

Petting zoos are very popular events. They can range from small displays at short-term events like agricultural fairs to large permanent operations. Petting zoos can provide a wonderful opportunity for people, especially children, to see and interact with animals - something many may not be otherwise able to do. In addition to the enjoyment of the experience, exposure to animals can be beneficial for other reasons as well, such as educating the public about animals, fostering an understanding of the human-animal bond, and creating greater empathy for animals. However, like any contact with animals, there is also potential for transmission of infectious diseases at petting zoos.



Can People Really Get Sick From Going To Petting Zoos?

Yes, they can. Petting zoos have been linked with numerous outbreaks of diseases such as *E. coli*, cryptosporidiosis, salmonellosis and dermatomycosis (ringworm), to name a few. Most likely, many more people actually become infected from going to petting zoos, but if only a few people are affected (*sporadic cases*) and it doesn't cause a larger outbreak, then the cases may not be identified, reported or linked back to the petting zoo.

Considering the number of people that visit petting zoos and the number of *reported* infections that occur, **the chances of acquiring an infection are quite low**. However, sometimes the diseases that occur can be serious and some basic, practical precautions can reduce the risks.

How Do People Usually Get Infected At Petting Zoos?



- Most of the infections of concern associated with petting zoos are spread via the **fecal-oral route**, meaning the bacteria or parasites are shed in the **feces** (stool or manure) of an animal and transmitted to people (or other animals) who **swallow** them. This usually happens when people get **fecal contamination on their hands**, which is then transferred to the mouth.
- At petting zoos, fecal contamination can be present anywhere on an animal's body, or any other surface such as gates, walls, floors, troughs and other equipment. Bacteria or parasites can be present on an animal or a surface even if the fecal contamination is not readily visible, although direct contact with more highly contaminated areas (i.e. where fecal contamination is obvious) is of greater concern as higher numbers of infectious organisms are likely to be present.
- A few infectious diseases, such as ringworm, can be spread simply **by touching** an infected site on an animal.
- Transmission of infectious agents **through the air** is a very minor concern at petting zoos. The most important disease that can be transmitted this way is Q-fever (*Coxiella burnetii*), which is primarily associated with goats and sheep around the time they give birth.

Zoonotic Diseases From Petting Zoos

The following are some of the more important diseases that people can potentially contract from exposure to animals commonly used in petting zoos. Please refer to individual disease information sheets (if available) for additional details.

Bacterial infections that cause diarrhea:

- ▶ Several species of bacteria that can cause diarrhea in people can be passed in the stool of animals. These include *Salmonella* and *Campylobacter* (particularly in poultry and cattle) and *E. coli* O157 (particularly in cattle). Numerous outbreaks of *E. coli* O157 infection have been linked to petting zoos. All of these bacteria can also be shed in stool of normal, healthy animals. They are all transmitted by ingestion, or contamination of the hands or food that is then transferred to the mouth.

Cryptosporidium:

- ▶ This is a protozoal parasite that causes diarrhea. One of the species of *Cryptosporidium* that commonly affects people is also commonly found in calves, which may or may not also show signs of diarrhea. Although most people recover from the disease on their own after several days, infection can be much more serious, or even fatal, in people with weakened immune systems.





Q-fever (*Coxiella burnetii*):

- ▶ *Coxiella burnetii*, the bacterium that causes Q-fever, is highly infectious and can cause serious disease people, particularly pregnant women. The organism is shed in large numbers by infected sheep and goats around the time of birthing, which is a high-risk period for transmission to people. *Coxiella* can also be spread through dust in the air, and very few bacteria are needed to cause infection, even in healthy individuals.



Dermatophytosis (ringworm):

- ▶ This is a fungal skin infection caused by one of several species of *Microsporum* or *Trichophyton*. In humans it can cause areas of red, raised, itchy skin that are often lighter in the centre and therefore appear as a “ring.” The fungus is transmitted by contact with the skin, hair or dander of an infected animal, particularly if the person’s skin is damaged or moist. In petting zoos, young cattle and horses with skin lesions are most likely to carry these fungi, but they can also be carried on the skin of some animals with no signs of infection.

Rabies:

- ▶ This is a viral infection of the nervous system that is almost always fatal once clinical signs appear. Although it is uncommon in petting zoo animals it is still an important concern. Transmission occurs when the saliva of an infected animal comes in contact with a wound (such as a bite or scratch) or mucous membrane (e.g. eyes, nose, mouth). In the past, when a rabid animal has been found at a petting zoo, large numbers of people have had to undergo post-exposure treatment for rabies.



Who Needs To Be The Most Careful?

In general, young children (less than 5 years of age), elderly individuals, pregnant women and people with weakened immune systems are at greater risk for both picking up an infection in the first place and for having more serious illness as a result. These individuals need to be extra careful around any kind of animal, and some species or types of contact are best avoided altogether. Talk to your doctor about your degree of risk and how to reduce it.

If I Don’t Touch Any Animals, Will That Keep Me From Getting Sick?

No. People don’t need to have direct contact with the animals at a petting zoo to get sick. Outbreaks of illness have occurred in people that only had contact with the petting zoo environment (e.g. gates, fences), so hand hygiene is important for everyone who enters a petting zoo area, not just the people who do the petting!

It’s Not Just The Bugs!

Don’t forget that there are **other potential hazards at petting zoos** besides infectious diseases. Bites, kicks, scratches and other types of injuries can also occur. Some animals can be very unpredictable, but many will give warning signs if they are about to lash out. Always pay close attention to what the animals are doing. It’s also very important to supervise children very carefully in petting zoos - it’s just as important that they keep their fingers out of the animals’ mouths to prevent bites as it is to keep their fingers out of their own mouths to keep them from getting sick!



What Animals Are Good For Petting Zoos?

- Animals with **good temperaments** that are used to contact with people, and therefore less likely to bit, kick or accidentally injure someone.
- **Healthy animals** that are at relatively low risk of shedding infectious pathogens because of what species they are and/or how they are kept, and **common species** for which the risks are well understood.
- Although baby animals are very cute, **adult animals** are lower risk because young animals are more likely to shed infectious bacteria and parasites.
- **Some examples** of excellent petting zoo animals are adult sheep, goats, ponies, miniature horses, llamas, alpacas and small cattle breeds.

What Animals Are NOT Good For Petting Zoos?

- Although they’re very popular, **baby ruminants** (e.g. **young calves, kids (baby goats) and lambs**) are the most likely to shed harmful microorganisms (e.g. *Salmonella*, *Cryptosporidium*) in their manure. These animals are best seen but not touched - they should not be used in petting zoos.



- **Pregnant sheep and goats** that are close to the time of delivery should be avoided. The risk of transmission of Q-fever from such animals is highest around the time of birth.
- Contact with **reptiles** (e.g. **turtles, snakes, lizards**), even healthy ones, is an important risk factor for *Salmonella* infection in people, and should therefore be avoided.



- Contact with **young poultry** (e.g. **baby chicks**) is also a high risk for transmission of *Salmonella*. These baby birds should not be handled. Having chicks on display in an enclosure is safe as long as people cannot come in contact with the animals or their bedding.
- Potentially **dangerous animals** such as large cats (e.g. tigers), wild canids (e.g. wolves) and other large predator species (e.g. bears) should never be used in petting zoos, regardless of how they were raised or how “tame” they appear.

Although some of these animals are very well trained, even unintentionally they can cause (and have in the past caused) very serious, even fatal, injuries.

- **Non-human primates** (e.g. monkeys, apes) should not be physically accessible to the public, as these species can carry many diseases (including viruses) that are transmissible to humans.
- Species that are known **reservoirs of rabies** (e.g. raccoons, skunks, bats, foxes and coyotes) should never be used in petting zoos.

It is widely recommended that **children** less than five years of age should not have contact with **baby ruminants, reptiles** or **young poultry**. Since children are the most frequent attendees at petting zoos, this is another important reason not to use these animals in such displays.



What Makes A Good Petting Zoo?



- **Ready access to hand hygiene stations:** This includes running water with liquid soap and disposable towels and/or alcohol-based hand sanitizers. Hand hygiene stations should be accessible to everyone who accesses the petting zoo, especially children.
- **Healthy animals:** All animals should appear clean, healthy and well cared for. There should be no evidence of diarrhea (either in the pens or on an animal’s tail or rear end), skin lesion (e.g. scabs, crusts, missing patches of hair) or other abnormalities.
- **No high-risk animals:** If high-risk animals are present, there should be no means of contact between the public and these animals or anything inside their enclosures.
- **No food:** Food should not be allowed in the petting zoo area, and should certainly not be for sale there.
- **Prominent signs:** Signs should be clearly visible to remind people to wash their hands, not to have food or drink in the exhibit, and other general safety tips for being around the animals.
- **Supervision:** There should be easily-identified personnel paying close attention to the people and the animals in the petting zoo to help prevent problems.
- **Cleanliness:** Manure and soiled bedding should be removed regularly from the animal pens, and kept or disposed of away from public areas.
- **No smoking:** This is a major fire hazard around the bedding used for most petting zoo animals.
- **Petting zoo only:** No other activities, events or displays should be in the same area as the petting zoo. This allows for better traffic around the zoo, and most importantly through the hand hygiene area after people have finished petting the animals.

Can I Feed The Animals?

Feeding petting zoo animals (if permitted by the organizers in the first place) is acceptable with a few precautions:

- There should be a **barrier** (e.g. fence) between the animals and the people to prevent people from being knocked over or injured by animals trying to get the feed.
- **Animal feed must be unmistakably for the animals.** For example, feed should not be provided in ice cream cones (which is commonly done), because someone, especially a small child, might take a bite from the cone.
- **Never put your fingers in an animal’s mouth.** Feed offered by hand should always be placed on the flat of the palm.



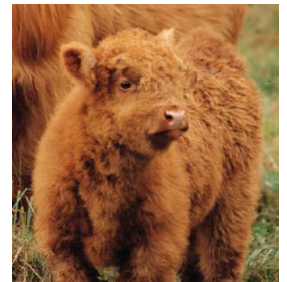


Birthing Exhibits

Birthing exhibits are places where you can watch animals giving birth, usually sheep or goats. These displays are now uncommon, but occasionally still encountered. There are **ethical concerns about the stress** of putting an animal that is about to give birth in a strange, loud and busy environment. There are also **infectious disease risks**, primarily about **Q-fever** in sheep and goats, which has caused large outbreaks of disease in people associated with birthing exhibits in the past. If birthing exhibits are held, the public should have no contact with the animals. Ideally the birthing should occur in a glass-enclosed area to prevent any contact or airborne transmission of *Coxiella*. Indoor exhibits must be properly ventilated. The public should never have contact with the newborn animals or the birthing area itself.

Infection Control For Petting Zoos – What You Can Do

- **Watch children closely.** Make sure they don't come into contact with high-risk animals (e.g. calves, kids, lambs, reptiles, baby birds), and that they don't put themselves in situations where they may be bitten, scratched, kicked, or knocked over. **Individuals with weakened immune systems** should take the same precautions.
- Don't bring into the petting zoo area:
 - Food or drink
 - Anything else that may end up in a child's mouth (e.g. baby bottles, pacifiers, toys)
- Stay out of the animal pens themselves. **Petting is best done over or through a gate or fence.** This helps prevent people from being knocked over or coming into contact with animal manure.
- **Don't touch animals that look sick or dirty**, especially if they have diarrhea or skin lesions.
- If you have any **broken skin** or sores, keep them covered and prevent the area from coming in contact with any animals or any objects or surfaces in the animals' environment.
- **Never put your fingers in an animal's mouth.** Young animals, particularly calves, will often try to suck on fingers – this may seem harmless, but it can lead to an inadvertent bite or other trauma from the teeth, which are quite sharp.
- **Always wash your hands thoroughly** after leaving the petting zoo, even if you didn't touch an animal. Hand washing is a very important protective measure.



What Should I Do If I Get Sick After Visiting A Petting Zoo?

Any illnesses that might be associated with a petting zoo should be reported to your local public health unit. This is particularly important if diarrhea, vomiting or skin disease develops within a week or two of a visit to a petting zoo, because problems with a petting zoo may not be identified if people don't report that they are sick.

If you notice any obvious problems with a petting zoo, such as a lack of hand hygiene stations, this should also be reported to your local public health authorities as soon as possible.

Zoonotic Disease Risk

The zoonotic disease risk associated with petting zoos depends on a lot of factors, including what kind of animals are present, how the facility is managed, and personal precautions. In general, the risk of transmission of a zoonotic disease from a well-run petting zoo, if appropriate hand hygiene is performed after touching the animals, is:

