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A Time to Learn, Build and Change

We all know that 2020 has been a year like no other. Everyone has been affected by the pandemic in one way or another. Although we cannot discount the difficulties brought upon us, I would like to take this time to focus on some of the positive changes that have occurred during this time. We have been fortunate in veterinary medicine to be considered essential workers, so although there was a short time that we were emergency/essential work only, we have been working hard to keep your pets safe and healthy during the pandemic. We are grateful to be able to continue serving you and your equine friends. Things may look different at times as far as how many students we can have with us and the fact that we are all wearing masks, but are just as committed, if not more so, to working hard to meet your needs.

The pandemic has forced many to slow down. There are fewer extracurricular activities and more nights eating dinner at home together with family. There were fewer soccer games and more family hikes and trail rides. My kids took this opportunity to get the horses in shape, and during the spring when they were home from school, they spent nearly every day riding through the fields and trails. This is when living in the country really paid off and it warmed my heart to see them enjoying one another's company and riding and laughing together. Physical education class was never so much fun! I suspect they will remember these times for years to come.

Recently, I participated in the Missouri Trail Riders Association fall ride and the veterinarians in attendance were asked how we keep our lives and our work interesting and stay engaged? The veterinarian asking the ques-



tions has practiced for nearly 50 years! This is thought provoking and can apply to any career. His valuable insight was, continue to learn, build and change. He also valued taking time for vacations or weekends away. For me, keeping veterinary medicine interesting has meant digging into my interest in equine dentistry and building new knowledge and skills to offer a wider range of services. It's not to say I don't still love a broad scope of veterinary medicine, but focusing one's skills builds discipline and confidence and the continued learning keeps every day challenging and interesting. Doing what we love keeps life interesting and for sure we would not be veterinarians if we didn't love what we do! I challenge you to ask yourself the same questions. What is it that keeps life and work fun, exciting and interesting? I hope horses will somehow be involved in your answer!

EQUINE AMBULATORY NEWS

Mission Statement:

The mission of our equine ambulatory service is to provide the highest standard of medical and surgical care to our patients while training the next generation of veterinarians.

Meet the MU Equine Ambulatory Team

Alison LaCarrubba, DVM, DABVP

Alison LaCarrubba, originally from New York, grew up riding hunter-jumpers and dressage from a young age. After graduating from Cornell University with a degree in animal science, LaCarrubba moved to the Midwest to obtain her veterinary degree. She graduated from the University of Missouri



College of Veterinary Medicine in 2001. LaCarrubba completed an internship in equine medicine and surgery at the university and subsequently spent a year working in an equine exclusive private practice. She returned to the university in July 2003 as a clinical instructor, and in 2009 she completed the specialty boards with the American Board of Veterinary Practitioners in Equine Practice.

LaCarrubba's love of equine dentistry has inspired her to continue her training in this area. In recent years she has attended a variety of advanced equine dental courses, which have allowed her to develop specialized skills and expertise in this field. As the equine dentist for the university, LaCarrubba is excited to see all things dental, from routine work to more complicated extractions. When she is not at work, she is spending time with her husband and three children. The whole family enjoys horses and riding together on Missouri's beautiful trails.

Martha Scharf, DVM, DABVP

Martha Scharf practices equine ambulatory medicine at the Equine Hospital. Scharf was born in Chicago and grew up riding hunter-jumpers in St. Louis. Since moving to Columbia she has continued to ride and started to explore three-day eventing. After earning a DVM at MU, she completed a rotating equine



internship at the university. Scharf has obtained certification in equine practice by the American Board of Veterinary Practitioners and completed chiropractic training for large and small animals. She continues to work as an assistant teaching professor for the Equine Ambulatory Service.

Scharf spends the majority of her time instructing senior veterinary students while providing quality medical care for horses within the Columbia area.

EOUINE AMBULATORY NEWS

She is particularly interested in wound management and emergency care in the ambulatory setting. Scharf works closely with the referral clinicians in the Equine Hospital to provide superior care to horses.

Kelly Sandelin, DVM

Kelly Sandelin grew up in Waterloo, Illinois, a small farming community just outside of St. Louis. She started riding horses when she was young, primarily showing in the jumper ring. After completing her DVM at the University of Missouri in 2019, she spent the past year as a rotating intern through the Equine



Medicine, Surgery and Ambulatory services. Sandelin is now the equine ambulatory resident and is working toward an ABVP certification in equine practice.

In her free time, she enjoys spending time with her fiancé and two Australian shepherds, cooking, and being with friends and family.

Our interns have a special interest in working with horses and potentially going on to complete a residency specializing in either equine medicine or equine surgery. Every June we welcome a new crop of interns. This year our interns include Xan Carlson, Kristen Mc-Curdy and Kari Means.

Xan Carlson, DVM

An Carlson grew up inDurham, North Carolina, as the middle child of five. She developed a passion for equine medicine at a young age through books and news stories. Carlson completed her undergraduate studies in animal science and history at North Carolina State University where she con-



tinued her schooling to graduate from the College of Veterinary Medicine in 2019. She completed a rotating equine internship at New England Equine Medical and Surgical Center. While fascinated by many aspects of equine medicine, she has particular interest in pain management and lameness evaluation.

In her free time, she enjoys hiking with her energetic mutt (a rescue through the Sato project), photography, drawing, baking and riding with friends.

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Take a foot radiograph: Not always, but often, the lameness is in the distal limb

Kristen McCurdy DVM

■ magine this: You go outside to bring your horse in for the night but your previously-sound best friend is now toe-touching lame. You ring the MU-VHC, and one of the veterinarians is now on the case. Shortly after arrival, the doctor takes a look at your horse's left front foot, and tells you everything will be fine — it's only an abscess that will most likely be healed before your jackpot next week. The abscess is opened and drained, a bandage placed, and some anti-inflammatories are administered for pain control. Your veterinarian gets to go home in time for dinner, you don't have to spend money on diagnostics, your horse gets pain relief and rest. Everyone is happy. This is the best case scenario and what we all hope for, but not always the way things go.

While veterinarians have many superpowers, x-ray vision is not one of them. If it were, our job would be a whole lot easier. Instead, radiographs can help your veterinarian see what is going on inside your horse's hoof — particularly the bones. Digital radiography has become standard for equine clinicians, and portable equipment has brought this imaging modality to ambulatory practice. While some injuries may require more advanced imaging like MRI, there are some common ailments that can be diagnosed easily with a radiograph in the field.

Foot abscesses can be very painful for a horse and tend to come on suddenly. An acute lameness is always an emergency. Your veterinarian will watch your horse walk, but usually the lameness is severe enough a full lameness exam isn't required or possible (however, some causes of lameness are more insidious, and flexions may be necessary).

Common things are common, and with 70 to 80 percent of equine lameness being localized to the front feet, the foot on the lame limb will be investigated unless palpation of the limb suggests otherwise. The veterinarian will look at the bottom of the hoof for any defects or soft areas and apply hoof testers to localize any focal areas of pain. This is where radiographs can play a key role in the investigation. Typically, two views are taken if an abscess is suspected — one from the front (dorsopalmar) and one from the side (lateromedial).

Abscesses are seen on radiographs as a gas shadow or black area within the sole or heel of the hoof. If the abscess is just starting to form, it may not be visible on radiographs. In this case, an abaxial sesamoid nerve block may be used to desensitize the foot. If the lameness improves significantly with the block, your horse may be treated as if they have an abscess with further *Continued on page 4*

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Kristen McCurdy, DVM

Kristen McCurdy grew upin Weatherford, Texas, where she also completed an internship at Equine Sports Medicine and Surgery this past year. However, this isn't her first time in Columbia as she completed her undergraduate studies at Stephens College, earning a bachelor's degree in biology with an



equine studies minor. She attended the University of Edinburgh in Scotland for veterinary school and while abroad traveled frequently and played on the women's rugby team. She is still an avid rugby fan and also enjoys running, trail riding/hacking and gaming. She has a Haflinger, Butters, back home in Texas whom she misses fiercely.

McCurdy's professional interests include equine surgery (especially orthopedics), sports medicine and regenerative therapeutics. She's excited to expand her knowledge and skill set with the support of faculty, students and her equine patients while at MU.

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Kari Means, DVM

Kari Means is originally from Fort Myers, Florida, where she learned to ride both hunter/ jumper and Western performance horses. She received her bachelor's degree in biology and a minor in communication studies from the University of Florida. She attended veterinary school at Texas A&M University



in 2019. After graduation, Means completed an equine internship at Oakridge Equine Hospital in Edmond, Oklahoma. She is interested in completing an equine surgical residency after her equine rotating internship at the University of Missouri.

In her free time, she enjoys spending time with friends and family and riding her horse.



Does My Older Horse Have Incisor Pain?

Alison LaCarrubba, DVM, DABVP (Equine Practice

n recent years a painful disorder of equine inc sor and canine teeth of aged horses has been reported. Equine odontoclastic tooth resorption and hypercementosis(EOTRH) is quite literally a mouthful. The hallmarks of EOTRH include pain, loose teeth, and periodontal disease, or inflammation of the supporting structures of the tooth. This is a disease of older horses and is most commonly diagnosed in horses older than 15. A similar disease is found in humans and cats, which results in tooth root resorption as well as tooth loss.

If you suspect your horse is having incisor problems or pain, you can perform the carrot test. This is where you offer a whole carrot and ask the horse to bite the carrot in half while holding then end. Many horses with incisor pain are reluctant to bite down on the carrot in order to break it in half. A definitive diagnosis of EO-TRH can be made after a complete oral examination and radiographic evaluation of the incisor and canine teeth. On oral examination, fractured or loose teeth may be noted, feed packing between the incisors, gingival recession, draining tracts/fistulas and malodor may be noted. Many horses with the disease are resistant to oral examination and have to be sedated to be properly examined. Radiographs are used to make a definitive diagnosis. Radiographic findings can include root resorption, fractured teeth, abnormalities of the pulp horn, and hypercementosis.

At this time there is not extensive information on the definitive cause of this disease. We suspect the disease starts out as periodontal disease and generalized inflammation and perhaps has an immune mediated component. The only definitive treatment of the affected and painful teeth



is extraction. Each case needs to be dealt with on an individual basis. Some horses will have only a few teeth that need to be removed and the extractions can be staged. Others have such advanced disease that they will be best served if all of the incisors/canines are removed.

This may sound dramatic but horses do very well without their incisors and will continue to graze and eat well when managed correctly. In fact, many of our EOTRH patients actually gain weight and eat more efficiently after extraction because they are no longer in pain. Typically these horses are much happier once the source of pain, the affected teeth, are removed and they go on to live a long life. The one thing we do have to remember is that once their incisors are extracted, the horses tongue will hang out of their mouth. This does not present any problems for the horse but can affect their noble image.

Abscess, continued from page 3

investigation only employed if there is no clinical improvement in a couple days.

Let's say the left front foot is positive to hoof testers at the toe. Your veterinarian is able to take radiographs, and she sees a gas shadow in that location. The sole over the abscess can then be pared away at that location. This release in pressure as the abscess drains often brings relief to the horse. Sometimes the abscess is too deep or the sole too hard for paring, and the foot needs to be soaked first in salt water or poultice wrap to draw out the abscess and soften the foot. A foot bandage with a salve to pull out the abscess will be applied. Products like Magna Paste, poultice pads, or a mixture of furacin and DMSO are commonly used for this. A regime of foot soaks and bandaging may be required and NSAIDs will be prescribed for pain relief.

Abscess are common and happen at inopportune times, but they don't usually cause issues after resolution



when treated properly. Speak to your veterinarian if your horse gets abscesses frequently or of increased severity as there may be an underlying issue that requires further investigation.

Emergency Wound Care in the Field

Kari Means, DVM

egardless of whether a horse is in their stall, in the pasture, at a show, or in their trailer, accidents can happen. Cuts or lacerations are a common emergency seen by all equine veterinarians. They can happen in a lot of different locations including the head, neck, limbs, or abdomen. Some lacerations can be very minor and not need any care; however, some can be quite extensive and require immediate veterinary attention. Wounds can vary from small, superficial skin wounds, larger wounds, or wounds extending into deeper and more important structures.

Depending on what is involved in your horse's laceration, different levels of care may be required, from on the farm management or more intensive care. If the wound is on a limb, extensive, or you do not feel comfortable with a wound, it is always best to contact your veterinarian. Clean the wound to avoid contamination and apply a bandage in order to protect it until your veterinarian arrives to assess it and develop a treatment plan.

When your veterinarian arrives, they will usually sedate the horse, which will allow for adequate assessment of the wound. The next step is clipping and cleaning the wound thoroughly to remove any contamination and facilitating more exploration to determine what structures may be involved and determine the best treatment options.

Each wound is different, so your veterinarian may decide to leave the wound open and allow it to heal by second intention, which is when the wound to heal on its own by filling in with granulation tissue. Some wounds are more amenable to suturing closed. Wounds that have very recently occurred are most amenable to suturing. When suturing, the



veterinarian will inject lidocaine around the wound in order to block any pain sensation in the area. After closure, sutures will have to be removed by your veterinarian in 10-14 days. Your vet will usually prescribe antibiotics and anti-inflammatories for several days. Bandaging and exercise restrictions will depend on where the wound is located and at the discretion of your veterinarian. Always keep your vaccination records close by because your veterinarian will want to know that the tetanus vaccination is up to date! If your horse has not been vaccinated within six months of the laceration, your veterinarian will want to booster it.

Distal limb wounds are especially common in horses. Unfortunately, there are many important structures in their limbs that can be potentially involved, such as joints, tendon sheaths, or bursas, or fluid filled sacs that help reduce friction between different tendons and bones. It is important to assess whether these synovial structures are involved. Infection of these structures can be potentially life threatening and performance limiting if they are not attended to quickly. If your horse has a distal limb wound, call your veterinarian immediately! Speedy response is often a key factor when these structures are involved to ensure contamination and infection are reduced to allow for the most successful outcome.

"What happens if I find out my horse has stepped on a nail!?" Although you want to remove the nail and get it out of your horse's hoof, the best thing to do is to leave the nail in, as long as leaving it in and your horse stepping on it won't cause it to go any deeper, and to call your veterinarian immediately. There are so many important structures in the hoof and a radiograph is needed to determine what structures could be involved. If you remove the nail, it may be difficult to find the puncture site and more difficult to find where the nail went in the hoof.

When in doubt, always call your veterinarian!

Vaccinate Against West Nile Virus

Lynn M. Martin, DVM, MPH, DACVIM (LAIM)

Have you noticed an increase in pesky mosquito bites? It's that time of year when we need to be thinking about West Nile virus infections in our horses. I have seen a number of West Nile cases (usually late summer and fall) in which horses were either unvaccinated or had not received a booster vaccination within the past six months.

West Nile encephalitis is an infectious viral disease, which is spread from avian hosts by infected mosquitoes (and some other bloodsucking insects) to horses, humans and other mammals. Horses are dead-end hosts and cannot directly transmit the disease from horse to horse or horse to human. Infection can result in clinical signs of fever and neurological disease. Horses can also be asymptomatic carriers (showing no signs of disease) or even show signs more consistent with lameness while the overall death rate is approximately 33 percent.

Vaccinations for West Nile virus are readily available to aid in prevention of viremia and reduction of clinical disease. The American Association of Equine Practitioners (AAEP) recommends West Nile virus vaccination as a one of five core vaccines that are considered essential standard of care for all horses in North America. Keep in mind that no vaccination is perfect, but the vaccines available for West Nile virus are well-tolerated by horses and better than no immunological protection at all.

Adult horses that have been previously unvaccinated or have an unknown vaccination history should receive a series of two doses administered at three to six-week intervals (depending on the specific type of vaccine used). Adult horses that have been vaccinated previously should be boostered every six to 12 months in Missouri. For more details about adult horses or pregnant mares and foals, consult your veterinarian.

If you would like to monitor equine West Nile virus cases for 2020, go to the USDA APHIS website and look for the "West Nile virus Annual Testing and Case Summary Reports." Note that reporting of positive West Nile virus cases in Missouri is not mandatory, and there are likely more positive cases in our state than what is shown on this website.

Another great resource for keeping track of Equine Health Alerts is the Equine Disease Communication Center (EDCC; www.equinediseasecc.org). Sign up for their email alerts and stay informed.

NSAID Use Demands Precautions

Xan Carlson, DVM

f you have been around horses, you have probably heard of or used non-steroidal anti-inflammatory drugs (NSAIDs). Perhaps it was to give Banamine to a horse with colic, Bute for a foot abscess or Equioxx for an older horse's osteoarthritis. There are myriad painful/ inflammatory conditions in horses that NSAIDs can help treat. While NSAIDs can be beneficial, administration can cause adverse effects. To provide the best treatment to horses - and avoid potential complications - it is important to understand the potential effects NSAID administration can cause.

NSAIDs are administered either intravenously (in the vein by a veterinarian) or orally (by mouth). Although Banamine is labeled for intramuscular administration, this route is strongly discouraged. While the IM route may seem easy

and straightforward, even with the cleanest technique for administration, there is a risk of infection with every injection. When Banamine is injected into the muscle, it can cause micro-damage to the tissue and sets up the perfect environment for clostridia bacteria. Clostridial spores can exist without problem in healthy muscle. Development of the spores occurs following injury to the tissue creating an oxygen-free space for the bacteria to grow. The bacteria release toxins that cause inflammation of the surrounding muscle and eventually lead to death of the tissue. The toxins enter the bloodstream and spread throughout the body, causing systemic damage.

The disease caused by activation of the spores is called Clostridial myonecrosis (aka gas gangrene). Although very few IM injections result in Clostridial myonecrosis, when the disease does occur, the outcome can be devastating. Of the approximately 50 percent of horses that survive, they do so after intensive hospital care that involves opening the muscle up to expose the bacteria to oxygen, removing dead tissue, and extensive wound management in addition to treating any other complications caused by the toxins released into the horse's system. Considering Banamine can be administered orally (both the paste and injectable formulations), giving it intramuscularly is not worth the risk.

The adage "too much of a good thing" applies to NSAIDs, particularly non-selective NSAIDs like Bute and Banamine. The enzymes that NSAIDs target promote formation of inflammatory mediators called prostaglandins. The mediators are not only involved in inflammation, but are also involved in regulatory functions, including protecting the *Continued on page* 7

Vigilance Needed to Stop VS Spread

Martha Scharf, DVM, DABVP (Equine Practice)

he frequent, stressful discussion of viruses this summer must also include vesicular stomatitis in our horses. Vesicular stomatitis (VS) a reportable disease, meaning it is tracked via state and federal regulatory veterinarians. For the second year in a row, this disease has been identified in Missouri and had reached four counties in southwest Missouri by August.

Transmitted by gnats and biting flies or saliva and fluid from the blisters of affected animals, this virus can affect horses, donkeys, mules, cattle, and pigs. The fluid can also be passed via human hands or contaminated equipment.

An infected horse will develop blisters on the lips, gums, and tongue. These blisters quickly rupture to form raw ulcerations that make it painful for the horse to eat and swallow. Horses may be seen avoiding food, drooling, or losing weight.

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NSAIDs, continued from page 6

stomach lining and repairing damage to the intestines. Prolonged use of NSAIDs increases the risk of stomach ulcers. The discomfort of ulcers leads to horses going off feed, resulting in weight loss. It can also cause behavioral problems, such as acting up when saddled (girthiness). Additional signs of ulcers include ventral edema (swelling under the belly) and soft feces/diarrhea.

The colon, particularly the right dorsal aspect, is another part of the GI tract that is susceptible to damage by NSAIDs. Inflammation of the right dorsal colon is called right dorsal colitis. The inflammation and edema causes abdominal pain, diarrhea and endotoxemia/septicemia (spread of bacterial toxins/bacteria through the body). Without prompt and intensive medical management, right dorsal colitis leads to death. A little NSAID provides pain relief; a lot of NSAID causes pain. Severely affected horses can also develop ulceration on the udder, sheath or coronary bands, resulting in lameness, abnormal urination, or intolerance of nursing foals.

Horses are diagnosed via a blood test that can be collected and submitted by your veterinarian to the National USDA Laboratory in Ames, Iowa. Results are typically returned within a week, but during the waiting period, suspect horses should be separated from healthy horses and no horses should move on or off the farm.

Horses usually recover without complication when treated with proper supportive care. Veterinarians most often prescribe anti-inflammatories and soft feeds but antibiotics can also be used to prevent secondary bacterial infections in severe cases of ulceration. Horses should remain isolated until the ulcers heal completely, usually in one to two months.

Prostaglandins help regulate blood flow to the kidneys. Without proper blood flow, the kidneys are damaged and lose function. Kidney injury due to NSAID administration generally occurs due to significant overdose or concurrent dehydration. Signs of dehydration and acute kidney injury can be non-specific and include going off-feed and lethargy, similar signs seen with colic or infectious disease – both of which are commonly treated with NSAIDs. Administering NSAIDs to a horse that already has compromised kidneys can do more harm than good. Therefore, prior to giving NSAIDs, it is important to ensure that a horse is adequately hydrated and only receives the prescribed dose. Bute and Banamine paste come in multi-dose tubes. Accidental overdosing can occur if the dial on the tube is not set to the correct dose. If accidental overdosing is suspected, contact a veterinarian immediately.

With the presence of VS in Missouri, it is important to stay vigilant and maintain biosecurity both on and off the farm. This includes avoiding contact with new horses, cleaning equipment between horses, feeding from individual buckets, insect control, and monitoring horses. Human infection with VS is very rare but is possible, resulting in flu-like symptoms. Those caring for diseased horses should wear protective equipment including gloves and wash hands when handling suspect or diagnosed horses.

As always, certificates of veterinary inspection are required when crossing state lines with your horses. However in order to prevent further transmission of VS this summer, a certificate may also be required for travel to or from areas within state lines so make sure to check with your destination before transporting your horses. Please feel free to call with questions about this disease or your summer horse travel.

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Selective NSAIDs like Equioxx are associated with less severe gastrointestinal injury. They are more specific in which enzyme they inhibit. The initial theory in development of selective NSAIDs was that they would inhibit only the enzymes responsible for generating inflammatory mediators, allowing the remaining enzymes to generate the protective mediators. The reality has fallen short of the theory; however, selective NSAIDs do appear to have less of an effect on the GI tract and kidneys. Equioxx is often recommended for long-term administration. However, it is still recommended to watch for signs of ulcers, colitis or dehydration as GI and kidney injury can still occur with selective NSAIDs.

NSAIDs help reduce pain and inflammation when used as directed by a veterinarian. We use them to help in the treatment of colic, arthritis and injured ligaments.

Squamous Cell Carcinoma Affects the Eye of Therapeutic Riding Pony

Alison LaCarrubba, DVM, DABVP (Equine Practice

Bunny Rabbit is an approximately 22-year-old pony of the Americas (POA) who presented to the Equine Ambulatory Service in the summer of 2020 for a mass on the lower eyelid. Bunny was recently donated to a local therapeutic riding program and this mass was present at the time of donation. Upon examination, it was noted that Bunny had an approximately 1.5 centimeter mass located on the lower eyelid that was highly suspicious of squamous cell carcinoma.

Squamous cell carcinoma is a malignant tumor originating from the epithelial surfaces of certain areas of the horse. Common locations for SCC include the eye, eyelids and third eyelid, as well as the genitalia.

These tumors are associated with ultraviolet radiation from sunlight and tend to affect horses with pink skin, such as American paint horses, Appaloosas, and POAs, but can affect any horse with pink skin. Other breeds that have a predisposition to SCC include Belgian draft horses and some Haflinger lines. Prognosis for horses with SCC is guarded if not found early and treated aggressively, so it is critical to continually examine horses with a predisposition to SCC. SCC can spread locally and become invasive, and spread to nearby lymph nodes or bones. Distant metastasis, although less common, is possible if left untreated.

The treatment of choice for SCC, especially those that are localized, is surgical excision. If complete surgical excision cannot be accomplished, it is important to follow up with an adjunct therapy, such a cryotherapy (freezing the area with liquid nitrogen), chemotherapy injected directly into the affected area, radiation or immunotherapy, or a combination. If the tumor is



Bunny, before treatment.

associated with the eye and has already become invasive, sometimes the treatment of choice is enucleation, or removal of the eye.

Although Bunny was a recent addition to the therapeutic riding program, it was obvious that she was a valuable pony who was able to be ridden by a variety of children. She had quite a following even though she was new to the barn. It was important to the program that Bunny be comfortable and that her vision be preserved if possible. After a complete physical examination, Bunny was sedated, and the area of the mass was infused with anesthetic to numb the entire lower lid.

It is important when working on or near the eye that we do not damage the eye itself, so it was critical that Bunny hold still during the procedure. As much of the mass as possible was surgically excised while not removing a significant amount of the lower eyelid, as the eyelids are critical to future ocular health.

After the surgical excision, the area was frozen using liquid nitrogen



Bunny, post-treatment.

and the pony was managed with anti-inflammatory medication and antimicrobial eye ointment. Knowing that the tumor would be persistent, and the likelihood of complete removal was slim, the pony was re-evaluated multiple times during the summer. On the second visit, a small margin of tissue in the same region was surgically excised and cryotherapy was again applied. Between Mae and July, the pony was evaluated four times and the last two times only cryotherapy was utilized. The owners are reliably using an ultraviolet protective fly mask and are watching closely for return of any tumor tissue

As seen in the photos, the eyelid margin at this time looks clean and without obvious tumor. Although Bunny's story has been positive to this point, it is critical to continue to closely monitor all horses that have been treated for SCC as these tumors tend to return.

We are all glad that Bunny can return to her riding program with no signs of discomfort and that her vision has been preserved.

Maintaining Ideal Weight a Challenge

Martha Scharf, DVM, DABVP (Equine Practice)

Many Midwest farms have abundant rich, hardy, nutritious grass that was originally designed by farmers for putting weight on cattle. Unfortunately, it can easily put unnecessary weight on horses as well and lead to serious health and soundness consequences.

Fortunately, most of the health effects are reversible with a good weight loss regimen. It's a good idea to consult your veterinarian before starting a weight-control program for your horse so all factors of their health can be considered and monitored. Once you're ready to get started, you can avoid creating new problems by keeping the following recommendations in mind.

Slow and steady

- Be patient. Weight loss takes time and too harsh of restriction can cause health side effects or misbehavior.
- Make changes in the type and

amount of feed gradually over seven to 10 days to avoid upsetting the digestive process.

- Track your horse's progress with a weight tape. If your measurements plateau too soon, decrease the ration and monitor.
- Gradually add time and intensity to a horse's exercise regime when possible to improve fitness and calories burning.

Restriction

- A motivated horse can eat its calorie requirements in grass in just a few hours. That means 24-hour turn out may be many times more than the grass it needs.
- Restricted hours of turn out can decrease grazing by preventing full day feasting. Grass is lowest in sugar content from 3 a.m. to 10 a.m. so overnight turn out may also help decrease sugar consumption.
- Grazing muzzles can be used to slow intake of grass while al-

lowing horses to remain on turn out. Even though the holes in the muzzle seem small, horses are motivated eaters and muzzles only decrease grass consumption by approximately onethird in most horses.

- If you're aiming to control your horse's intake in hay, remember that most horses do well with 1-2 percent of their body weight in forage. The amount can be adjusted from there as needed.
- Soaking hay for an hour or more before feeding can also help remove sugar content while still allowing the bulk provided by the forage.

Once your horse reaches its ideal body condition, most of these strategies will have to be continued to stabilize their weight. Make small adjustments as needed to account for changes in weather, activity, and stage of life. It's always a good idea to keep an open conversation with your veterinarian





Lameness Detector Now in Field Use

he University of Missouri Equine Ambulatory Service has recently acquired The Q with Lameness Locator system for field use. The Q with Lameness Locator is a body-mounted, inertial sensorbased, lameness detection and evaluation system developed by the University of Missouri from 1995–2007 within the E. Paige Laurie Endowed Program for Equine Lameness.

The University of Missouri commercialized this system in 2007 by licensing its distribution to a faculty startup company, Equinosis, with headquarters in Columbia, Missouri. The Q with Lameness Locator has now been acquired and adapted to equine practice use in about 500 veterinary colleges and private practices worldwide.

The system detects forelimb and hindlimb lameness with high sensitivity, provides evidence for which limbs are involved, and determines the timing of the lameness, in other words whether the weight bearing pain is greatest during the impact or pushoff phases of the stride. Veterinarians can use this information to help detect and localize the cause of lameness with more confidence, especially in mild or intermittent cases. It is completely noninvasive, and the veterinarian can perform a lameness evaluation as before, but with more sensitivity and objective evidence.

The horse is simply instrumented with three small, matchbook size sensors place on the head (in a special hat or on the halter or bridle), on the right front limb (in a pastern wrap), and on the top of the rump (with a special clip). It is most useful for determining the effectiveness of blocks for localizing the cause of lameness within the limb, for picking up mild lameness that is intermittent or difficult to see with the naked eye, for screening horses for lameness if it is suspected due to poor performance, for screening horses before and during training and rehabilitation, and for following and assessing response to treatment.

All inertial sensor measurements are collected live through wireless

transmission with ranges up to 100 meters, and analysis of data is immediate (no downloading or delayed analysis). A report is generated with graphs and measures that are interpreted by a veterinarian.

Algorithms (rules) called AIDEs [Automatic Interpretation and Degree of Evidence] for evaluating trotting in a straight line, lunging on different surfaces, before and after blocking, before and after flexion tests, and even under saddle (where the rider is also instrumented with a sensor attached to his/her lower back) have been developed and provided in the report. It can be used on all breeds of horses that can move at normally symmetrical gaits including the standard trot, the broken trot (for example in the Missouri Foxtrotter, and the rack and pace).

Most recently, using data and results in more than 1,200 horses presented for lameness evaluation using this system, an intelligent AIDE for detecting the primary source of lameness in multiple limb lameness presentation, has been added to the report.



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