

## ***Salmonella* Infection Is Something To Avoid**

### **What is *Salmonella*?**

*Salmonella* is a genus of common bacteria. At least 2000 types are known. The bacteria produce toxins that irritate the intestinal lining of the animal they infect. Some strains cause illness in horses, and others are responsible for infections in cattle and other animals. A number of types cause disease in more than one species; a few are quite specific, affecting only one host species. Humans share a susceptibility to some of the same strains that affect horses, so handlers of sick animals need to take precautions against infection.

*Salmonella* bacteria are widespread in the environment. Although they are destroyed by exposure to direct sunlight, they can live for a long time in soil and bedding or on surfaces such as stall walls. A number of antibiotic-resistant strains have emerged, and these tenacious varieties add to the challenge of protecting horses from infection.

### **What are the signs of a *Salmonella* infection?**

Signs of infection can vary from horse to horse. In adult horses, the most common manifestations are diarrhea, colic, depression, elevated temperature, and loss of appetite, but not all signs are present in every case. As the disease progresses, continuing diarrhea leads to dehydration. The disease may progress into septicemia (widespread infection), producing endotoxins that cause laminitis. Occasionally a horse dies as a result of *Salmonella* infection.

Foals that develop *Salmonella* infections frequently show depression and fever as the first signs. In these young horses, septicemia commonly causes swollen, painful joints. Foals may not show the characteristic diarrhea, especially in early stages of infection.

### **How does a horse become infected?**

Horses may develop signs of illness after exposure to animals that are in an active stage of infection, or if they have been around “shedder” horses (those that don’t show signs of illness, but shed large numbers of bacteria in their manure). The bacteria can be spread from an infected animal, which could be a horse, dog, cat, squirrel, or even a bird or a reptile. Horses can pick up bacteria when they eat grass or hay, drink water, or come in contact with surfaces that have been contaminated by manure from an infected animal.

### **Are some horses more susceptible than others?**

Any horse can pick up a *Salmonella* infection. Horses are more susceptible to *Salmonella* infection if they have recently taken antibiotics, drugs that influence intestinal motility, or any medication that damages the intestinal lining. Horses recovering from colic or colic surgery seem to be at greater risk, as are those that have been off their feed for any reason. In the small percentage of horses that harbor the bacteria constantly without showing signs of disease, individuals may become obviously ill if they are stressed by disease, travel, work, or other factors.

## What treatments are available?

In many horses, illness caused by *Salmonella* runs its course in five to seven days. After this period the horse slowly recovers, although it may take several weeks before manure consistency returns to normal. In these cases, supportive care may include administration of electrolytes and fluids, as severe diarrhea can quickly lead to dehydration. Pain medications and anti-inflammatories are sometimes given to keep the horse comfortable. Antibiotic therapy is rarely the first treatment choice. Antibiotics are not very effective against some strains of *Salmonella*, although their use may deplete populations of helpful bacteria.

## How can horses be protected from *Salmonella*?

Healthy horses are at a much lower risk of infection than those whose immune system is compromised in some way, so minimizing stress and illness is an important method of preventing problems. A horse that has normal digestive tract function, and therefore a healthy and balanced population of gut microflora, is also less susceptible. As mentioned above, medications like antibiotics or non-steroidal anti-inflammatory drugs that challenge the environment or integrity of the gut can provide an opportunity for infection. These medications should be used as directed by a veterinarian, not given indiscriminately, to avoid stressing the gastrointestinal system.

## What management strategies can keep *Salmonella* at bay?

*To prevent the introduction of Salmonella into a disease-free barn:*

- Disinfect shoes and equipment when returning from a show or event where other horses are present.
- Do not allow horses to eat off the ground at a show, trail ride, or other event.
- Isolate new horses for several weeks before allowing them to have contact with other horses.
- Because veterinary hospitals care for so many sick horses, it is not unusual for a clinic to harbor *Salmonella* bacteria, often the antibiotic-resistant strains, despite stringent control measures. These clinics are subject to periodic outbreaks of infection, at which time they often limit admissions and postpone elective surgeries until the infection can be subdued. Owners may want to monitor a horse returning from a stay at a veterinary clinic for signs of disease.

*To prevent the spread of disease while caring for an affected horse:*

- Isolate the sick horse, caring for it after other horses have been handled.
- Disinfect boots, hands, and equipment such as rakes and wheelbarrows as soon as they leave the sick horse's stall.
- Use care in disposing of manure and bedding from stalls of infected animals. Don't spread this material on fields where other horses are turned out. Composting will eventually kill the bacteria.
- Keep barn animals (cats, dogs, goats) away from the affected horse, and attempt to seal the stall against mice and other barn pests.
- Anything touched by a sick horse must be cleaned to prevent the spread of disease. This includes trailers, tack, buckets, tools, grooming implements, stall, and the horse's handler (hands, boots, clothing, and so on). Check with a veterinarian for disinfection guidelines. This can be a complicated process, but is extremely important to prevent the spread of disease.
- Even after an affected horse seems to have recovered from a *Salmonella* infection, it may shed bacteria in its manure for several weeks. Some hospitals require at least five days of negative cultures before a horse is pronounced free of disease. Be sure the horse is completely healthy before it is allowed to contact other horses.



**Reprint Courtesy of  
Kentucky Equine Research, Inc.**

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