

Equine Grass Sickness

What is equine grass sickness?

There's something strange about the idea that grass can make horses sick. After all, what's more natural than horses turned out on pasture, muzzles buried in lush greenery? Nevertheless, equine grass sickness (EGS) is a **mysterious and often-fatal disease that strikes down healthy young horses** as they graze. Most cases have occurred in **England, Wales, and Scotland**, but EGS has also been seen in Europe and South America. *Mal seco*, an equine disease reported in South Africa, appears to be identical.

Is equine grass sickness just another name for grass founder or grass tetany?

Equine grass sickness is **not the same thing as** grass founder, which can occur when sugar-sensitive horses consume too much fructan-laden grass. Grass tetany is a magnesium deficiency disease that affects cattle grazing fresh pasture; it's not a problem that involves horses.

What are the signs of EGS?

Early clinical signs resemble those of **mild colic**. As the disease progresses, horses show **patchy sweating, muscle tremors, elevated heart rate, difficulty in swallowing, and sluggish or absent gut motility**. Acute cases almost always result in the death of the horse within one to five days after signs appear. Horses with subacute EGS may survive for a few weeks, showing progressive weight loss before finally succumbing to the disease.

A chronic, low-level type of EGS is characterized by the same signs, but can be treated by intensive veterinary care. **Some horses survive chronic EGS** but they usually lose a great deal of weight.

What treatments are available?

Although the acute and subacute types are almost always fatal regardless of treatment, horses with chronic EGS may survive if they can be persuaded to eat **high-energy concentrated feeds**. Intravenous **fluid therapy** is used to prevent dehydration. Cisapride, a human medication that **increases gut activity**, has been helpful in some cases.

What is the outlook for horses with EGS?

Horses with **chronic EGS** lose hundreds of pounds of body weight due to a progressive degeneration of nerves that control gut function. As the disease passes, they start to regain condition and can **usually return to work** or training over a period of several months.

What causes EGS?

Years of study and speculation followed the first description of this disease early in the twentieth century. Several theories were advanced as to the cause, including one that focused strong suspicion on

botulin toxicity. The most recent studies have confirmed a **definite link to *Clostridium botulinum* type C organisms**, with affected horses having lower levels of antibodies to *C. botulinum* type C and its toxins than those found in control animals. However, the soil-dwelling botulin organisms are widespread and are presumably encountered many times by grazing horses. The question remains as to why some horses develop grass sickness while others do not.

What are the major risk factors?

A study at the University of Liverpool has identified factors associated with cases of EGS.

- **Some premises have a high incidence** of EGS, while other nearby areas are unaffected.
- More cases are found in areas with **acidic loam and sand soils**; fewer cases occur where the soil is composed of clay or chalk.
- Risk is increased with **soil disturbance** such as that caused by mechanical manure removal.
- Risk is lowered when fields are also grazed by **ruminants**, but the presence of domestic **poultry** raises the risk.
- Although foals seem to be protected, **young horses** (up to about five years old) are the most common victims, possibly because they have not had enough exposure to bacteria to build a protective level of antibodies.
- Animals that are under **increased stress** due to castration, breaking, or shipping are more susceptible.
- Risk is higher in horses that have had any **change in feeding schedule** such as increased or decreased amount of concentrate, change in concentrate/forage ratio, turnout after a period of stalling, or grazing a different pasture.
- Recent **deworming with an ivermectin product** seems to be linked to increased risk, although scientists are not sure how to interpret this finding. Owners should not see this link as a recommendation to stop deworming treatments.

Can feed management help to prevent EGS?

Avoiding grazing horses on pasture that has been associated with previous EGS cases is a first step in avoiding problems. However, EGS may be more complicated than a simple infection in that a combination of factors must be present to produce illness. It is likely that a rare form of bacteria and a certain soil type conducive to its growth must occur together, and a horse may need to be particularly susceptible to develop the disease. Horses that are stressed and those that have had recent changes in feeding regimen seem to be at greater risk, possibly because these changes cause slight shifts in pH or other gut environment parameters. **Making such changes slowly over a period of several days** is a wise management technique in any case, and may help to minimize the chances of a horse getting EGS. Until further research is done, there are still unanswered questions about this malady.

Can research offer answers?

The latest studies seem to indicate that EGS is an opportunistic toxicoinfection by a particular strain of *C. botulinum* type C. There is some evidence that this rare variety has a slight variation in the plasmid structure of its protein makeup. Future research will need to determine if this theory is correct. Effective vaccines already exist to protect horses against infection with *C. botulinum* types A and B, and there is hope that a **vaccine can be developed to target the specific strain that causes EGS**.