
Helping all horses
live healthier lives.
GUARDIAN OF EQUINE HEALTH®
Sentinel®
KENT
BLUE SEAL

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Fueling equine health and performance.

Research-backed nutrition in every scoop.

The right nutrition can serve as the foundation of a horse's health, performance and longevity. From growing foals to seasoned athletes and senior companions, every horse has unique dietary needs that change over time. Understanding and meeting them with a research-backed diet can make all the difference in supporting their health and well-being.

At Sentinel® Horse Feed, we're committed to providing the right nutrition for horses at every life stage. Our team of experts combines decades of experience with proven nutritional science to develop feeds that prioritize digestibility, performance and overall health.

Your partner in equine nutrition.

Our mission is to provide equine veterinarians and horse owners with the knowledge and nutrition needed to keep their horses thriving, no matter their age, workload or digestive health challenges. In this eBook, we'll explore key aspects of equine nutrition at different life stages and activity levels, offering expert insights and practical feeding strategies to help you make informed recommendations. Together, we can help all horses live healthier lives.

Extruded feed.

Formulated for increased digestibility with a cooking process that enhances nutrient absorption and supports gut health with low levels of starch and sugar, and healthy sources of fat and fiber.

Textured feed.

Formulated with low-starch ingredients, fat, fermentable fiber like beet pulp and extruded nuggets to meet the complex energy demands of performance horses while maintaining digestive health.

Care products.

Diets and supplements formulated to provide solutions for horses' developmental, physiological, digestive, metabolic or performance concerns.

Get to know our equine experts.

It's our passion to help you protect your patients.

DR. RANDEL RAUB
Director of Research and Nutrition

Dr. Raub started with Kent Nutrition Group, the makers of Sentinel Horse Feed, in 2020 as Director of Research and Nutrition and leads the nutrition team, including the Kent Research Farm.

JEANNE VAN DER VEEN
Equine and Specialty Nutritionist

Van der Veen joined Kent Nutrition Group in 1988 and currently serves as the Equine and Specialty Nutritionist.

KRISTYN STURKEN
Equine Product Manager

Sturken joined Kent Nutrition Group in 1995 and currently works in the marketing and product department with a major focus on her passion, equine products.

ABBY GEICK
Equine Veterinarian DVM

A Sentinel ambassador with New England Equine Medical & Surgical Center, Geick travels across the New England region conducting dental exams, lameness exams, routine checkups and emergency care.

Nutrition for the lactating mare.

Expert tips for a lifetime of equine health and vitality.

Providing the right nutrition for the lactating mare is essential for the health of the foal and its mother. While most breeders intuitively recognize the need for a specialized diet, they may not realize just how crucial balanced nutrition is in helping lower the risk of developmental orthopedic disease (DOD) and ensuring a happy, healthy life for both mare and foal.

Fueling the future starts from day 1.

Nutrition should be considered even before conception to help improve the odds of the mare becoming pregnant.

However, it's during the final trimester of gestation when the nutritional needs of the mare increase significantly. Energy requirements can be demanding during lactation. This is when it's vital to provide adequate protein, vitamins, minerals and calories to maintain a healthy body condition, which helps her produce nutritious milk and support rapid growth of the developing foal.

Protein:
Provides essential building blocks needed for fetal growth, muscle development and tissue repair. Deficiencies may present as muscle loss, especially along the topline of the mare.

Vitamins and Minerals:
Support bone development, muscle strength, immune defense and metabolic balance. Deficiencies may not be apparent but can cause complications with lactation, foaling and overall health.

Calories:
Deliver energy needed to support milk production, maintain body condition and recover after foaling. Deficiencies cause a noticeable decline in weight and body condition.

"When that foal hits the ground, the energy demands of the lactating mare are as high as the absolute hardest working horse you can imagine. It's just phenomenal—they nearly double their nutrient requirements."

DR. RANDEL RAUB
Sentinel Director of Research and Nutrition

Balance in body condition is best.

For the lactating mare, a Body Condition Score (BCS) of five or six is ideal. Too obese, and it runs the risk of developing metabolic issues, having a difficult pregnancy. Too thin, and it may develop nutrient deficiencies that can impact the foal's immune system and add or reduce its chances of rebreeding.

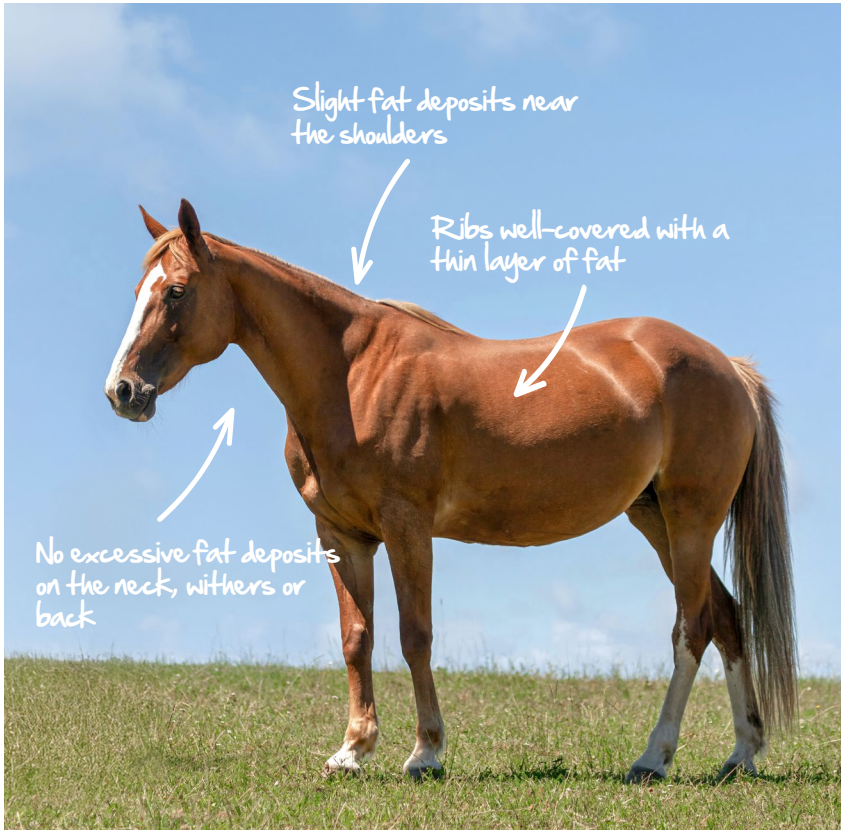
"You certainly don't want them to be obese or too thin because that can reduce rebreeding efficiency," Dr. Raub says. "And you don't want them in a negative nutrient balance with a score of four or less because it will put them in a compromised position during lactation."

Physical markers to look for.

Moderate Fat Levels:
Back level. Ribs cannot be visually distinguished but can be easily felt. Fat around tailhead beginning to feel spongy. Withers appear rounded over spinous processes. Shoulders and neck blend smoothly into body.

Moderate to Fleshy Fat Levels:
May have a slight crease down back. Fat over ribs feels spongy. Fat around tailhead feels soft. Fat beginning to be deposited along withers, behind shoulders and neck.

A healthy mare should have:



Download our **Body Condition Scorecard** and make precise, informed nutritional recommendations tailored to your patients' unique needs.

Forage is always the foundation.

Forage provides the nutritional basis for all horses, and it's especially critical for broodmares because it contains essential nutrients and fiber, which keeps the gut working properly. Keep in mind, the quality of forage is just as important as the type. If your clients aren't sure where to start, they can usually contact their local feed company, store or extension office to take a sample. This provides the foundation to develop the rest of their nutritional plan.

"If you get your hay tested, it helps you evaluate how you should be feeding a horse and if you need to supplement with a concentrate or other feed type," Dr. Raub says. "Most folks blame a drop in their horse's weight or change in condition on the feed when it is really the quality of hay, forage or pasture that has changed."

The building blocks of life need a solid foundation.

Much like forage, providing sufficient protein is critical, but the quality of that protein plays an equally vital role. Look for the amino acid profile—the building blocks of protein—to determine how effectively these nutrients are utilized.

The first three limiting amino acids for horses are lysine, methionine and threonine, meaning horses can't produce them on their own. And, if a horse is deficient, it can't fully use protein for things like muscle development, hoof growth and maintaining its hair coat.

Here's what to look for in mare and foal feeds:

Delivering essential nutrients.

The right nutrients play critical roles in supporting milk production, bone health, muscle function and overall foal development. Ensuring the correct levels and ratios of essential vitamins and minerals minimizes the risk of developmental issues and optimizes health outcomes for both the mare and foal.

"Concerns about an orthopedic disease should be an in-utero consideration, as well as when the foal is growing," Dr. Raub says. "Adequate nutrition to the mare during that gestational period will manifest in diminishing at least the risk of developmental orthopedic disease in the foal."

These nutrients are essential for mares and foals:

Cu COPPER + **Zn** ZINC

Vital for bone and joint health. Deficiencies may impact cartilage development and lead to developmental orthopedic disease in the foal.

Ca CALCIUM + **P** PHOSPHORUS

Maintain a 2-to-1 calcium to phosphorus ratio to support strong bones. Deficiencies may impact foal bone health and development.

E VITAMIN + **Se** SELENIUM

Promote muscle development and oxidative health. Deficiencies may impact foal muscle growth, development and recovery.

When to consider supplementation.

If a pregnant mare is being fed recommended feed levels and still struggling to maintain body condition or has low energy levels, it may be appropriate to introduce a supplement to their diet. The same is true if the mare struggles to maintain weight during lactation. Increasing grain ration is the first step, but if that's not enough you may consider a ration balancer or a high-fat supplement. A good ration balancer fills nutritional gaps without excess calories, making it ideal for pregnant mares that need a precise, balanced diet.

Get expert help in nourishing new life.

Lactating mares have unique and demanding nutritional needs that require careful attention and planning. Every aspect of their diet plays a vital role in supporting both the mare's recovery and the foal's development. By prioritizing these critical nutrients and consulting with nutritionists when needed, you can ensure a strong foundation for the health and well-being of your patients.

Here's what to look for in a quality ration balancer:

Quality Protein

Supports muscle growth and development, as well as tissue maintenance, hoof and coat quality, immune function and overall health.

Essential Vitamins

Provide key nutrients like calcium, phosphorus, selenium and zinc to guard against deficiencies and maintain optimal health and metabolism.

Trace Mineral Amino Acid Complexes

Maintaining optimum levels and ratios of bio-available trace amino acid complexes such as lysine and methionine are crucial for proper absorption to support muscle and coat health.

"Oftentimes the forage may not have the full spectrum of vitamins and minerals that you want to deliver. A concentrated supplement can fill in a lot of the gaps that the forage component may not be able to provide."

DR. RANDEL RAUB

Crafting diets for easy and hard keeper horses.

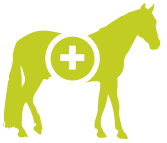
Giving weight to a custom equine feed plan.

Finding the right nutritional balance is essential for every horse, but it becomes especially critical when feeding easy and hard keepers, animals that have an “easy” or “hard” time maintaining their weight.

For example, an overweight horse with insulin resistance may require a carefully controlled starch and sugar intake. Meanwhile, an underweight horse recovering from illness may need more calories to rebuild strength and immunity. Both scenarios require a tailored approach to maintain optimal body condition for long-term health and vitality.

It’s important to note, not all horses should be considered easy or hard keepers. Most horses’ weights will fluctuate throughout their lives. A horse's metabolism plays a key role in determining whether it is an easy or hard keeper.

Breaking down easy and hard keeper conditions.



Easy Keepers:

Easy keepers generally include ponies, draft horses and some stock breeds. Some factors that might influence an easy keeper's weight include:

Behavior: Horses that are calm or less active burn fewer calories throughout the day.

Breed: Ponies and draft horses are genetically predisposed to thrive on limited forage.

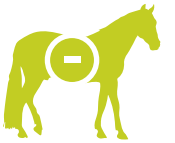
Seasonal: Some horse breeds, such as ponies, conserve energy and store fat for periods with limited forage.

Some health conditions can lead to challenges with weight loss. These may include:

Obesity: Easy keepers can gain excess weight, which may lead to metabolic disorders.

Laminitis: Overweight horses, especially those with access to rich pastures or high-starch feeds, may be at greater risk.

Nutritional imbalances: Limiting feed intake to control weight may lead to deficiencies in essential vitamins and minerals.



Hard Keepers:

Usually, certain types of horses and breeds are classified as hard keepers. These include racing horses like thoroughbreds and standardbreds because they have very active metabolisms. Other factors may include:

Behavior: Horses that are high strung or active burn more calories each day.

Breeding: Stallions tend to burn more calories each day, and broodmares require more calories during late pregnancy and lactation.

Age: Senior horses don't metabolize nutrients as well as younger horses.

Competition and training: Performance horses require more calories in their diets.

Some health conditions and social considerations can also lead to challenges with weight gain. These may include:

Poor dental health: Deteriorating teeth condition can cause pain and discourage eating.

Parasites: An infection of internal parasites can cause weight loss.

Herd dynamics: Less dominant horses may get run off their feed.

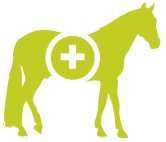
Lameness: An injury can discourage eating.

Illness: A sick horse may be less prone to routine eating.

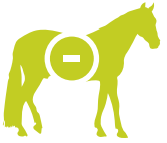
Crafting a diet based on body condition.

An imbalance in body condition can lead to a range of health issues, from metabolic disorders in overweight horses to immune and muscular deficiencies in underweight horses. By finding the right diet to fit the horse, you can help your patients maintain their health and performance.

"A balanced diet isn't just about feeding more or less," Jeanne van der Veen, Sentinel® Equine and Specialty Nutritionist says. "It's about ensuring the right nutrients are delivered at the right levels to support optimal growth, performance or recovery."



Overweight Horses:
Excess weight increases the risk of laminitis, insulin resistance and joint stress. Diets that limit caloric intake while providing sufficient nutrients are ideal.

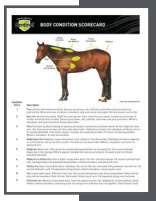


Underweight Horses:
Weight loss often indicates insufficient caloric intake, poor forage quality or underlying medical issues. Diets that focus on quality forage and calorie-dense feeds may help address deficiencies and promote weight gain.

How to score a horse's body condition.

Body condition scoring is a valuable tool that can help your clients evaluate whether their horse is overweight or underweight. By routinely assessing their score during physical exams, veterinarians and owners can identify weight trends early and adjust feeding strategies to better support the horse's health and performance goals. Scores range from one to nine, with one being extremely thin and nine being extremely obese. For most horses, a score of four to six is ideal.

To apply the scale, have your clients visually and physically examine the different points and assign a score based on muscle and fat composition. More fat means a higher score, while too little signals a lower score. To apply the scale, have your clients visually and physically examine the different points and assign a score based on muscle and fat composition.



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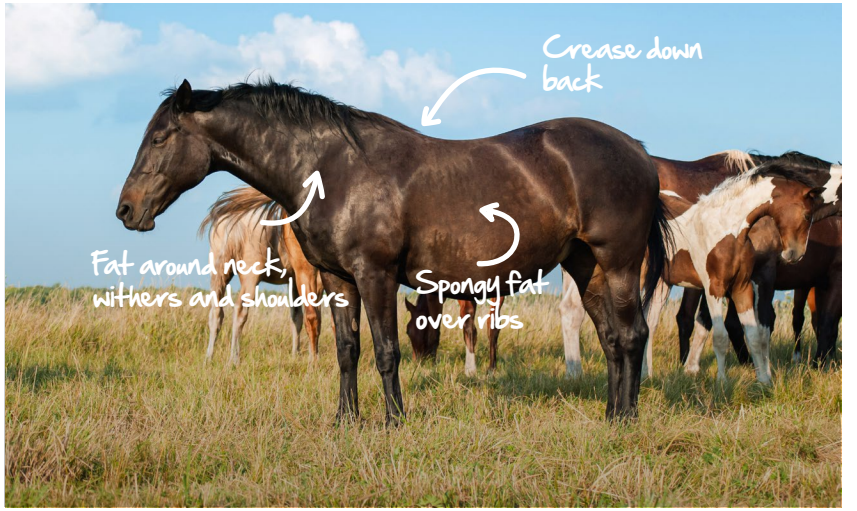
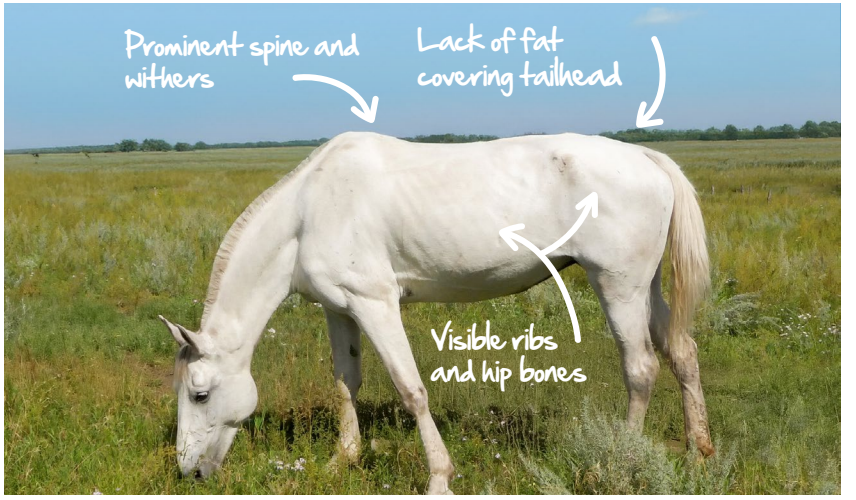
Physical markers for overweight horses:



Physical markers for underweight horses:



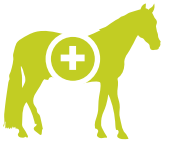
Quality of forage comes first.

Quality forage, characterized by its nutrient density, palatability, proper harvesting and storage methods, should be the cornerstone of every horse's diet regardless of their body condition.

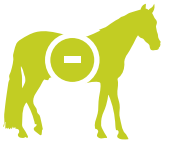
It provides energy, protein, vitamins, minerals and the necessary fiber to keep a horse's digestive system working smoothly. Testing their forage can help determine its nutritional profile and allow you to make informed decisions on their feed.

If your clients aren't sure where to start, they can usually contact their local feed store or extension office to take a sample. That provides a starting point to determine feed and forage amounts.

"Quality forage is essential and should be the foundation of a sound nutrition program," van der Veen says. "However, the type and quality must align with each horse's specific needs."



Overweight Horses:
Limit access to lush pastures and consider using a muzzle or slow feeder to lower the risk of overconsumption. A slow feeder is a device that controls how fast a horse can consume hay, which is more like their natural grazing behavior. Also, choose mature, low-calorie hay to help manage weight while maintaining healthy fiber intake.



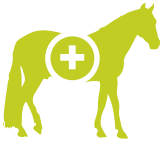
Underweight Horses:
Offer high-quality, nutrient-dense forage. Increase access to grazing and consider a high-fat feed for additional calories.

"Whether you're managing a hard keeper who can't put on weight or an easy keeper who seems to gain it overnight, the foundation of good care is the same: understanding their unique metabolic needs. With hard keepers, you need careful monitoring to support their energy demands, while easy keepers typically benefit from limited calories, whether that's with less feed, forage or providing a ration balancer."

JEANNE VAN DER VEEN
Sentinel Equine and Specialty Nutritionist

Concentrate and supplement considerations.

The right feed or supplement can often bridge the gap when forage alone doesn't meet nutritional needs. However, it's important to choose products suited to each horse's condition.

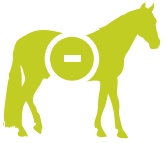


Overweight Horses:

Consider low-calorie, high-fiber concentrates with controlled starch and sugar levels. Supplements rich in vitamins and minerals or a ration balancer may ensure nutrient requirements are met without adding unnecessary calories.

Key ingredients to look for:

- High-quality protein
- A complete vitamin and mineral package
- Organic trace minerals like zinc, copper and manganese



Underweight Horses:

Consider calorie-dense concentrates with added fat sources like vegetable oil or rice bran. Ensure these feeds include quality protein and essential amino acids to support muscle growth and recovery.

Key ingredients to look for:

- Calorie-dense fats like vegetable oil and rice bran
- High-quality protein sources like soybean meal and alfalfa
- Essential amino acids like lysine, methionine and threonine

Monitor and make adjustments.

Regularly monitoring weight, body condition and overall health is crucial for managing overweight and underweight horses. In colder months, remove blankets regularly to evaluate body condition.

One common method for monitoring body weight is regular weigh taping. This should be conducted by the same person to ensure consistency. In addition to weight tapes and scales, consider tools like body condition scoring apps or equine girth measurement systems to refine assessments.

Establishing specific intervals, like biweekly or monthly check-ins, ensures consistent tracking and timely adjustments to feeding strategies. Adjust diets gradually and consult with an equine nutritionist to fine-tune feeding plans as needed.

> "The path to optimal health is a journey, not a quick fix. Regular assessments and small adjustments can make a big difference over time."
>
> **JEANNE VAN DER VEEN**

From performance horse feed to the finish line.

Optimizing equine performance with expert nutrition.

Feeding a performance horse is about more than just meeting basic nutritional needs—it's also about optimizing stamina, strength and recovery. Whether an equine athlete participates in eventing, show jumping, dressage, barrel racing or another competitive endeavor, a carefully balanced diet is required to sustain energy and support muscle function.

The right combination of forage, feed and potential supplements can make the difference between a horse that merely gets through a competition and one that performs at its peak. Understanding these unique nutritional demands is key to developing a feeding program that supports long-term success.

Balancing energy sources is key.

Performance horses need a lot of energy, but more importantly to meet their athletic endeavors, they need balanced energy from both carbohydrates and fats. Beet pulp and high-fiber hay can provide an excellent source of carbohydrates, while quality fat sources might include vegetable oils and flaxseed.

Each horse's energy requirements vary based on factors like workload, metabolism and body condition. Regular assessment and adjustment of the diet are necessary to maintain optimal performance and health.

Forage for a healthy foundation.

High-quality hay and pasture should constitute the majority of a performance horse's diet. It provides essential fiber necessary for proper digestive function.

Proper digestive function also plays a key role in hydration and electrolyte balance, helping to prevent dehydration and muscle fatigue during performance. Additionally, a well-functioning hindgut is vital for nutrient absorption and may reduce the risk of digestive upsets which can occur especially in high-stress, high-intensity equine athletes. Seventy-five percent of the immune cells live in the digestive tract; keeping the horse's microbiome healthy is key!

Insufficient forage intake or compromised gut health can lead to decreased energy levels and poor recovery which may contribute to an increased risk of colic or laminitis, negatively impacting a horse's ability to compete.

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Fiber for sustained energy release.

Quality fiber sources like beet pulp and soy hulls help maintain gut function and support a healthy microbial population. Fiber also provides energy as it's fermented by those microbes in the hindgut, producing volatile fatty acids like acetate, propionate and butyrate.

Unlike simple carbohydrates that provide quick bursts of energy, volatile fatty acids offer a slow, sustained energy release. This steady energy supply helps performance horses maintain endurance and stamina throughout training and competition, reducing the risk of fatigue and performance dips.

Without adequate fiber, horses that compete may experience energy crashes, increased susceptibility to dehydration and a greater risk of digestive concerns like colic, all of which can compromise their ability to perform.

Feed to meet elevated energy demands.

Grains like oats, barley and corn are traditional energy-dense feeds, but their high starch and sugar content can cause rapid glucose spikes. While these quick bursts are beneficial for equine athletes such as racehorses that rely on anaerobic energy, it may not be ideal for horses that participate in disciplines where increased stamina is required over an extended duration.

In contrast, fat-rich feeds that include rice bran, vegetable oils and flaxseed provide a concentrated, slow-burning energy source that helps sustain endurance and optimize muscle function without the risks associated with excessive starch intake. Fat metabolism produces a steady supply of energy, reducing reliance on glycogen stores and delaying the onset of fatigue during intense exercise or prolonged competition.

Additionally, fats contribute to a sleek, well-conditioned appearance and support anti-inflammatory processes, which are beneficial for muscle recovery and joint health, critical factors in keeping performance horses at their peak.

"There has been research that suggests a lower starch and sugar feed may sometimes benefit certain horses. Anxious or nervous horses may stay calmer because they're not getting the spikes in blood sugar, and on the behavior side you also may notice more willingness to perform because the horse is feeling at its best."

KRISTYN STURKEN
Sentinel Product Manager

Protein and muscle recovery.

Protein is a vital part of a horse's diet. This is particularly true of performance horses as protein aids in muscle development, repair and overall health. Understanding the importance of specific amino acids will give your clients' horses the best chance of top performance and recovery.

Amino acids: the building blocks of muscle.

Amino acids are the building blocks of protein, but not all amino acids are equally present in an equine diet. Limiting amino acids, such as lysine, methionine and threonine, cannot be synthesized by the horse and must be provided through feed. When these essential amino acids are in short supply, the horse's ability to utilize other amino acids is restricted, which can negatively impact muscle development, repair and overall performance.

Competitive horses with an amino acid deficiency may exhibit signs such as poor topline development, muscle loss despite adequate caloric intake, delayed recovery after exercise and lack of stamina. Behavioral indicators may include reluctance to engage in strenuous activity, difficulty building or maintaining muscle mass and a dull coat, as protein also plays a role in skin and hair health. Ensuring a balanced intake of essential amino acids is critical in supporting peak athletic performance, strength and recovery.

In equine nutrition, the primary limiting amino acids are:

LYSINE

Often the first limiting amino acid in equine diets, lysine is essential for growth and muscle development. Ensuring adequate lysine intake supports optimal protein synthesis.

METHIONINE

This sulfur-containing amino acid plays a role in the synthesis of other proteins and supports hoof and hair health.

THREONINE

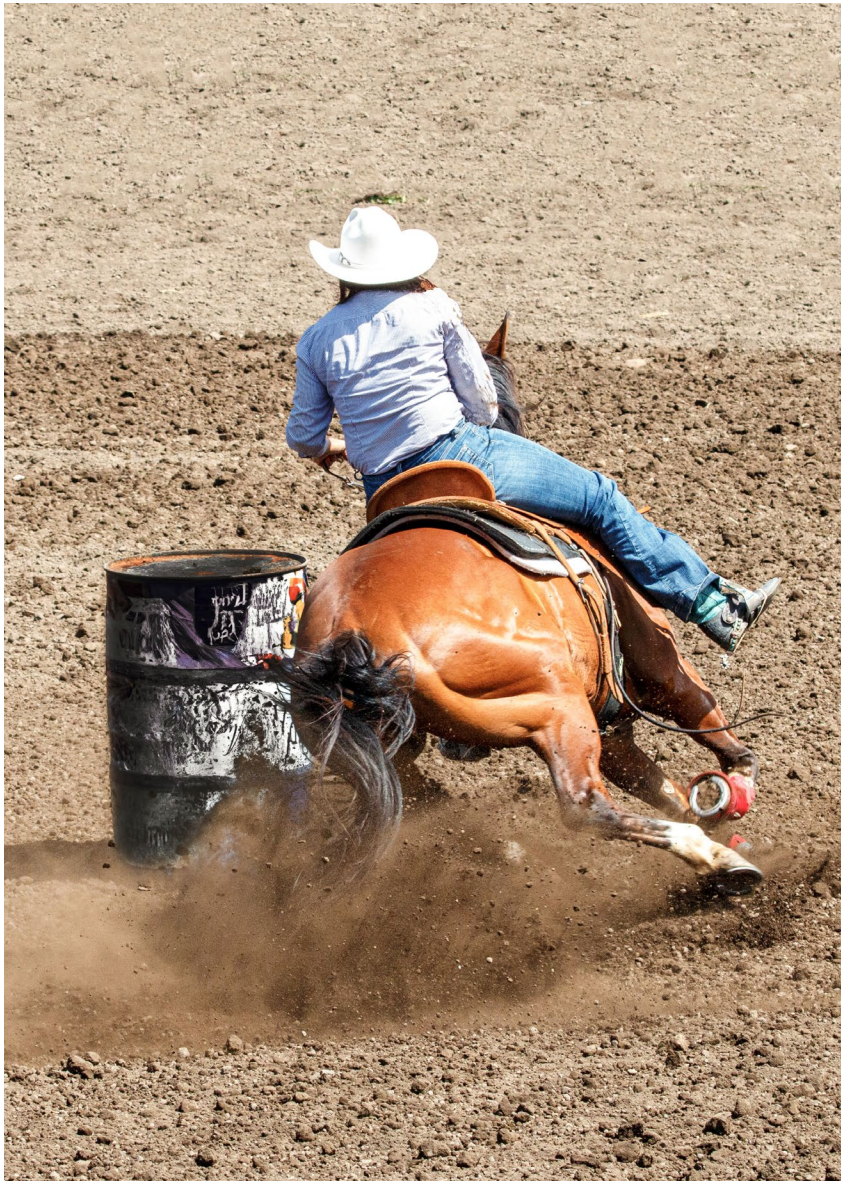
This amino acid is important for immune function and gut health and contributes to muscle protein synthesis.

Protein quality and digestibility.

Incorporating high-quality protein sources like soybean meal or alfalfa ensures the availability of essential amino acids necessary for muscle maintenance and repair. Performance horses experience significant muscle stress during training and competition, and intense exercise can cause microdamage to muscle fibers, requiring proper protein intake for recovery and adaptation.

Without adequate amino acids, muscle recovery slows, leading to fatigue, loss of topline and diminished performance. Ensuring a diet rich in essential amino acids supports strength, endurance and the ability to perform over time.

“Protein plays a vital role in muscle development, tissue repair and the horse’s overall health, but it works best as part of a well-rounded diet,” Sturken says. “It's important to balance protein with other energy sources to meet the horse's overall nutritional needs without overloading.”



High-quality H_2O.

Performance horses must maintain adequate water intake and electrolyte balance because they lose a significant amount of fluid through sweat. Electrolytes are minerals that carry an electric charge when dissolved in water and are vital for bodily functions like nerve transmission, muscle contraction and fluid balance. If not replenished, electrolyte depletion may lead to dehydration and muscle cramps. Electrolyte imbalances can also contribute to fatigue, reduced nerve function and decreased muscle efficiency.

Key electrolytes and functions:

Na
SODIUM

Regulates fluid balance and is essential for nerve impulse transmission.

Cl
CHLORIDE

Works alongside sodium to maintain fluid balance and is a component of stomach acid, aiding digestion.

K
POTASSIUM

Crucial for muscle function and helps maintain the body's acid-base balance.

Ca
CALCIUM

Necessary for muscle contractions, nerve function and blood clotting.

Mg
MAGNESIUM

Involved in muscle relaxation and energy production.

Maintain electrolyte balance.

Electrolyte imbalances can cause fatigue, muscle weakness and decreased overall performance. In severe cases, it can lead to more serious health issues.

Here are some ways to help maintain hydration:

Encouraging Water Intake

Offering water can stimulate thirst and promote hydration. Monitor the horse's water intake while traveling, as they can be picky about water sources. If they are not drinking enough, try soaking feed.

Monitoring Sweat Loss

High temperatures, humidity and intense exercise will increase sweat, so it's important to adjust electrolyte supplementation accordingly.

- A horse that's sweating normally will have a lightly moist, shiny coat, especially under the saddle.
- If it's exercising a bit harder, sweat will spread onto the neck, chest and legs.

Electrolyte Supplementation

Providing a well-balanced electrolyte supplement can help replenish minerals lost during exercise.

Hay and Forage

Forage provides a major source of potassium for horses and helps maintain water during increased activity levels.

Managing travel stress.

Horses are a lot like humans in that travel may stress them out—even to the point where it may impact energy levels, performance and their overall health. These animals thrive on routine, so careful planning is often necessary.

"We have to worry about ulcers in performance horses because they're under a lot of stress," Sturken says. "They're traveling a lot, and just putting the horse on a trailer adds a lot of stress. That's when you have to be especially careful of health concerns like gastric ulcers."

Pre-travel preparation.

Consistent diet: Tell your clients to maintain their horse's regular feeding schedule leading up to the competition, as abrupt changes may cause digestive upsets.
Hydration is everything: Ensure your clients keep their horse well-hydrated before they leave, as dehydration and electrolyte imbalances may lead to poor performance or health concerns.
Digestive health support: Consider a gastric support supplement to maintain proper pH levels and support gut health prior to travel.

Feeding on the road.

Forage access: Provide access to quality forage, as intake stimulates saliva production, which buffers the stomach from acid and supports gut health
Water availability: Offer water regularly during travel—if your patient is reluctant to drink, consider adding an electrolyte supplement.

Nutrition for the competition.

Forage and water: Continue to offer forage and water regularly, including between classes, to help maintain optimal gut function and prevent dehydration.
Grain meals: Avoid feeding large grain meals close to exercise or event times to prevent digestive discomfort.
Digestive health support: Consider a gastric support supplement to maintain proper pH levels and support gut health during the stress of competition.

Vitamins and minerals.

Vitamins and minerals, though required in smaller quantities compared to macronutrients, are indispensable for a competitive horse's health, energy metabolism and overall performance. A balanced intake ensures physiological processes function how they're supposed to.

Essential vitamins:

E
VITAMIN

A potent antioxidant that protects muscle cells from damage during intense exercise.

B
VITAMINS

Play a crucial role in energy metabolism, helping convert carbohydrates, fats and proteins into usable energy. Can also play an important role in hoof health.

Key minerals:

Ca CALCIUM + **P** PHOSPHORUS

Maintaining the correct 2-to-1 ratio helps support bone strength and muscle function.

Cu COPPER + **Zn** ZINC

Supports performance, recovery and overall health, strengthening bones, muscles and hooves and boosting immunity.

Se
SELENIUM

Works together with Vitamin E as an antioxidant, protecting muscle cells from oxidative stress.

Supplement considerations for performance horses.

Before adding anything to a horse's diet, it's important to note their body condition and take inventory of what they're currently getting nutritionally. A complete review will help determine if you need a supplement, but in many cases, with good quality hay and adequate feed, a horse won't need one. When evaluating different products, consider the horse's workload, discipline and special nutritional requirements.

Joint support: Ingredients like glucosamine, chondroitin sulfate and hyaluronic acid can promote joint health and reduce stiffness in performance horses.
Digestive aids: Gastric support supplements with prebiotics and probiotics, marine-sourced calcium, butyrate and zinc can help maintain gut health, especially during times of stress, travel or changes in routine.
Hoof and coat health: Biotin, zinc and omega-3 fatty acids contribute to strong hooves and a healthy coat.

"Regular forage and feed testing can help identify gaps in nutrition. Consulting with an equine nutritionist ensures that supplementation aligns with the horse's specific needs, workload and environmental factors."

KRISTYN STURKEN

Expert advice for senior horse feed.

Feeding tips to ensure their best years are yet to come.

Thanks to advances in veterinary medicine and equine nutrition, horses are living longer than ever. While that's great news for horses and their owners, it often comes with nutritional considerations that can change over time. Depending on a variety of factors, senior horses may require dietary changes to ensure they stay happy and healthy throughout their golden years.

Many factors can impact nutritional needs, including activity level, body condition, seasonal climate, genetics and more. Some key changes to watch for include poor dentition and decreased digestive efficiency in absorbing certain nutrients due to aging metabolisms.

What makes a senior horse senior?

While there's no set definition, most experts agree horses 15 or older are generally considered senior. Some horses may show signs of aging earlier, while others stay youthful and spry well into their 20s.

Here's what to look for in aging horses:

Reduced digestive efficiency: Older horses may have difficulty absorbing nutrients like protein and vitamins.

Dental problems: Worn or missing teeth can make chewing hay and grain difficult, leading to weight loss and digestive health concerns.

Joint stiffness: Many senior horses experience decreased mobility due to joint and tendon wear.

Weakened immune system: Older horses may become more at risk for infections, parasites and metabolic disorders.

Changes in body condition: Some aging horses lose weight due to poor dentition or digestive issues, while others gain weight due to slower metabolism, metabolic conditions and less exercise.

Forage is still the foundation of their diet.

Forage should remain the primary component of a senior horse's diet, but adjustments may be necessary to accommodate dental and digestive health challenges.

High-quality hay: Soft, leafy hays are easier to chew and digest.

Forage alternatives: Pelleted hay extenders, hay cubes, chopped hay and beet pulp provide fiber and may be easier for horses with poor teeth to consume.

Pasture access: Grazing on fresh forage is encouraged because of its digestibility and essential nutrients.

"The hindgut in older horses, especially, is very important. One of the best ways we can support it in a clinical setting is by providing good, accurate nutrition."

DR. ABBY GEICK
Equine Veterinarian, New England Equine Medical & Surgical Center

Senior horse feeds and energy sources.

Because senior horses often struggle to maintain weight, providing additional calories from easily digestible energy sources may be a healthy strategy.

Senior horse feeds: Designed to be highly digestible and contain healthy levels of protein, fat and fiber.
Healthy fats: Flaxseed oil, soybean oil or rice bran can increase calories without excess starch.
Low-starch and low-sugar horse feed: Horses prone to metabolic disorders may benefit from controlled starch and sugar levels to help lower the risk of insulin resistance and related health concerns like laminitis.

"Supporting the hindgut microbiome is a really hot topic right now, especially managing postoperative colic cases or colitis," Dr. Geick says. "Extruded feed with lower starch and sugar levels helps support the hindgut by improving nutrient absorption in the small intestine, which is ideal for those cases."

Extruded feed formulated for senior horse health.

Extrusion takes finely ground ingredients and pressure cooks them with moisture into light, airy nuggets. Lighter and larger than feed pellets, these nuggets have more volume, which makes it easier for senior horses to chew and encourages slower eating.

The cooking process also allows extruded feed to break down faster and easier, as soon as a horse takes their first bite. This makes ingredients easier to digest, releasing more essential nutrients, including protein and starch where they're meant to be naturally absorbed in the stomach and small intestine.

"We use extruded feed as a preventative measure, particularly for older horses that have poor dentition or a history of choke," Dr. Geick says. "Extruded feed breaks down nicely in a mash, and it also contains adequate vitamins and nutrients, which really is key for older horses."

Vitamins and minerals.

A well-balanced vitamin and mineral profile is necessary to support aging horses.

Ca + P CALCIUM AND PHOSPHORUS	Important for maintaining bone density and preventing fractures.
E + Se VITAMIN E AND SELENIUM	Support immune function and muscle health.
B VITAMINS	Aid in digestion and metabolic health, particularly for horses with reduced gut function and support hoof health.
NaCl SALT AND ELECTROLYTES	Necessary for hydration, particularly in horses that drink less or sweat excessively.
Cu + Zn + Mn COPPER, ZINC AND MANGANESE	Promote bone health, immune function and coat/hoof quality.

Hydration and senior horse health.

Senior horses can be more prone to dehydration. Here are some steps you can take to ensure your patients stay happy and hydrated.

Fresh water: Ensure constant access to clean water, keeping it a suitable temperature in colder months, when horses may drink less.
Prebiotics and probiotics: Support gut health and nutrient absorption by promoting healthy gut biome.
Soaked feeds: Wetting feeds can make them easier to chew and digest, reducing the risk of feed-related choke and impaction colic.

"The longer a senior horse takes to eat its mash, the better," Dr. Geick says. "That goes back to producing saliva to buffer the stomach from gastric ulcers, and it's also easier on their teeth, so it's helpful for long-term dental health, as well."

Managing senior horse health conditions.

Understanding the health concerns senior horses face and implementing proactive strategies to avoid them can help your patients stay healthy and active longer.

If a horse struggles to maintain weight, consider:

- Increasing the amount of grain being fed.
- Switching to a higher fat feed.
- Increasing forage intake if a horse has dental issues by feeding chopped hay or soaked hay cubes, or pelleted hay extenders.
- Ensuring adequate protein intake to help prevent muscle loss.
- Checking for metabolic health conditions and/or dental issues.

If a horse has deteriorating teeth, consider:

- Monitoring eating behavior for additional signs of discomfort, like dropping feed or excessive salivation.
- Soaking feeds or providing mashes for horses with difficulty chewing.
- Feeding an extruded feed for ease in chewing.

If a horse has arthritis or mobility issues, consider:

- Supplements containing glucosamine, chondroitin sulfate and hyaluronic acid.
- Encouraging low-impact exercise to maintain flexibility and muscle tone.
- Providing soft, dry footing to prevent slipping and strain on joints.
- Consult your veterinarian for additional joint treatment options.

If a horse has, or is at-risk for, a metabolic disorder, consider:

- Feeding a diet lower in starch and sugar levels.
- Monitoring body condition to adjust calorie intake.
- Working with a nutritionist for appropriate dietary strategies.

Providing year-round nutrition.

In addition to senior horses, Dr. Geick says she often recommends extruded feeds to clients who live in colder climates, especially in the early spring months when there isn't adequate forage. At this time of year, horses have a higher caloric demand to keep warm.

That's when owners often see weight loss because physical changes are more apparent.

Get advice from experts who care.

Despite the heightened awareness of alternative feed forms and senior horse diets, Geick says the amount of information and products online makes it difficult for horse owners and veterinarians to know what feeds and supplements are backed by sound science.

That's an area where Dr. Geick says the Sentinel nutrition team plays an integral role in supporting the New England Equine Medical and Surgical Center, as they're able to recommend feeds, help educate owners and provide other valuable resources.

"There are a lot of old wives' tales in nutrition, and I think there's a lot of demystifying we, as equine professionals, need to be proactive about," Dr. Geick says. "Sometimes major management changes need to be done to prevent choke episodes, fecal water syndrome or to make sure certain horses are getting adequate nutrients as they get older."

> "You probably don't notice it if you look at the horse every day, until you see the shadow of the ribs, or you could see their topline a bit more. Extruded feed can play a strong role in providing the necessary fat and fiber content and calories for higher performing horses."
>
> **DR. ABBY GEICK**

Foal feeding tips for a strong start.

Expert nutrition strategies for healthy mares and growing foals.

Foaling season is one of the most critical times in equine management, requiring careful attention to nutrition for both the broodmare and the foal. Proper feeding ensures a healthy pregnancy, delivery and optimal growth and development.

During this period, the mare's dietary needs increase, necessitating adjustments to her feeding program to maintain health and provide essential nutrients for her foal. This chapter explores key dietary considerations for raising healthy foals in their first months of life.

Nutritional needs of pregnant mares.

The mare's energy needs increase dramatically in the final trimester of pregnancy as the foal undergoes rapid growth.
This is when it's especially important to ensure her diet provides added nutrients to support foal development while maintaining health and body condition.

Early and mid-gestation: months 1-7.

During the first two-thirds of pregnancy, the mare's nutritional requirements remain similar to those of a maintenance diet, but ensuring she receives balanced nutrition plays a crucial role in fetal development. Key nutrients like protein, vitamins and minerals support early formation of organs, skeletal structure and immune function in the foal. Deficiencies can impact bone density, muscle growth and overall health. It's essential to ensure the mare receives adequate:

Forage: High-quality hay or pasture should form the foundation of the diet.

Protein: Total diet should include 10-12% crude protein to maintain muscle and tissue integrity.

Vitamins and minerals: Adequate calcium, phosphorus and trace minerals like copper, zinc and manganese to support fetal bone development.

Energy: A balanced diet without excessive calorie intake to prevent obesity.

Late gestation: months 8-11.

As the foal's growth accelerates in the final trimester, the mare's nutritional demands increase significantly:

Protein: Increase protein in total diet to 12-14% to support fetal tissue growth.

Energy: Slightly elevated calorie intake to accommodate increased metabolic demands.

Calcium and phosphorus: Important for proper fetal skeletal development; maintain a 2-to-1 ratio.

Copper and zinc: Essential for strong fetal bone formation and connective tissue health.

A properly balanced concentrate feed designed for broodmares can help meet these increased requirements.

"That final third of gestation is a critical point to make sure you're providing adequate protein, vitamins, minerals and the calorie content to maintain that broodmare in at least a body condition score of five. For a lot of broodmares, you want to see a body condition score of six as they go into foaling."

DR. RANDEL RAUB
Sentinel Director of Research and Nutrition

Nutrition for lactating mares.

After foaling, the mare enters peak lactation, which places the highest nutritional demands on her body. Proper feeding supports milk production and ensures the foal receives the nutrients needed for strong early development.

Key nutritional considerations.

Increased energy needs: Lactating mares need 50-70% more energy than maintenance levels.
Protein: Should be at least 14-16% of total diet to support milk production and rapid growth.
Calcium and phosphorus: Crucial for milk quality and foal bone development.
Water: Increased intake is vital for milk production—provide constant access to clean, fresh water.
Fats and oils: Utilizing a higher fat feed or supplementing with stabilized rice bran, vegetable oils and flaxseed can provide additional calories without excessive starch.

A high-quality mare and foal feed paired with free-choice hay or pasture can help the mare maintain body condition while producing nutrient-rich milk.

For more information, check out our chapter on Nutrition for the Lactating Mare.

Foal nutrition: birth to weaning.

Proper nutrition in the first few months of a foal's life lays the foundation for a healthy, well-developed adult horse. Foals transition from relying entirely on mare's milk to consuming solid feed over time.

"You want to target a diet that's relatively lower in starches and sugars," Dr. Raub says. "If you're growing an equine athlete for a long, healthy, lameness-free, productive career, try to avoid any rapid changes in growth rate where you put the foal in a stress condition, usually around weaning."

The first few days.

The first milk produced by the mare, called colostrum, is rich in antibodies that protect against disease. Ensuring foals nurse within the first 12-24 hours is critical for passive immunity transfer. Newborns nurse multiple times per hour, so it's crucial to ensure the mare is producing adequate milk.

Weeks 1-8: introducing solid feed.

Foals begin nibbling on hay and grain within a few weeks of birth. Gradual introduction to high-quality feed supports early digestive development.

Creep feeding: Providing a specially formulated creep feed ensures foals receive essential nutrients without competition from the mare.
Protein: High-quality sources such as soybean meal or alfalfa support muscle and tissue growth.
Calcium and phosphorus: Proper ratios are essential for developing strong bones.
Digestive health: Prebiotics and probiotics can aid gut health and development.

3-6 months: preparing for weaning.

Left to nature, the mare will wean the foal between six and 12 months, but the industry standard is around four to six. At this point, lactation begins to drop off and the foal starts eating grain and forage. There are several schools of thought when it comes to the best way to wean foals.

One is to physically separate the mare and foal completely. The other is a gradual weaning, where the mare may be a few pens over, but still within sight. The idea is to diminish the overall stress level by separating them for shorter periods, while still learning herd dynamics.

"You might have an older horse in the pen, so younger horses have something to gravitate to as a herd," Dr. Raub says. "There's still some sight and visual interaction, so the theory is you're diminishing their overall stress level."

Exercise and developmental orthopedic disease (DOD) prevention.

While genetic disposition is a key factor in DOD, nutrition and exercise can play an integral role in lowering the risk of orthopedic disease in foals and supporting healthy bone and joint development.

Types of exercise for growing foals.

Turnout in large paddocks or pastures: Free movement in a safe, spacious environment allows foals to develop coordination and naturally strengthen their musculoskeletal system.
Interaction with other foals: Social play, including running and sparring, encourages natural movement patterns that promote joint and tendon strength.
Controlled hand-walking or ponying: In cases where turnout is limited, short, structured exercise sessions can provide needed movement without excessive strain.

By providing ample opportunity for exercise alongside proper nutrition, breeders can significantly reduce the risk of DOD and set young horses up for lifelong soundness and performance.

> "It's important to ensure these young, growing horses have adequate exercise or turnout in pasture or paddock. Are you physically exercising them at least five days per week for a given period of time? We've seen several studies where that can benefit and serve as some insurance against the development and severity of orthopedic disease."
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> **DR. RANDEL RAUB**

Your partner on the path to better help.

Access valuable resources, expert advice and personalized guidance.

The Sentinel team is committed to being a valuable and accessible resource for equine veterinarians, offering expert guidance and support in making informed nutritional recommendations. Whether you're managing equine health concerns or optimizing feed strategies, our experts are here to help. Visit the Sentinel Veterinarian Hub today to connect with our team and submit any questions you may have or to ask us about hay testing and analysis. Together, we can make a difference in helping all horses live healthier lives.

Visit Our Veterinarian Hub