

Feeding Horses with Leaky Gut Syndrome or Dysbiosis

What is Leaky Gut or Dysbiosis in horses?

Dysbiosis can be defined as a perforated hind gut, an excessively permeable intestine or a condition of erosion and ulceration of the gastrointestinal tract.

Under normal conditions, when animals receive a balanced diet, the intestinal micro-organisms attempt to live in balance with the host animal, termed **sybiosis**. In contrast, **dysbiosis** is when there is overgrowth of these normal organisms, caused by an oversupply of digestible nutrients (sugars and starch), that allow the organisms to multiply rapidly. The over-production of organisms is thought to cause an excessively permeable intestine, and/or a perforated hindgut, termed "leaky gut syndrome". Microbial population upsets, and subsequent damage to the intestinal mucosa, allows leakage of sugar molecules, bacteria and pathogens into the bloodstream causing it to become toxic.

How do I know my horse has Leaky Gut or Dysbiosis

- Stiffness and joint soreness can also be related to leaky gut syndrome. This results when antigen/antibody complexes are deposited in the tissues.
- Toxins released into the bloodstream can also cause fever of unknown origin and general fatigue.
- Other symptoms include memory loss, mood swings, and shortness of breath, poor exercise tolerance, or hyperactivity.
- Intestinal symptoms include irritable bowel syndrome, inflammatory bowel disease, or bacterial infections in the bowel.

Ref: Leaky Gut Syndrome by Madalyn Ward, DVM

<http://www.holistichorsekeeping.com/resources/articles/leakygut2.html>

What causes Leaky Gut or Dysbiosis in horses

Examples of Dysbiosis include Candidiasis caused by *Candida albicans* in humans, and Enterotoxaemia (pulpy kidney) caused by *Clostridium perfringens* in cattle. In cattle, pulpy kidney disease will cause death within hours of feeding new, highly digestible pastures and grain.

In horses, the absorption of glucose into the cell is facilitated by insulin released from the pancreas. When higher than normal levels of glucose are present, increased amounts of insulin are released, to increase the uptake of glucose into the cell. When horses are fed high levels of sugars and starch (NSC) that exceed the normal digestive capacity of the gut, the excess NSC is used as a food source by the resident microbial organisms, causing proliferation of these organisms, possible damage to the gut mucosa, and increased glucose absorption.

For more information or to order CoolStance/PowerStance, please
call 803-647-1200 or e-mail Claudia@stanceglobal.com

The flooding of excess glucose into the blood due to dysbiosis results in "rushes" of insulin. High insulin levels can either cause a;

- decrease in future insulin levels leading to high blood sugar (diabetes),
- erratic insulin levels leading to low blood sugar (hypoglycemia) or
- Insulin resistance where insulin receptors in the cells become damaged and unresponsive meaning blood glucose isn't transported into the cells.
- Horse then goes from being insulin sensitive to insulin resistant

The high blood sugar also stimulates the adrenal gland to increase cortisol production, catabolising proteins and inflaming connective tissue in the hooves, causing laminitis and founder.

Dysbiosis also poses a large health risk as it allows for the passage of harmful pathogens and toxins to enter directly into the bloodstream, as evidenced by the sudden death of cattle to *C. perfringens*. Dysbiosis also can cause a general build-up of lactic acid interfering with performance, immunity, muscle function and metabolism. Dysbiosis has a detrimental effect on the liver as it is under challenge to filter the toxins from the blood, such that the filtering capacity may be compromised, allowing circulation of free radicals that may exacerbate chronic disease, e.g. laminitis.

How diet helps Leaky Gut or Dysbiosis in horses

Feeding high levels of sugars and starch (NSC's) to horses and ponies increases the chances of leaky gut or dysbiosis, especially if more than 50% of the ration is made up of sweet feed (i.e. grain and molasses). The increased chance of leaky gut is due to the absorption of high levels of glucose and the production of high levels of insulin. Rapid changing of feed rations or diets may impact the gut flora and result in dysbiosis.

Recommended Stance Horse Feed for Leaky Gut or Dysbiosis in horses

Possible feeding strategies to avoid dysbiosis include;

- Selecting feeds that do not oversupply digestible nutrients, in particular sugars and starch (<12% NSC)
- Feeding natural products such as medium chain triglycerides (MCT) that are reported to have possible antimicrobial actions to preserve gut health

The **Stance Equine Feeding System** outlines several feeds including;

- **CoolStance** contains <12% NSC, and yet provides a high level of digestible energy (DE) from non NSC sources (i.e. from digestible fibre and oil) to support growth in young horses. .
- **CoolStance** and **PowerStance** contain MCT in the coconut oil.

For more information or to order CoolStance, please
call 803-647-1200 or e-mail Claudia@stanceglobal.com