

# EXTRA




**BECOME A  
SELF-CONFIDENT  
LEADER FOR YOUR**

**Sporhorse  
Nutrition  
Know-How**

*Brought to you by*





# You know it's been a week since we took our trail. Well, I'm waiting.

You understand your horse's likes and dislikes like no other. Just as deeply as you share a connection with them, we share a commitment to keeping them healthy. That's why our nutritionists have created a wide choice of feeds in the form of light and airy extruded nuggets to provide exceptional nutrition.



Scan to find their feed or  
visit [FeedSentinel.com](https://FeedSentinel.com)





# BECOME A SELF-CONFIDENT LEADER

Build communication with your horse using simple, time-tested tools to figure out what he needs—and let him know what you want.

**By Sharon White with Sandra Cooke**  
**Photos by Susan J. Stickle**

**W**e ride and compete because for us there is nothing better in the world than the horse/rider connection. Yet we know it's not always perfect. I teach many clinics for riders of all levels, and I often need to help students who are passionate about riding but whose enjoyment of their horses is compromised by a lack of confidence.

I don't have a magic formula for building rider confidence, but I have something almost as good: tools a student can use to address just about any issue she is having with her horse. My starting point is that in the competitive partnership that is your relationship with your horse, there needs to be a leader and that leader must be you.

This is Royal Alyance, by Riverman son Royal Appearance out of My Martina (a Thoroughbred steeplechase mare). Owned by Wit's End Eventing of Thurmond, North Carolina, and now going Training level, he's 7 years old and was a stallion until late in his 5-year-old year. He has not been easy, for certain. He has a very big opinion of himself! So everything that's in this article is essentially what I've had to do with him. Because he was gelded late, I've had to establish at each point in his training that HE is not the leader of ME. As we'll see in these photographs, he loves to jump, but I've had to convince him that it's up to me to tell him when and where and how.

Think about it. You're the only one in the partnership who knows the plan—where you're going and what you're doing. You're the only one who knows whether you're turning right or left in the dressage ring, when the water jump is coming up on cross country or which show-jumping fence in the ring is next on course.

So you have to be the leader. What's more, your horse likes having you in charge. A timid horse could need anything from detailed instructions to encouragement whereas a confident or aggressive type might do better with a minimal amount of suggestion and direction. In any case, the key to communicating with your horse, figuring out what he needs and letting him know what you want—in other words, making yourself the leader—is always the same: education and repetition.

## From the Ground Up

Let's start at the beginning. Riders who have confidence issues tend to want to focus on problems they're having when they're actually in the saddle, but I encourage you to first think in terms of more basic skills. Suppose your horse won't stand when you mount. That's intimidating for some riders and can be a

## From the Ground Up: Establish Correct Mounting



Alynce is standing four-square and still, something he never used to do! We worked on this by having a ground person hold his bridle at first. The other element: If he moves away when I get on, then I get back off. Then I get on again, and if he moves away I get off, then I get back on. And if he steps away, I once more get off, then I get back on. Over and over. If your horse is very fussy, you might need to start with someone helping you on the ground. If he wants to move away a little bit but isn't being really naughty, just use the repetition of getting off, then getting back on.

I guarantee that if you persist, your horse will eventually stand quietly. It may take a while but he'll get to the point of saying "all right, I will stand." It's tedious, of course, because you want to get on with your ride, but it works. It took me a long time to get this horse to do this, but here's the payoff: He's standing quietly saying, "OK, boss, now what?" I have a nice soft rein and he's just waiting for my next instructions.

real inconvenience or sometimes a question of safety. The truth we tend to overlook is that all of these basic horsemanship skills are related. It's always about attention to detail. In my experience with some of the best riders in the world, their horses stand when they get on. Why? Because the riders pay attention to this skill. Their horses lead correctly because the riders pay attention to it. They pay as much attention to ground work as they do to work under saddle because they know it's all part of the whole of good horsemanship and good riding.

Of course, we know it's not unusual for a very good rider to go along for years casually allowing her horse to walk away as she's mounting, until something helps her realize, "This may be related to the fact that my canter lead changes are always a little late." Again, the behavior is all related in your horse's mind. It's all a matter of does he know what you want and does he do it when you ask him?

If this simple but important detail is an issue for you and your horse, your trainer can probably suggest an exercise

for teaching him to stand or direct you to a ground-work program. If you can teach your dog to sit, you can teach your horse to stand.

### The Basics in Motion

To continue building that sense of communication and confidence once you're on your horse, have a plan before you put your foot in the stirrup. The plan gives you something to focus on instead of nerves, and it reinforces your role as the leader in the partnership because you start right out by giving your horse something to do.

Does that sound complicated? It is not. Your plan once you're mounted and ready is to march off in a positive four-beat walk. We're back to the classical Training Scale here, the basis for everything: It starts with rhythm, which creates relaxation. Rhythm is probably the single biggest skill I teach and that I pay attention to when I ride. If you get on feeling nervous and tense, it's hard to have rhythm because you're not allowing your horse to walk and move out, and then he

will get tense. If you're having difficulty creating the four-beat walk rhythm with your body, think one-two-three-four in time with your horse's steps. If that doesn't work, count aloud. That's what I ask my students to do when they're having trouble establishing a steady walk rhythm. When you say it and hear it, your body responds to it.

There are times when your horse shouldn't start at the walk, for instance, because he's too cold, too tight or too nervous. In that case it's better to trot, but again you need to have a plan as the leader. I tell my students, "Give your horse something to do before he gives you something to do." Instead of just trotting around, focus on something: serpentine on a loose rein, inside leg to outside rein, suppling one side of his body and then the other until he relaxes into the rhythm and begins to seek the connection with your hand. Now you're not worrying about your own nerves; you're using a simple tool to communicate with your horse.

It's not unusual for riders accustomed

## The Basics in Motion: Marching Off



Here's the starting point: Alyance is standing squarely and quietly, ready for whatever we're going to do. My signal for him to walk off is to sit tall with my upper body, sit deep in the saddle, keep my leg still and add my calf—just a gentle squeeze. When he starts forward I think one-two-three-four. If he doesn't do what I want when I ask the first time, then there is a consequence: First I add a little heel, then a little spur, and if there still is no response, a little crop until he learns. I wouldn't leave it at that, however; I don't want him thinking that he needs a big aid to walk off.



My eventual goal is to get a response from minimal aids. Again, I accomplish that with repetition so that when I say "walk on" with my seat and my calf, he marches off in a steady, rhythmic gait as he's doing here.

### Sharon White: 'You Can Do This'

"As the rider who is a student, you want to be learning with someone who makes you feel like you can do this, whatever the challenge of the moment is," says Sharon White. The teaching/training program at her Last Frontier Farm in Summit Point, West Virginia, is just such a source of encouragement and confidence. Her students' appreciation is obvious to anyone who has ever experienced the wave of cheers from orange-clad supporters who follow Sharon around the cross-country course.

Sharon's career has been shaped by some of the greats in equestrian sport. Early on, she rode with eventing legends Bruce Davidson and Torrance Watkins. A consistent influence has been international star Jim Wofford, who continues to be a sounding board for her riding and her overall career. "She is an unusual package," Jim says. "She's a super rider and horsewoman and a wonderful instructor. Unlike many elite riders, she tells her students what they need to do to get better—not what Sharon would do." FEI 'O' judge and Grand Prix dressage rider Linda Zang comes to coach at Sharon's farm regularly, and Sharon also rides under the eye of hunter/jumper guru George Morris for input on her stadium jumping.

"George once asked me, 'Why do you think I help you?' I said, 'It's because you are willing to repeat the same *correct* information over and over again, until it sinks in.' He knows it takes time."

Sharon was on the U.S. Equestrian Federation High Performance Training List for all of 2014, when she was third-ranked U.S. Lady Rider of the Year. Highlights of her year included fourth place at both Fair Hill International CIC\*\*\* and Jersey Fresh International CCI\*\*\* with Under Suspicion, with whom she came in second in the Mare of the Year rankings. Riding Wundermaske in his first four-star, she completed Rolex with a clean and fast cross-country round; the two went on to complete a second four-star in Pau, France. Plans for 2015 include entering Rolex again with Wundermaske. "Then we'll see what the fall will bring," she says. If you'd like to know more about Sharon, visit her website at [www.lastfrontierfarm.com](http://www.lastfrontierfarm.com).

## The Basics in Motion: Ride a Figure Eight



Figure eights or serpentine at a trot are a good way to remind a tense or fidgety horse that you're the leader. They also are a great way to warm him up for the next thing you plan to do: You're warming up both sides of his body as you give him a chance to stretch one side, then change direction and help him stretch the other side. Here we're going straight across the diagonal at a good steady trot. Alyance is in a connected frame, though it's early in the exercise so I'm not asking for a lot of engagement. I have even contact on both reins and I'm keeping my posting light and low.



As we turn to the left, my head is up and my eyes are looking where I plan to go. My inside rein is soft, and I'm guiding him in a forward manner, pressing him into the outside rein, which determines the size of our arc, with my inside leg. The size of our loops depends somewhat on the size of the area in which we're working and how fit my horse is versus how attentive he is. If his attention is wandering, I ask for smaller figures. Again, it's a matter of repetition. The result does not happen in the first loop. I keep repeating until I get the trot I want.



This photo was taken after Alyance and I had been working on the figure for several minutes. You can see that he is more forward and more active behind as we go across the diagonal in the opposite direction from Photo 1.



A few repetitions later, I can definitely feel that inside leg/outside rein connection on the bend through the left turn. See how far under his body he's stepping with his right hind. His back has come up under me and he's looser and listening more.

## Canter a Pole and Halt



This exercise is useful for improving communication with any horse who finds it so exciting to canter a simple pole on the ground that he loses his balance or lands running. In this photo Alyance, who loves jumping, is getting a little jazzed up by the pole on the ground, as indicated by his rapt expression and forward-pricked ears. My eyes are up and looking where I want to go. I have a soft contact, and I'm sitting in a light three-point position with my upper body forward and my seat grazing the saddle.



I'm getting ready to ask Alyance to halt: Because he's a young horse, he will halt through the trot. My seat is closer to the saddle, my upper body is more vertical and I've closed my fingers on the reins. He's still cantering but his ears indicate he's getting my signal.



I'm in the down, or sitting phase, of my post here and Alyance has come back to trot so cooperatively that I'm thinking, "Wow, this stuff really works!" As these pictures show, a downward transition is always a forward transition: At each point I am riding my horse to the connection and giving him a chance to do what I'm asking. At this moment I'm not pulling back on the reins. I'm pushing him into the bridle with my seat and leg and I'm patient. Depending on the horse and the amount of energy he has, you might not need to push. If you have one who's fairly enthusiastic, you may need to use more restraining aids until he gets it, but he will.



If you ride forward into the downward transition, you end up with a square halt. This halt shows the result of patient repetition. Alyance has halted four-square on a steady contact. His ears are attentive but relaxed and his tail is quiet. He's waiting for me to tell him about the next plan.

## Over Fences: Fix Rushing After a Jump



Alynce is jumping over a crossrail to a small oxer, but it's apparent by how much he overjumps this small fence that this is what he loves to do. I am keeping my heel deep, my lower leg correct and my contact consistent, staying with him over the fence.

You can see his enthusiasm as he sizes up the little oxer. I'm in my three-point (sitting) position for these canter strides, following his motion and maintaining the contact by opening my elbow.

to working in an enclosed area to lose some confidence when outside the ring. Riding out in a field is no different from riding anywhere else: You need to know you can go where you want to at the speed you wish. Time for a plan! Decide before you ever leave the barn how you will keep your horse and yourself busy outside the ring with simple schooling figures and upward and downward transitions. You can use this strategy to maintain leadership throughout all of your flatwork.

### Now Over Fences

Building confidence in jumping is no different than strengthening your confidence about riding in general. Assuming your horse already knows how to jump, does he go exactly where you want him to go in the ring or out in the schooling field and does he go at the speed you want?

If I have a student whose confidence over small, simple fences is really weak, I don't hesitate to go all the way back to rails on the ground. If you lack confidence, it's usually because you feel you don't have control. How do you stop when you want to stop? Go when you want to go? Turn right? Turn left? Everything—including the Training Scale,

straightness and rhythm—is some version of that. You have to know that you have control to feel confident over fences. You can do anything with rails on the ground. Trot one and halt. Canter one and halt. Trot or canter through a series of them. Make a figure eight or an entire course. With this work you're re-establishing your driving and restraining aids and the aids for going right and left on a daily basis. With repetition you can fine-tune it so that when you think something, your horse does it.

In my clinics, we often have horses who land over a jump and speed up. This can be a confidence issue for a rider who is already tentative about jumping. There is a simple tool I use to help students. Speeding up after a fence is actually a loss of rhythm. I tell students to make a downward transition to trot immediately after the jump, then pick up the canter again only when the horse relaxes into a rhythm. If you have this plan in mind from the outset, it increases your confidence. It really works. And if you repeat the downward transition enough times, I guarantee that eventually your horse will jump the fence and then slow down.

It's interesting to me that some riders are reluctant to use this tool, almost as

if they think it means they're somehow not as good as they should be. In fact, I have a favorite story about it. Years ago, a good friend (who is also one of my owners) signed us up for a clinic with Greg Best, two-time Olympic individual show-jumping silver medalist. My friend is a fairly novice rider and I am an FEI-level professional. We ended up in a group where we were jumping about 2 feet. I was riding a Prelim horse I was very proud of, but he was a strong horse, and that day I could not make him do what I wanted. He kept speeding up after the jumps, and finally Greg said, "Your problem is that you can't maintain your rhythm. I think you should do a trot transition when you land. Stay on course, do a trot transition, then pick up the canter again." It was so simple and so effective. And my friend was so tickled!

### Don't Hurry

The final word on becoming your horse's leader is something Canadian Olympic show jumper Ian Millar told me: Never be in a hurry with your horse. He will learn better and more consistently if you don't feel pressed for time. If you have only 15 minutes to spend with your horse, you can get a lot done in that





Alyance takes another big jump over the oxer, a moment in which many young horses start to pick up steam. I'm up in two-point position, staying with him, keeping the contact, looking ahead and planning my next move to keep him from rushing after he lands.



I came back to a light three-point after landing and asked for trot. Here, a moment later, I've risen into two-point (the up phase of my posting). Alyance, who would prefer to keep cantering, has fallen slightly onto his forehead. Rather than pull on him, I've braced my back a bit and used my core to encourage him to shift his balance rearward. I could be deeper in my heels to accomplish that better.



The result: a trot transition in which he is balanced and forward. I continue trotting until Alyance feels steady and relaxed in this gait, then ...



Once again looking in the direction I plan to go, I ask for—and get—a wonderful, balanced canter departure. With a horse who tends to rush after jumps, I'm willing to repeat this sequence as many times as I need to until he automatically slows and waits for instructions after the fence because I know that it will work.

time—but before you put on his halter, you need to decide exactly what it is you want to do.

All of the tools I've explained will work if you're willing to repeat them until your horse realizes what you want. The basics of good horsemanship and good riding are not a magic formula that top riders keep to themselves. Those basics are the same as they've been. Building

your confidence is a matter of being willing to find out the basics and to repeat them many times.

When you become your horse's leader, repetition is also the key for coping with normal anxiety about challenges like riding a cross-country course. Let's face it, eventing is a fear-inducing sport and part of its lure is overcoming that fear. After you've done it over and over,

your fear is more about performance anxiety than actual terror. As part of this process, you need to not be in a hurry about moving up the levels. A good leader takes care of those she is leading. Before you move up, your current level of competition should feel easy for you and your horse. If your horse is confident and you've done all the basics I've talked about, you're probably ready. 🐾

# You know I know you have a crush on the farrier. I won't tell.

You and your horse share a unique bond. Just as well as you understand each other, we understand how important nutrition is to them. That's why our experts have created a wide choice of extruded nugget formulas for exceptional nutrition and optimal horse health.



Scan to find their feed or visit [FeedSentinel.com](https://www.feedsentinel.com)





# SPORTHORSE NUTRITION KNOW-HOW

*Learn about the different fuel sources and other critical requirements that are needed to support your horse's workload.*

BY KATIE YOUNG, PHD

Successful performance depends on many things, including training, conditioning and the horse's inherent talent and heart. But without proper nutrition, the horse will not be able to perform to his full potential. Sporthorse nutrition is primarily focused on providing appropriate fuel to support workload, but it also involves supplying a complete dietary balance to replenish nutrients needed for muscle maintenance, facilitate repair and recovery, maintain normal body functions and balance, and support optimal health.

## Energy/Fuel

Energy is the fuel used by the horse for all functions, including maintenance of body tissues and powering exercise. Energy stored in feed is measured in calories, usually reported in megacalories (Mcal) or kilocalories (kcal or Cal).

All horses have basic energy requirements to support maintenance activity. Energy is the nutrient most influenced by training and work in horses. The harder the horse works, the more energy is needed. In addition, the type of work influences what source of energy (fuel) should be provided. For instance, a hunter or dressage horse primarily works *aerobically* (longer, slower activities). Consequently, horses in those disciplines need fuel that supports aerobic metabolism. A jumper or eventer (cross country or stadium jumping) needs fuel to support *anaerobic work* (briefer, high-intensity activities).

▲ Disciplines that fall under anaerobic activity—shorter, high-intensity activities—include show jumping and eventing. In these horses, nonstructural carbohydrates (sugars, starches) and some fibers fill this tank.



AMY K. DRAGOO

▲ The type of work influences what source of energy should be provided. Hunters and dressage horses primarily work aerobically (longer, slower activities). In these horses, more fat is needed to support their metabolism.

Much of the energy in feedstuffs eaten by the horse can be burned via various biochemical pathways to produce *adenosine triphosphate (ATP)*. This is the molecule that fuels muscle contractions. The horse has a well-developed, complex system to take chemical energy provided by food nutrients and convert it to mechanical energy for muscular movement.

The body has three “fuel tanks.” These are body stores of biological compounds that can be metabolized to produce chemical energy. The compounds stored in the fuel tanks are *glycogen*, *fat* and *protein*. All three can be metabolized to produce ATP molecules, but there are vast differences in the efficiency of each.

There are four energy sources that can be fed to horses to fill the fuel tanks—

- Plant fibers (structural carbohydrates)
- Nonstructural carbohydrates (starch and sugar)
- Fats
- Proteins

### How a Horse Utilizes Feed

Before diving further into describing and comparing these energy sources for working horses, it may be helpful to discuss how the horse utilizes feedstuffs in his body. As herbivores, horses naturally wander and graze plants (primarily grasses) and utilize plant fibers as the main source of dietary energy. The equine digestive tract is designed to process large amounts of forage almost continuously. While mammals do not produce enzymes to break down these structural carbs in their digestive tracts, the horse’s voluminous hindgut (including the cecum and

## WHERE PROTEIN FITS IN

Although not an efficient source of energy for working horses, protein is necessary to provide essential amino acids. Amino acids are required for muscle mass development and tissue repair. They also supply nitrogen to replace what is lost in sweat. Exercise causes stress and damage to muscle tissue.

Amino acids (the building blocks of protein) are needed for muscle to adapt to the increased demands of exercise. However, the higher protein requirements are usually met by the increased feed intake necessary to meet the working horse’s energy demands. This is assuming that the protein supplied is high quality and provides adequate essential amino acids. An *essential* amino acid cannot be synthesized in the horse’s body and must be supplied in the diet. Some essential amino acids in horses include lysine, methionine and threonine.

Different proteins have different amino acid profiles. Dietary protein sources including soybean or canola meal and alfalfa supply a better mix of essential amino acids than cereal grains or grass forages. Horses actually have an “amino acid” requirement, not a “protein” requirement. When essential amino acids are lacking, muscle development and tone (such as a strong topline) cannot be maintained and performance can be impaired.

Feeds developed for performance horses contain high quality protein sources to provide required amino acids. Additionally, individual essential amino acids are often added to ensure working horses’ needs are met. A typical performance feed usually contains 12–14% protein to support the working horse’s demands. Again, as the workload increases, feed intake usually goes up with energy demands. Thus the amount of daily dietary protein is higher.

Keep in mind, however, these feeds are designed with a specific *minimum* feeding rate to provide sufficient nutrients. Consequently, horses in light work (especially easy keepers) may gain too much weight when fed even the minimum recommended amounts. In such situations, instead of a performance feed, these horses will benefit from a ration balancing feed. This feed contains concentrated high-quality protein, vitamins and minerals to meet nutrient requirements. However, it is fed at a very low rate (usually 1–2 pounds/day for a mature horse) and so does not supply unnecessary calories.



▲ Adding grain to the diets of working horses helps them meet their energy requirements.

large intestine) houses billions of microbes, including bacteria, protozoa and fungi, that are quite efficient at digesting fibers through fermentation.

The end products of microbial fermentation of fibers are *volatile fatty acids*, and those VFAs are absorbed from the horse's hindgut and can usually provide adequate calories to support a nonworking horse. Some VFAs are easily used to generate ATP in the muscles. Others can be converted to the simple sugar glucose in the liver. This can then be either transported to body tissues and used as fuel or converted to glycogen or fat and stored for later use.

Historically, when horses were domesticated and put to work, people realized that forages did not provide enough energy to support moderate or hard workloads. This is because the horses were not able to perform their daily work without losing weight and body condition. The earliest solution was to add cereal grains (traditionally oats, barley or corn) to the horses' diets. These provide high levels of nonstructural carbohydrates (primarily starch) that contribute more calories

per pound of feedstuff than forages. Digestion of starch in the horse's upper gut yields glucose. This is absorbed from the small intestine. Glucose may then be used as fuel immediately, stored as glycogen (usually the major fuel source for activity) in the horse's muscles and liver, or stored as fat.

### Fuel Tanks Explained

So, back to energy sources and fuel tanks. The first fuel tank is glycogen, the primary fuel used for anaerobic activity. As discussed, dietary fibers and nonstructural carbohydrates both contribute glucose for synthesis of glycogen. The benefit of burning glycogen (glycolysis) is that it's a readily available fuel when the horse needs to expend energy immediately. The downside of glycogen is that body stores are limited. Consequently, the horse will run out of glycogen after only a few minutes of maximal activity. Additionally, glycogen is not especially efficient at producing ATP molecules. And finally, an end product of the glycolysis is lactic acid, which can be harmful to muscle fibers. The combination of running out of glycogen and lactic acid buildup leads to fatigue in exercising horses.

The second fuel tank is fat, the primary fuel used for aerobic activity. The benefits of burning fat are multiple:

- the storage potential of fat is fairly extensive,
- fats and fatty acids can be used to fuel hours of submaximal exercise,
- burning fat is very efficient at producing ATP molecules,
- end products are water and carbon dioxide, which are not detrimental to the body.

The main downside of burning fat is that it is a slower process. It cannot be used immediately to support maximal effort.

The third fuel tank is protein, but there are more down-

## VITAMINS AND MINERALS

Similar to protein, requirements for vitamins and minerals increase with bigger workload. But the ratios of these nutrients relative to calorie requirements remain consistent. Therefore, the increased requirements are met with a well-fortified performance horse feed provided in adequate amounts to meet energy demands.

Vitamins and minerals are needed in very small quantities. It is often difficult to recognize moderate deficiencies or excesses. However, maintaining appropriate levels of

these nutrients is essential to ensure long-term health, soundness and performance of the horse. This is particularly true for nutrients involved in energy metabolism including B-vitamins, electrolytes (sodium, potassium and chloride), structural minerals such as calcium and phosphorus, and antioxidants such as vitamin E and selenium.

Some vitamins, including Vitamin C and some B-vitamins (biotin, riboflavin and niacin) have no established dietary requirement in the horse. They are as-

sumed to be adequately synthesized in the digestive tract and/or provided in natural ingredients in amounts to prevent deficiency symptoms.

Feeding excessive levels of vitamins and minerals has not proven to be beneficial to performance and in many cases can actually become detrimental. Therefore, choose a properly fortified feed designed for performance horses. It is a more accurate approach to vitamin and mineral nutrition than trying to individually supplement these nutrients.

sides to burning protein as a fuel than benefits. Metabolizing protein to produce ATP molecules is quite inefficient (costs more energy to metabolize as fuel than glycogen or fat). It also produces more heat than other fuels, which must then be dissipated by the body and can affect performance. Protein is usually only used as an energy source when a horse is either fed an excessive amount of protein or when the horse is in negative energy balance (more energy is being used than is being supplied by the diet). In that case, the body will break down protein in muscle tissue to supply energy for maintenance activities.

### Feeding Different Disciplines

As mentioned previously, the type of exercise should to some extent dictate the feeding program for the horse to supply appropriate energy sources. For nonworking horses, VFAs from high-quality forages will likely provide adequate energy for maintenance. If a horse is maintaining appropriate body weight and condition on forage alone, a ration balancer or vitamin/mineral supplement will supply nutrients typically missing in forages.

All working horses need nonstructural carbs in their diets to supply glucose as immediate fuel and as substrate for glycogen synthesis. Forages provide some nonstructural carbs but rarely enough to refill glycogen stores in moderate- to hard-working horses. Anaerobic activities, such as show or stadium jumping, require adequate glycogen to support the high-intensity work. Aerobic performance, including dressage, hunter or the cross-country phase of eventing, will also utilize some glycogen as fuel. However, there also must be adequate fat available to support sustained work lasting more than a few minutes.

Working English sporthorses participating primarily in aerobic activity often benefit from diets contain-

ing supplemental fat. Feeding fat to horses provides benefits beyond simply a substrate for aerobic metabolism. Fats are calorically dense and energetically efficient. This means that they provide more than twice the calories by weight as carbohydrates in general and generate much less heat of digestion than fibers.

Replacing nonstructural carbs with fat in horses' diets may also affect demeanor. There are some reports of horses being calmer on fat-supplemented diets. Further, research has shown that adding fat to the diets of performance horses may improve performance, such as increased stamina and delayed onset of fatigue. However, dietary fats cannot quickly replenish glycogen stores, so we cannot completely replace nonstructural carbohydrates in horses' diets. When a horse runs out of glucose, performance will drastically drop.

It would be nice to be able to simply say, "Feed show jumpers higher sugar/starch diets for brief, high-intensity work. And feed dressage, hunters and eventers higher fat/fiber diets for more sustained work lasting more than a few minutes." However, life is never that simple. The work performed during training and competing in all disciplines is a blend of anaerobic and aerobic work, so all the physiological fuel systems are in play. The art of feeding performance horses comes in finding the best combination of dietary energy

sources to meet an individual horse's fuel needs for a particular activity as well as meeting that horse's distinct metabolic needs.

Interestingly, a recent study comparing nutrient content of performance feeds fed to elite performance horses in the United States versus Europe noted that European feeds tended to be fairly low in fat and high in nonstructural carbs. The trend in performance horse feeds in the U.S. in recent years has been to utilize feeds high in fat and fiber and low in nonstructural carbs. Research studies have shown that horses who deplete their glycogen stores and are not provided dietary substrate to replenish the glycogen show reduced performance capabilities.

Additionally, it has been proposed that in some situations, relying on high fat/low nonstructural carb rations may compromise performance, particularly in intensely exercised horses. Further, some warmblood horses diagnosed with myofibrillar myopathy have shown improvement when their diets are adjusted from high fat/low nonstructural carb to low-moderate fat/moderate nonstructural carb (along with specific amino acid and antioxidant supplementation). More research may help to determine the best options and mixtures of fuel sources to support varying exercise levels and metabolic needs of working sporthorses. 🐾

*Katie Young, PhD, is an independent equine nutritionist providing consulting services to horse owners and veterinarians. She also works with Kentucky Equine Research as a consulting nutritionist. Prior to starting her own business, Dr. Young was an equine nutritionist, product manager and technical services manager with Purina Animal Nutrition for several years. There her responsibilities included developing and maintaining horse-feed formulas and standards as well as ingredient and production standards. Dr. Young earned her bachelor's degree from Missouri State University and her doctorate in equine nutrition and exercise physiology from Texas A&M University. Currently she rides and competes in eventing and works as a trainer and riding instructor in the Kansas City area.*



# You know how I feel about that new blanket. Itchy, itchy, itchy.

Every horse has their own distinct personality. Just as well as you know your horse's, we know how important it is to find the feed that keeps them well. That's why our nutritionists have created a wide choice of purposefully formulated feeds to fit every life stage and activity level of your horse.



Scan to find their feed or  
visit [FeedSentinel.com](https://www.FeedSentinel.com)

