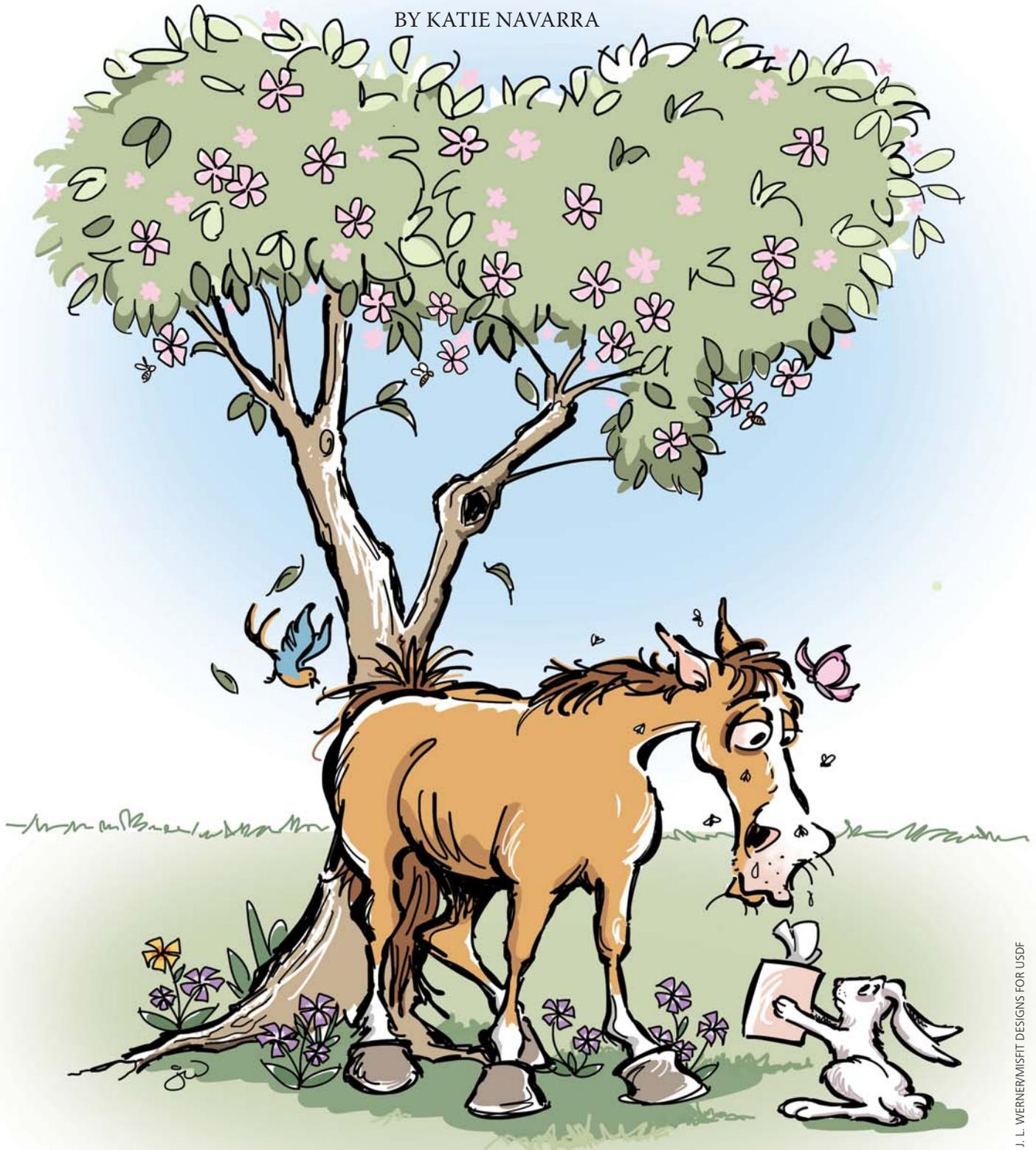


Does Your Horse Have Allergies?

He could actually be suffering from “hay fever”—or sensitivities to all sorts of other things. Here’s how to help him.

BY KATIE NAVARRA



EQUAL-OPPORTUNITY MISERY: *Horses, like humans, can suffer from allergies*

Ah, spring: flowers, lush greenery...and misery for those who suffer from seasonal allergies.

If you yourself aren't plagued by itchy eyes, sneezing, or other symptoms of allergic rhinitis ("hay fever"), chances are you know someone who is. The range of human allergies is well-documented, and horse owners are beginning to discover that our equine friends can suffer from allergies, as well—and that uncontrolled symptoms can have detrimental effects on performance.

Adult-amateur dressage rider Linda Butz, Strafford, PA, had noticed a few oddities about her Friesian/Arabian-cross mare, BR Dannys Secret, in the 11 years since she bought "Secret" from her breeder in Wisconsin. Every summer, the mare's reactions to insect bites were more extreme than those of other horses. And although Secret rested happily in her straw bedding at home, she never lay down when stabled overnight at shows, on the usual bedding of bagged pine shavings.

At first, Butz says, acupuncture sessions seemed to help calm the insect-bite reactions. But as each season passed Secret's sensitivity increased, to the point that the mare was driven so mad by itching that she practically tore out her mane and rubbed the dock of her tail bald. To make matters worse, the mare began having adverse reactions to the rhino/flu vaccine—which in most cases is required for attending US Equestrian-licensed/USDF-recognized dressage competitions. First, Butz says, she noticed minor swelling at the injection site, which was quelled by another acupuncture treatment and doses of the allergy-relief medication Zyrtec. At the same time, despite careful management, ample turnout, and a carefully designed diet, Secret developed a persistent case of gastric ulcers and seemed destined to remain on the equine ulcer medication Ulcergard for the rest of her life. To top off the list of frustrating issues, although Secret had progressed in dressage and was showing successfully at the FEI levels with Butz's trainer, Glenmoore, PA,-based dressage pro Angelia Bean, both trainer and owner thought the mare's performance wasn't quite what she was capable of.

The lightbulb finally went on in 2017, after Secret reacted so severely to a rhino/flu vaccine that Bean suggested that Butz get the mare tested for allergies.

The results were shocking. Secret was allergic to nearly everything in a typical barn environment—pine trees (thus her reluctance to lie on shavings at shows), dust, even the alfalfa hay she was being fed in hopes that it would calm her ulcers.

"I don't have allergies," Butz says, "so I didn't think about them" as a possible cause of the mare's woes. "I felt so bad, like we were poisoning her."



PICTURE OF HEALTH: Her allergies finally under control, the Friesian/Arabian mare BR Dannys Secret gleamed at the horse inspection at the CDI Devon (PA) 2017

Allergies: The Immune System Gone Wild

We want our bodies and our horses' to fight off disease and infections. When the immune system detects the presence of bacteria, viruses, or other foreign matter, it mounts a response to destroy the invading cells. But sometimes the immune response becomes overenthusiastic, treating foods, dust, pollen, or other innocuous substances as threats to be overwhelmed. The resulting abnormal response is what's known as an allergic reaction.

Allergies in horses can be as problematic as they are for human allergy sufferers. In horses, the most common allergy symptoms are hives and itchiness from insect bites and sensitivity to shampoos or detergents. Coughing can be a sign of allergies, as can swelling at an injection site.

Every little bump from a bug bite or passing cough isn't necessarily a sign of capital-A allergies. But as in Secret's case, when clinical symptoms affect a horse's quality of life and ability to perform, it's time to involve a veterinarian and to discuss the possibility of allergies.

How Common Are Equine Allergies?

The Centers for Disease Control (CDC) and other organizations have documented that allergies in humans—from food allergies to rhinitis—are on the rise. The epidemiology

of equine allergies has not yet been studied, says Rosanna Marsella, DVM, professor of veterinary dermatology at the University of Florida College of Medicine, Gainesville. But she, for one, believes that allergies are becoming more common in horses and dogs.

Why this is the case isn't fully understood yet, says Marsella, but she like many other researchers believes that the "hygiene theory"—the belief that overzealous use of antibacterial agents and insistence on "sanitized" environments hampers a body's ability to develop normal immune responses to everyday environmental pathogens—may be partially to blame.

"Before lifestyle changes that prioritized cleanliness," Marsella says, "the body was busy fighting internal parasites and bacteria. A healthy exposure to dirt and beneficial bacteria can actually educate the immune system to be more tolerant rather than reactive."

Food allergies in herbivores, including horses, are rare, says Laura Petroski, BVMS, a staff veterinarian at the equine-nutrition research company and manufacturer Kentucky Equine Research (KER), Versailles, KY. Environmental allergies, she says, are more common in herbivore species.

"It has been documented well in humans, cats, and dogs that these species experience a combination of allergies triggered by insects, food, drugs, and the environment," Petroski says. "Perhaps in horses being fed more commercial diets, we may start to recognize a similar trend."

Citing the results of a 2006 study, "Equine Dermatology," by veterinarians Anthony A. Yu and Stephen D. White (*AAEP Proceedings*, Vol. 52), Petroski notes that horses have been known to show adverse reactions to barley, beet pulp, bran, buckwheat, chicory, clover, lucerne, malt, oats, potatoes, St. John's wort, wheat, and feed additives; but that the primary food-related equine allergies are associated with alfalfa, wheat, corn, and soy.

Another culprit can be peanut hay, an alfalfa alternative fed mainly in the South, which Marsella says is extremely allergenic and frequently causes hives.

"Things that are high in protein are more allergenic than others," she explains.

Allergies Are All over the Map

Apart from food sensitivities, most allergy triggers are environmental—substances that cause an immune response when they're inhaled or when they contact the skin or are injected, as in the case of bee stings, insect bites, or vaccines. Your horse's environment consists of a unique combination of plants, molds, and insects, combined with the

local climate. If he happens to be allergic to one or more things that commonly exist in the air he breathes or take a bite out of him on a summer's day, he may show symptoms.

Geography plays a macro role in allergies, as well. "This is one reason that warmbloods bred and raised in Europe or in northern climates struggle to adapt when they are sold and relocated to southern states," says Marsella. "They are not equipped to handle the pollen and insect pressure in these environments."

Petroski compares the phenomenon to her own experience. A native of northern Illinois, she has lived in Kentucky for two years, during which time her seasonal allergies have flared up. Unfortunately for Petroski, the aptly named Bluegrass State has prolific amounts of tree, grass, and weed pollens as well as of mold spores. That's why some hay-fever sufferers find relief in drier climes.

"The environment and climate in Kentucky are very favorable in exacerbating these allergies," Petroski says. "Arizona and New Mexico have arid landscapes with little vegetation, so allergy symptoms are not as common or severe in areas like these."

In addition, research has shown that certain breeds of horses are predisposed to allergies. The University of California – Davis study "Equine Atopic Skin Disease and Response to Allergen-Specific Immunotherapy" (Stepnik, Outerbridge, White, & Kass, 2011) found that Dutch Warmbloods, Morgans, Swedish Warmbloods, Oldenburgs, Hackney horses, Paso Finos, Polish Arabians, and Arabian/Saddlebred crosses were overrepresented.

"This suggests that allergies are a heritable disease," Petroski says of the findings.

Some horses' resistance to allergies (or lack thereof) may literally be skin-deep. Marsella was the lead author on a study that found ultrastructural (uber-microscopic) abnormalities in the skin of people and animals with allergies ("First Case Report of Ultrastructural Cutaneous Abnormalities in Equine Atopic Dermatitis," *Research in Veterinary Science*, June 2014). Although the skin's surface may appear smooth, it is packed with millions of epithelial cells, which are cells that line the surfaces of the body. In healthy skin, fats called ceramides fill the spaces between the cells and offer protection against foreign substances, including allergens. But in some horses, the skin structure is not as tightly organized. "This means that even though the skin looks OK, ultrastructurally it's not," Marsella explains, "and that may create predisposition to increased absorption of pollen and development of allergies, even though the horse doesn't have clinical symptoms yet."

Diagnosing Allergies

Marsella recommends testing for allergies if a horse's symptoms are prolonged. There are currently two types of diagnostics: a blood-serum test and intradermal allergy testing (IDT).

Butz's veterinarian opted for the first method, sending a sample of Secret's blood to a laboratory that measured the mare's levels of allergen-specific immunoglobulin E, which is an antibody that is strongly linked to the body's allergy response.

If you or someone you know has undergone allergy testing, then you may be familiar with the second method, IDT, which involves injecting minute quantities of potential allergens under the skin and measuring the tissue's inflammatory response. Equine IDT testing is typically performed under sedation, says Petroski.

"An area to be used as a testing site—typically the neck—is shaved free of hair, and allergens are injected intradermally in a grid pattern. Skin-test reactions are assessed after fifteen minutes, after four hours, and sometimes at twenty-four hours after inoculation."

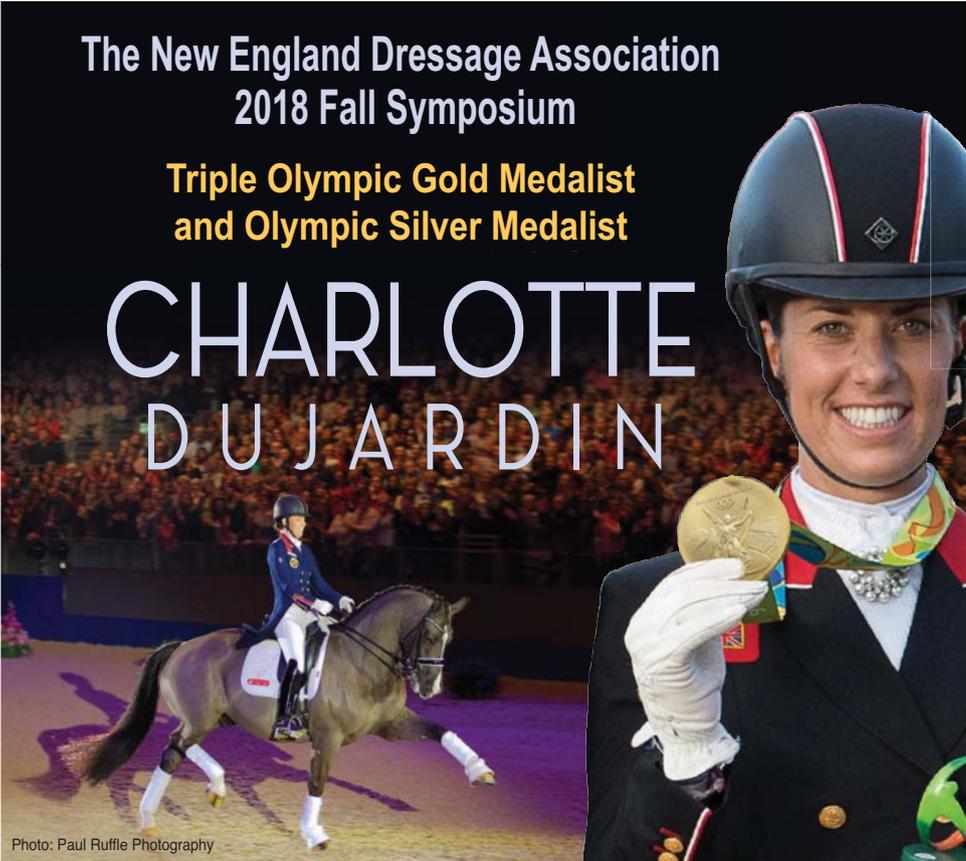
The complex nature of IDT testing means that many equine veterinarians refer clients to specialists or to university veterinary hospitals for the procedure. Because the University

of Florida is a teaching hospital, "We subsidize the cost so we can show students how effective [IDT] is," Marsella says.

According to our experts, the blood test and IDT aren't interchangeable. For one, "many times the results of the skin and blood test don't correlate in findings because they are testing for different things," Marsella says. Secret's lab test screened for "high positive," "low positive," or negative allergic reactions to pollens (12 types of grasses, 12 weeds, and 15 tree species), foods (12 commonly ingested substances, including carrots and apples), inhalants (10 types of mold plus nine assorted airborne substances, from "house dust" to hair and dander from cats, dogs, humans, and even horses), and seven types of biting insects. IDT, by comparison, tests for 60 potential allergens, says Marsella.

To complicate matters, blood testing may not be an ironclad way of determining allergies because "blood testing has a significant percentage of false positives," according to Marsella. In other words, a normal horse may test positive for one or more substances yet may never show clinical signs of hypersensitivities.

There is one category of allergen, however, for which IDT is not the gold standard. In cases of suspected food allergies, IDT is not as useful in pinpointing the culprit because some allergy symptoms may be triggered by more than one aller-



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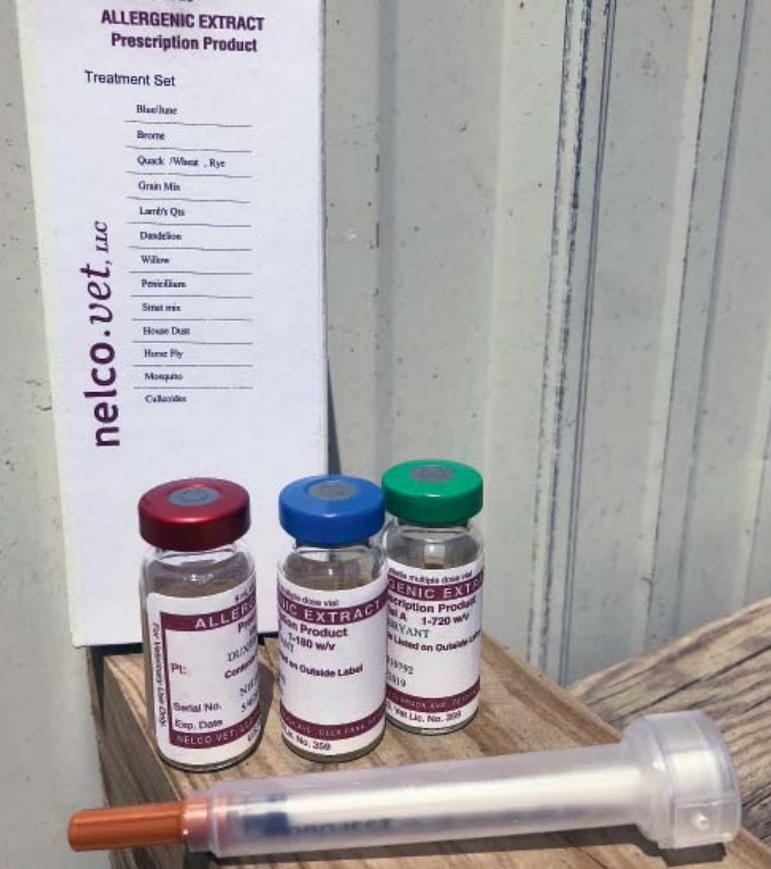
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IMMUNOTHERAPY: *When a horse is allergic to items that can't be eradicated from its environment, a course of "allergy shots" may offer the best hope for lasting relief from symptoms*

gen, Petroski says. She recommends a food-elimination diet (which we'll discuss in more detail in a minute) as the best method of identifying which foodstuffs are problematic.

Controlling Allergies

Horses with allergies—and their performance in the dressage arena—don't have to suffer. A combination of management changes and allergy treatments can significantly improve a horse's quality of life. And a horse that feels better tends to do better in its work.

Although it's not always possible to expunge an allergen from a horse's environment, avoidance—or at least reducing exposure—is the simplest solution. Butz now totes bales of straw to shows instead of buying bagged shavings for the pine-allergic Secret. Likewise, turnout is the ticket for a horse with allergies to inhaled "indoor" substances, such as dust and molds, says Petroski.

"Changing the location of your horse may greatly improve clinical signs," Petroski continues. If this isn't possible, she encourages owners to follow researchers Yu and White's recommendations, which include switching to bedding made of shredded cardboard or newspaper, or simply lining stall floors with thick, well-cushioned rubber mats. Such steps "can significantly reduce a horse's exposure to airborne dust particles, which is especially important for recurrent airway obstruction ['heaves'] cases," she says.

Soaking hay in water before feeding is a long-standing method of reducing dust. The use of hay steamers has become a popular alternative for some horse owners—although Marsella points out that, although steaming is helpful if the allergens are dust, molds, or bacteria in the hay, it won't do any good if the horse has a food allergy to the hay itself.

If your horse is hypersensitive to insect bites, job one is to make his environment as pest-free as possible. Use fans in stalls and grooming areas. Keep stalls clean, and manage manure appropriately to curb insect populations. Consider keeping your horse stabled during times of high insect activity. When he goes out, use fly masks, fly sheets, and repellents as appropriate to help protect him. (Learn about eco-friendly pest-control methods in "Working with Nature to Control Nature," April.)

Environmental or contact-dermatitis allergies may be calmed with the aid of various topical creams and sprays. Shampoos and topical steroids are products shown to have positive effects on the clinical signs associated with allergies. "Bathing helps quiet the skin and remove topical irritants, and it encourages owners to look over their horses to monitor the resolution or worsening of clinical signs," says Petroski, who favors using cool water for additional skin calming.

If your horse is suspected of having a food allergy, then the trick will be figuring out which foods are his triggers. Petroski adheres to the protocol of taking the horse off all supplements and drugs, then feeding one of his regular food items. Reintroduce additional food items gradually, one at a time. If the horse is allergic to a reintroduced food item, he will show clinical signs—typically hives or skin bumps—within 24 to 72 hours, she says.

"New diets should be introduced gradually if possible," Petroski says. "Veterinary supervision should be utilized at the beginning of and during a dietary trial, not only to ensure horse health and safety but to confirm that the trial is being conducted correctly."

Based on the results of her mare's allergy testing, Butz reevaluated Secret's diet. She stopped feeding alfalfa and double-checked the ingredients lists of the supplements she uses. Secret is currently thriving on a diet of soaked timothy cubes, oats, a ration balancer, and flax, Butz says.

In some cases, management changes alone aren't enough to control allergies. Immunotherapy ("allergy shots") is extremely effective in treating respiratory allergies, says Marsella. She's treated horses that started off needing bronchodilators and steroids, and "six months after immunotherapy, they are off all the other drugs completely."

"Compared to a life of steroids, which bring the risk of founder, we think the cost [of allergy testing and treatment] is effective," Marsella adds.

One horse owner who's been pleased with the results is Butz, who for the past nine months has been giving Secret allergy shots. The mare's course of immunotherapy started out as every-other-day injections and has since tapered to monthly shots. Butz says that the shots are "relatively easy and inexpensive, especially compared to other types of injections."

The combination of allergy treatments and dietary changes has changed Secret's life significantly. Within the first six weeks, Butz reports, her mare's mane, tail, and haircoat were looking better, and over time she was able to wean her off ulcer medication altogether. Best of all, she says, Secret's performance has improved.

"Sometimes I ride with [local FEI 4* dressage judge] Jeanne McDonald," Butz says, "and she's commented on the difference in Secret since we discovered that she has allergies."

Systemic corticosteroids, which can be administered orally or via injection or inhaler, help immensely. However, because of possible adverse effects associated with long-term corticosteroid use (it's thought to increase the risk of laminitis), Petroski discourages owners from utilizing this treatment modality for anything but flare-ups.

"Injectable forms [of systemic corticosteroids] are typically dexamethasone. Inhaled forms are typically beclomethasone or fluticasone," says Petroski. "Dexamethasone

is 'legal' to be given therapeutically, but owners must be aware of consequences resulting from giving the drug too closely to a competition. Owners must educate themselves about the US Equestrian rules regarding corticosteroid use before choosing to include the drug in a treatment plan."

A Team Effort

Hives, itching, hair loss, coughing—if your horse persistently displays these or other signs of possible allergies, talk to your veterinarian. Note when symptoms are most prevalent, whether it's seasonal, after eating, after being stall-bound for a while, after the application of a topical product, and so on. Your veterinarian can guide you in evaluating symptoms and, if warranted, in getting your horse tested for allergies and formulating the best approach to controlling the clinical signs. Allergy symptoms may mimic those of other ailments, so don't self-diagnose or treat your horse without consulting your vet.

"The investment in the testing and treatment, and the change in Secret's diet, have been worth it," says Butz. "She's more comfortable, and hopefully it will extend her life and career." ▲

Katie Navarra is an award-winning writer based in upstate New York. A lifelong horse lover, she competes in ranch-horse events with her dun Quarter Horse mare.



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