

SCRATCHING OUT ALLERGIES

Imagine this: A young girl races to the stable early one morning in anticipation of going to the year's most important horse show. As she eagerly unlatches the stall door, she finds her beloved pony covered in squishy bumps of all different sizes. He's draped in them, from the tip of his muzzle to the top of his dock. He's uncomfortable, too, pressing shoulders and barrel against the stall wall in an effort to scratch. The veterinarian arrives in haste and inspects the bumps, called wheals, for firmness, pressing into them with her forefinger. Each of them pits similarly. An injection of dexamethasone resolves the wheals quickly and the pony appears thankful for the reprieve in itchiness. He returns to his fluffy pile of hay, seemingly unaffected by the appearance and disappearance of the mysterious bumps.

What caused the unsightly welts? The answer may lie in the feed tub, and the culprit may have been a food allergy.

But is it truly an allergy? Or, is it an adverse reaction to food? What's the difference between the two? According to Dawn Logas, DVM., Dipl. ACVD, of the Veterinary Dermatology Center in Maitland, Florida, a distinction exists between an allergy and an adverse reaction to food. Allergy, said Logas, implies an immunologic reaction to an ingested substance, but not all food sensitivities are truly allergic in nature. Adverse reaction to food, on the other hand, covers both immunologic and nonimmunologic reactions to food substances.

"Nonimmunologic food sensitivities include metabolic, pharmacologic, and idiosyncratic reactions," said Logas. "An example of this would be itching resulting from the histamine content of a food, instead of from an allergic reaction to the food itself."

In the veterinary community, treatment of immunologic and nonimmunologic food reactions is identical, so veterinarians use the term "food allergy" to indicate an adverse reaction to food.

A Little Sensitive

The immune system is a complex network of organs and cells that defends the body from foreign proteins. Its primary functions include identifying disease-causing proteins, called antigens, and neutralizing them by mounting an appropriate defense, which involves the creation of antibodies. When the immune system functions flawlessly, with antibodies destroying antigens, the horse remains free of disease.

In some instances, however, the immune system inexplicably overreacts to the presence of an antigen. This exaggerated immunologic response is called hypersensitivity and can result in inflammation and organ dysfunction.

In cases of a food allergy, the antigen must pass through the intestinal wall and into the bloodstream in order to be exposed to the immune system. In healthy, robust horses, the ever-selective intestinal wall prevents the passage of potential antigens. But if the intestinal wall is not fully developed, as with a young horse, or compromised, as with a diseased or aged horse, transit across the intestinal wall may occur, leaving the horse vulnerable to hypersensitivity or allergic reaction.

He's Allergic to What?

Like humans, horses can have food allergies to common, everyday feeds. Here's a list of specific feedstuffs and forages that have definitively brought about allergic reactions (severe pruritis and other dermatological problems) in our hooved friends. In addition to those listed, various ingredients in feed additives and supplements may induce a food allergy.

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|-----------|-----------------|
| alfalfa | malt |
| barley | oats |
| beet pulp | potatoes |
| bran | soybean hulls |
| buckwheat | soybean meal |
| chicory | St. John's wort |
| clover | wheat |

Do You Suspect an Adverse Reaction to Food?

Conducting a food allergy investigation is a time-consuming endeavor, so a veterinarian may first rule out more common dermatological problems including external parasites (mites or lice, for instance), fungal infections such as dermatophytosis, bacterial folliculitis (inflammation of the hair follicle), and atopy, an inherited predisposition to environmental allergen sensitivity. Horses are known to exhibit contact dermatitis following exposure to a variety of agents, including organophosphate pesticides, heavy metals, aniline dyes found in tack, bedding, topical medications, soaps, shampoos, blankets, neatsfoot oil, and wool.

From a clinical standpoint, signs of a food allergy in the horse are extremely variable and may include:

- pruritus (itchiness), in varying degrees
- papules, small circumscribed, superficial skin elevations
- excoriations, linear or rounded erosion of the skin by mechanical insult like a scratch or abrasion
- erythema, redness of the skin due to capillary dilation
- alopecia, loss of hair
- crust, a formation of dried blood, pus, or other skin fluid over a break in the skin
- vasculitic lesions, severely swollen areas of the body (usually the legs)
- gastrointestinal upsets

Once the veterinarian has excluded other dermatological problems, a detailed history will be sought. Information such as patient's age at onset, time of year at onset of condition, seasonality, environmental conditions, and changes in environment and their effect on signs will be recorded. Vaccination and deworming schedules will be reviewed, as will past and current illnesses.

The veterinarian's attention will eventually turn to the diet. Expect to divulge everything about what the animal consumes: commercial feed, hay types (long-stem, traditional hay or alfalfa cubes, for example), pasture (types of grasses seeded in the field), nutritional supplements, even treats.

If the history reveals nothing out of the ordinary, the only reliable way of establishing a diagnosis of food allergy or adverse reaction is by performing an elimination diet, which involves feeding a restrictive diet. A thoughtfully planned elimination diet starts with one protein source and one carbohydrate source to which the horse has had no previous exposure. In practice, this will be a challenge with most horses!


For horses with access to high-quality pasture, all additional feed can be stopped during the diet. If improvement occurs during this time, the pasture can be eliminated as the source of the adverse reaction. If, however, there is no improvement in four to six weeks, then disallow all pasture feeding for another four to six weeks and implement a new diet. Remember, all new feeds must be introduced gradually to avoid gastrointestinal upset.

Hives: What's All the Buzz About?

Hives is a skin ailment characterized by multiple, flat-topped, itching eruptions that are likely produced by toxic irritating products of plants, insect stings or bites, the inhalation or ingestion of allergens, sensitivity to foods, bedding, or an allergic reaction to foreign proteins in serums, vaccines, and antibiotics. Hives may appear anywhere on the body. In advanced cases, they may occur in the mucous membranes of the mouth, nose, eyes, rectum, and vagina. Other names, some historic, for hives include nettle rash, protein bumps, heat bumps, or sweet feed bumps. A medical term for hives is urticaria.

A good-quality hay of a different type than what is normally offered should be found and fed first. For instance, if your horse is accustomed to timothy hay, try to locate an orchardgrass, fescue, or clover hay to become the basis for the diet. Signs of food allergy are usually seen in two to three days but may take up to two weeks, so horses must remain on each test diet for four to six weeks. Once the forage switchover has been achieved and no ill effects transpire, it's time to add another component to the diet, which is usually a single-ingredient pellet or a straight grain such as oats. Again, four to six weeks should pass with no reaction before adding another dietary component. If an offending feed is isolated, a veterinarian may wish to rechallenge the horse to confirm the diagnosis.

Unfortunately, elimination diets are not practical for all horses. The most notable exceptions are performance horses that require a steady diet of calorie-rich feeds to maintain their weight during intense exercise. A demanding competition schedule often precludes a horse from being subjected to an appropriate elimination diet. If the adverse reaction to feed is severe enough, competition may have to be forsaken for a while.

At times, identifying a food allergy seems more like trial and error than hard-core science. While diagnosis involves tremendous dedication, the result—a happy, healthy horse—is well worth the effort. 



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