiting. Oropharyngeal: sore throat, difficulty swallowing.
Tularemia	Fever with all forms of this disease. Ulceroglandular(most common)-skin ulcer
Plague (3 different forms)	Bubonic - fever, headache, chills, weakness, swollen lymph nodes Septicemic - fever, chills, extreme weakness, abdominal pain, shock, bleeding into the skin/other organs Pneumonic - fever, headache, weakness, shortness of breath, chest pain, cough
Giardia	Diarrhea, gas, greasy stools that tend to float, abdominal cramps
vCJD	Dementia, early neurological signs (associated with BSE in cattle)
MRSA	Skin infection-bumps/infected area that's red, swollen, painful, +/- pus or drainage
Swine Flu	Flu-like symptoms (fever, lethargy, poor appetite, coughing)
Tuberculosis	Coughing that persists, coughing up blood, chest pain when breathing/coughing, unintentional weight loss, fatigue, fever, night sweats, chills
Yersinosis	Diarrhea, low grade fever, abdominal pain (right lower quadrant), vomiting