

Hives

Your horse is telling you there's something wrong; the problem is, it's in Braille.

By Nancy S. Loving, DVM

At all times a horse's body is under siege from the abundance of microorganisms present everywhere. A healthy immune system keeps these minute organisms at bay as inflammatory cells wage invisible battles to repel foreign proteins (antigens) attempting to invade the body. Normally, the immune system holds its line of defense without the horse even knowing that its immune system is at work.

When microbes invade and colonize, a horse shows clinical signs of disease. But occasionally, an immune response overreacts to a noninfectious cause. Such a hypersensitivity response is referred to as an allergy; it can range from a serious, life-threatening systemic reaction (anaphylaxis) to a mild, but disagreeable, skin reaction such as hives or itching.

Hives are a clinical sign rather than a specific disease. Also referred to as urticaria, hives tend to develop about the neck and shoulders, along the thorax, and on the buttocks. *Urtica* is Latin for "stinging nettle" and if you've ever walked through a copse of stinging nettles, besides immediate discomfort you'll appreciate just how quickly bumps form on your skin. Horse owners often refer to these bumps as feed bumps, protein bumps, or heat bumps, since these terms describe some causes of hives. Usually, an allergic reaction remains localized to the skin, but if clinical signs persist or are not arrested early on, there might be a systemic response as the internal workings of a horse's body wage war on the offending allergen.

What is an Allergy?

Constant surveillance by a horse's immune system helps it recognize foreign proteins as a threat. In response, the immune system manufactures antibody proteins directed toward specific antigenic targets. Patrick Hensel, DrMedVet, Dipl. ACVD, is a board-certified specialist in dermatology at the University of Georgia College of Veterinary Medicine. He explains, "An allergic reaction usually is not present with first exposure to an allergenic protein. Clinical signs start to appear once the skin becomes sensitized and re-exposed to an offending allergen."

Because hypersensitivity reactions take weeks to months or even years to develop, a sudden onset of hives is not necessarily a result of a recent change; this makes it difficult to pin down the actual source of the problem.

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Hensel notes, "Many causes of urticaria have been identified, including medications such as antibiotics, antiparasitic drugs, hormones, vaccines, foods like plants, hay, and supplements, or are due to hypersensitivities like an adverse food reaction, contact allergy, or genetically linked atopy (an allergic reaction with strong family tendencies). Occasionally urticaria develops from bacterial, fungal, or parasitic infections, or from stinging insects."

Allergen-specific antibodies (immunoglobulin E, or IgE), preprogrammed on first exposure, trigger a Type I hypersensitivity reaction the next time they encounter that antigen. The unique structure of IgE antibodies

allows them to bind to the surface of mast cells (resident cells of connective tissue) and basophils (specialized white blood cells) and sensitize them. When sensitized mast cells again contact the allergen, they release biochemical substances such as prostaglandins and histamines, which elicit a cascade of inflammatory events. Once this chain reaction is under way, localized inflammation begins within minutes of the chemical summons.

Hives can develop on the skin in as few as 15 minutes or up to 24 hours following exposure to a foreign protein; luckily, they resolve as quickly.

What are Hives?

Urticaria is seen as localized, raised bumps on the skin. These can vary in number, severity, and frequency of occurrence.

Inflammation induced by allergens causes small veins to dilate and increase capillary permeability in the skin. "Fluid" leaks into surrounding tissues to form wheals or plaques of edema (fluid swelling). These first appear as small, firm lumps, which might coalesce into a large plaque or line of bumps. In a case of noncomplicated hives, overlying skin appears normal with no hair loss and usually no itching.

William Miller, VMD, Dipl. ACVD, chief of dermatology at Cornell University College of Veterinary Medicine and board-certified in dermatology, says other types of horse bumps are composed of cells rather than "fluid" so you can usually tell the difference by their feel. Hives are easily compressed, leaving behind a fingertip imprint of pitting edema, whereas other nodular lesions have cellular infiltration, such as scar tissue or a tumor, and they are firm and noncompressible.

Miller notes that the size of a wheal (hive) is influenced by various things, but, he stresses, "In the broadest sense, the bigger the hive, the more reactive the horse. A typical hive takes between 15 and 30 minutes to reach its maximum size. Once the trigger event is gone, the hive usually only lasts for an hour or so."

In certain situations, though, the hive process can persist. Miller clarifies, "If a horse eats something he is allergic to, hives can last for days. However, an individual hive bump does not last that long. As one hive disappears, a new one appears, making an owner believe that the hives are persisting. The only way to follow a specific hive bump is to circle an individual lesion, then check it hourly."

Hensel notes, "Pollens, foods, and drugs are the most likely 'systemic' causes of hives, which is a common clinical sign in horses with allergies. However, nonallergic factors such as pressure, sunlight, heat, cold, exercise, psychological stress, genetic abnormalities, and adverse reactions to drugs or chemicals need to be kept in mind as potential causes of urticaria."

Any of these factors can intensify an allergic response.

Both practitioners report that insects are not usually a direct cause of hives, unless a horse is allergic to that particular insect. Hensel elaborates: "Papular urticaria are small-diameter (3–6 mm) reddened bumps with the appearance of hives. More typically, insect bite hypersensitivities cause other clinical signs such as seasonal itch. Associated intense itching causes these horses to continually traumatize themselves with scratching, rubbing, and biting. This creates hair loss, crusting lesions, and skin trauma, particularly along the mane, base of the tail, lower thorax, and abdomen."

An allergic response of hives is not usually associated with itching or pain, but in some cases itching is observed.

One other type of allergic manifestation is a disease called atopy, which tends to be a multifactorial problem that includes a genetic predisposition. Anecdotally, Arabians or Thoroughbreds have been reported to be at higher risk. Typically, the problem shows up by age 4, or it can appear in a mature horse when he is moved to a sensitizing environment.

Atopy describes a skin or respiratory allergic response to sensitizing antibodies in the environment. These are often seasonal allergens like pollens, molds, grasses, weeds, trees, insects, or dust mites, and they have been attributable to materials such as blankets or saddle pads. Miller and Hensel stress that atopic horses can be itchy, have hives, or both, making it difficult to identify the underlying cause.

What to Do for Acute Hives?

Call your veterinarian right away in the case of an acute allergic response. Miller says that most horses with hives could care less, but “some horses itch, and for those individuals, cool water soaks might help relieve your horse’s discomfort,” he says. “But in general, I wouldn’t recommend doing anything. You want your veterinarian to see your horse as is and not as modified by drugs or topical medications.”

Hensel reports, “Hives rarely affect the general health of the horse and usually disappear within one to two days. In such cases, treatment is not necessary. In more severe cases, treatment may be indicated with epinephrine and corticosteroids.” Although antihistamines don’t seem to work very well for acute hives, an antihistamine like hydroxyzine might limit the allergic response.

Before implementing any treatment during an attack, your vet will attempt to differentiate an allergic response from infections such as skin parasites or bacterial/fungal (ringworm) infections. Even a few days of corticosteroids can turn a mild infection of the latter into a severe case that is difficult to resolve. In most cases of ringworm, the hair falls out within a few days, whereas there is no hair loss with hives.

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If your horse develops hives, immediately eliminate any new medications or food supplements. In this case, less is more. Rather than trying to fix the problem by adding more supplements or herbs to your horse’s diet, it is often more productive to eliminate everything but hay.

Besides conventional Western medical treatment, other methods are often tried and sometimes useful. Holistic therapy uses acupuncture to address an allergic problem head-on. Regardless of whether the approach to medical management relies on Western or Eastern philosophy, refrain from exercising your horse under saddle when he has hives. Sweat amplifies the physical discomfort around the bumps, and tack further irritates inflamed tissue. Wait a day or two for full resolution before putting your horse back to work.

Identifying the Source

For the one-time occurrence of hives, you might never discover the incriminating source. However, if hives recur, you might be motivated to track the allergen. Start by mentally reconstructing any changes in diet, environment, medications, vaccinations, or stress factors that occurred in recent months. Provide your veterinarian with a list of suspicious items. Time-honored strategies for managing hives eliminate ingestion, contact, or inhalation of as many things as possible.

With a little sleuthing, you might be able to identify the cause and successfully eliminate the problem from

your horse's future. Read more about finding the source and how to reintroduce feedstuffs after determining the cause of food allergies in article <http://www.thehorse.com/ViewArticle.aspx?ID=1773>.

Another diagnostic technique, albeit expensive and time-consuming, uses intradermal allergy testing to try and isolate an allergic source from pollens (plants, bushes, and trees), molds, grasses, weeds, dust mites, insects, and farm plants. The horse should be pulled off medications (steroids or antihistamines) at least 10-30 days prior to testing.

Once a particular antigen has been identified, immunotherapy (historically referred to as hyposensitization) injections might target that allergen. The process is slow and should be continued for at least a year. Hensel describes the process: "By injecting small amounts of allergy vaccine, a horse's immune system should become tolerant to the allergen over time, resulting in mild to no reaction during re-exposure."

Learn more about intradermal and serum testing and immunotherapy <http://www.thehorse.com/ViewArticle.aspx?ID=5262>.

Progressive Allergic Reactions

Hives can turn into something much more serious, called angioedema. Miller describes what happens: "Angioedema is basically a 'deep' hive. In the classical hive, fluid leaks out of the superficial blood vessels in the skin; the amount of fluid that leaks out is limited in its amount because of tissue resistance. With angioedema, the fluid leaks out of deeper vessels where tissue pressures are less, so more fluid can escape, potentially pressing on surrounding tissues. If this develops around a horse's larynx, the airway will narrow and could close entirely, making this a life-threatening situation." Hensel remarks that angioedema most commonly involves the muzzle, eyelids, belly, and legs.

With any allergic condition, there is always concern that the next attack could turn into a severe anaphylactic one. Miller and Hensel agree that anaphylaxis is rare in the horse, but it can occur, with the horse exhibiting immediate restlessness and sweating.

Miller advises what to watch for: "If, at each episode of hives, the bumps seem taller or deeper, the horse might be tending towards anaphylaxis."

Take-Home Message

When purchasing a horse, question the seller about any known allergic responses. Inform your veterinarian, trainer, and barn manager about the dangers of certain drugs or feeds/forages that affect your horse's health. Just as people who are allergic to bee stings or penicillin might wear a necklace or wristband describing this condition, you can prevent an anaphylactic reaction to known substances by advertising this fact about your horse. Place warning sign describing known allergic reactions outside the horse's stall.