

MUD FEVER, MALLENDERS AND SALLENDERS

What can you do about it?



HOW DO MUD FEVER, MALLENDERS, AND SALLENDERS DEVELOP?

Mud fever is an inflammatory skin condition that typically affects the pastern or fetlock joint. Mallenders and Sallenders are similar conditions, occurring on the back of the carpal joint (“knee”) and the hock, respectively. The affected skin may develop wet sores or become dry and crusty. These conditions can range in severity, affecting either a small area of skin or extending along the entire length of the cannon bone.

Mud fever, mallenders, and sallenders can affect all horses; however, breeds with particularly feathery pasterns, such as Friesians, Gypsy Cobs, and draft horse breeds, are especially prone to these conditions. Sebaceous deposits on the front side of the cannon bone, without involving the pastern, are not classified as mud fever, mallenders, or sallenders. But

just like them, these deposits are often linked to metabolic issues. All these skin conditions have similar root causes and will therefore be addressed as “mud fever”. Many horse owners are familiar with these problems, especially during winter, and often attempt to treat them by applying various ointments to their horses.



WHY HYGIENE IS RARELY THE CAUSE OF MUD FEVER IN MODERN STABLES

In the past, unhygienic living conditions were often the primary causes of mud fever. Dirty paddocks and rarely mucked stables provided an ideal environment for harmful bacteria and fungi to thrive, attacking the skin and causing inflammation.

Poor Hygiene Is Not Usually the Cause in Modern Times

Today, poor living conditions are far less common. Stables are typically cleaned daily, and paddocks and pastures are well-maintained.

The Skin Is Normally Well-Protected

The skin has a natural protective layer, supported by skin microbiome (beneficial microorganisms) that shields it from external pathogens. Despite this, horses often develop mud fever during winter. This is frequently blamed on wet or muddy paddocks, but mud alone is not the problem.

Common Cause: Kidney Overload

In most cases, the root cause of mud fever is a metabolic issue. The skin, as the body's largest organ, acts as a secondary excretory system when the kidneys are overloaded. Excess waste is expelled through the sweat or sebaceous glands in a process similar to urine production in the kidneys.

The hooves can also participate in this excretion process. According to Traditional Chinese Medicine, the feet (hooves) are considered "additional kidneys" or "kidney helpers." However, neither the skin nor the hooves are designed to handle large amounts of toxins. This overload can lead to conditions such as mud fever, sweet itch, and, in the case of the hooves, laminitis, thrush, or abscesses.

Still, the root cause for mud fever lies within the detoxification system, even though the symptoms appear as skin issues around the legs and hooves due to toxin excretion.

Winter: A Catalyst for Mud Fever

During winter, metabolic issues are exacerbated. As waste is expelled through sebaceous glands at the lower legs, the skin becomes irritated. Moisture and dirt worsen the irritation, making mud fever particularly prevalent in damp, cold conditions.

Traditional Chinese Medicine suggests that the kidneys are especially weakened in winter due to the climate and limited access to nutrient-rich grass. Factors such as feeding haylage, poor-quality or insufficient amounts of hay, reduced exercise due to weather conditions, and increased stress on small winter paddocks further contribute to metabolic problems.

Each horse reacts differently to these issues. One horse might develop mud fever, while another shows symptoms like thrush, or eczema, even though the underlying causes are similar.

Caution: Sugar Strains the Kidneys

Breeds such as Gypsy Cobs, Friesians, draft horses, as well as native ponies are particularly sensitive to sugar. Modern horse feeds often contain hidden sugar in the form of molasses, processed grains, or apple pomace. Horses are not biologically designed to process such high sugar levels, which can elevate blood sugar beyond what their metabolism can handle.

For draft and native breeds, excessive sugar intake often severely impairs their ability to regulate blood sugar. Elevated blood sugar taxes the kidneys and leading to gradual kidney insufficiency. Unfortunately, visible signs of kidney failure only appear after approximately 70% of the kidneys are already damaged.

Haylage: Harmful for the Hindgut

Haylage disrupts the metabolism due to its high lactic acid bacteria content, which acidifies the hindgut and destroys its natural microbiome. This allows lactic acid bacteria to dominate, but these bacteria are inefficient at digesting cellulose or producing essential nutrients like B vitamins and amino acids. Also, the liver requires significantly more time and oxygen to convert lactic acid from the intestine into glucose.



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Result of Feeding Haylage: Hyperacidity

These factors create a chain reaction that eventually leads to kidney tissue damage. Initially, there is a gradual acidification of the connective tissue and the spaces between cells. While the kidneys work to maintain a normal blood pH level, they deplete their reserves in the process.

The kidneys are also responsible for maintaining a balanced pH in the tissues. When tissue becomes acidified due to absorption of lactic acid from the gut, the kidneys retain more water to dilute the acid. This retention can make the horse appear rounder, leading owners to mistakenly believe the feed is promoting good “muscle” development. However, instead of muscle mass, it is retained water causing the tissue to swell.

This water retention places strain on the cardiovascular system, as the body must exert significant effort to flush lymph through the tissue and adequately supply the cells. The resulting high blood pressure further damages kidney tissue. Unfortunately, these visible effects often only become apparent years later.

Early Warning Sign

Any disruption of the hindgut microbiome leads to a deficiency in activated vitamin B6, which is essential for liver detoxification, also known as biotransformation. When biotransformation slows down—a condition referred to as Kryptopyrroluria (KPU)—more fat-soluble waste products remain in circulation, unable to be excreted through the normal kidney-urine system. As an emergency response, some horses begin to expel these fat-soluble waste products through the sebaceous glands, which are particularly prominent in the leg skin of draft breeds and native ponies. This process results in what we commonly refer to as mud fever. A horse’s digestive system is simply not suited to benefit from lactic acid bacteria.

Mud fever, mallenders, or sallenders are clear indicators that liver and kidneys are no longer functioning effectively and require urgent support.

KIDNEY OVERLOAD THROUGH FEEDING HAYLAGE

Haylage contains lactic acid bacteria that can disrupt a horse’s metabolism. Mud fever or mallenders often indicates an overburdened kidney system.

Lactic Acid Bacteria in the Hindgut

- Cannot digest cellulose
- Cannot activate B vitamins
- Cannot provide essential amino acids
- Produce lactic acid and low pH

Healthy Hindgut Microbiome

- Efficiently converts cellulose into energy
- Activates B vitamins
- Provides essential amino acids
- Requires a neutral pH balance

Effects on the Intestine

- Acidification – a drop in pH levels
- Death of beneficial hindgut microbiome
- Colonization by lactic acid bacteria

Effects on the Body

- Tissue acidification
- Bloating from lymph retention
- High blood pressure in the kidneys, causing gradual deterioration
- Strain on the cardiovascular system

Effects on the Liver

- Biotransformation is impaired due to lack of activated vitamin B6
- High oxygen demand to convert lactic acid into glucose, placing strain on the liver



WHAT CAN BE DONE?

Test Your Stable Hygiene

For horses with mud fever, ensuring proper stable hygiene is the first priority. Rarely mucked-out stalls, “manure bedding,” or unclean paddocks should be thoroughly cleaned and, if necessary, disinfected. They must also be maintained in a clean state going forward.

Muddy paddocks that cannot be regularly cleaned should be stabilized to provide dry and clean footing for the horses, especially around hay racks.

Optimize Feeding

The next priority is optimizing the horse’s diet. This includes providing 24/7 an adequate amount of high-quality, stalky hay to nourish the hindgut microbiome. Haylage and other fermented products must be eliminated, as well as highly sugary feed such as treats, carrots, apples, concentrates, etc. Chaff should also be strictly avoided, since it adds to hindgut dysbiosis.

Colon Restoration

After changing the feed, it’s essential to carry out a colon restoration protocol. For more details, refer to the brochure ‘Colon Restoration’.

Test for Kryptopyrroluria (KPU)

Many horses with mud fever or related conditions have an underlying liver disorder and should be tested for Kryptopyrroluria (KPU). More information can be found in the ‘KPU’ brochure. If the test is positive, this disorder must be treated before beginning any other therapies.

Deacidification After Feeding Haylage

If haylage has been fed, a deacidification regimen is necessary. Administer **OKAPI Prodic** for 2–4 weeks to bind acids in the intestine and help stabilize the gut environment.

Normalize Blood Sugar Levels

If highly sugary feed has been given, horses should be gradually transitioned to a low-sugar diet, such as hay and **OKAPI Four Seasons Feed**. If insulin resistance or EMS is already present, support the horse with the help of a metabolic therapist.

Support the Kidneys

In any case, a course of **OKAPI Spirulina** (in powder or pellet form) is recommended. Spirulina binds toxins in the body, thereby reducing the burden on the kidneys. Additionally, the kidneys should be supported with a six-week regimen of **OKAPI Detox Herbs**.

Skin Regeneration

OKAPI Zinc Plus, **OKAPI Sulphur Plus**, and **OKAPI Wild Seeds** support skin regeneration. For wet mud fever, spray the affected area with colloidal silver daily for one week, followed by a daily application of diluted Effective Microorganisms. This prevents the colonization of putrefactive bacteria. Dry mud fever can be left untreated or, depending on its location and size, treated with a paraffin-free calendula ointment to prevent the skin from cracking and developing festering wounds.

Long-Term Measures

Horses prone to mud fever should receive a winter regimen alternating **OKAPI Detox Herbs**, **OKAPI Immuno Herbs**, and **OKAPI Bitter Herbs** every two weeks. Alternatively, feeding **OKAPI Four Seasons Feed** can help support the metabolism year-round, ensuring a mud-fever-free winter.

To maintain long-term skin health, ensure adequate zinc supplementation with **OKAPI Mineral Feed** and stimulate skin lipid production by occasionally feeding **OKAPI Wild Seeds**.