EQUINE EDITION • Summer 2017 Vol. 4 • Issue 2 • WWW.VET-ADVANTAGE.COM

Promoting Excellence in Animal Health Sales

Veterinary advantage

An Official Publication of the NAVC



The Early Warning Signs of PPID

The early signs of pituitary pars intermedia dysfunction (PPID) are subtle, and may be difficult to notice

NAVC® The North American Veterinary Community

The Science of Safe

Safe-Guard® (fenbendazole) has a gentle mode of action and contains a molecule that makes it as safe as its name suggests.

- *Effective against large strongyles, small strongyles, pinworms and ascarids*
- *Apple flavored for improved palatability*
- *Safe for all horses, foals and pregnant mares*
- *An important component of a strategic deworming program*

Now that's safe.



safe-guard®
(fenbendazole)

Visit us online at **GetDewormingRight.com** to learn more about Merck Animal Health and the equine products and programs that help keep horses healthy.

Consult your veterinarian for the diagnosis, treatment, and control of parasitism.

Do not use in horses intended for human consumption. When using Safe-Guard® (fenbendazole) Paste 10% concomitantly with trichlorfon, refer to the manufacturers labels for use and cautions for trichlorfon.

The Science of Healthier Animals

2 Giralda Farms • Madison, NJ 07940 • merck-animal-health-usa.com • 800-521-5767
Copyright © 2017 Intervet Inc., d/b/a/ Merck Animal Health, a subsidiary of Merck & Co., Inc.
All rights reserved. 3654 EQ-FP AD Safe-Guard®

MERCK
Animal Health

Editor
Jennifer Ryan
jryan@NAVC.com

Managing Editor
Graham Garrison
ggarrison@NAVC.com

Art Director
Brent Cashman
bcashman@NAVC.com

Vice President of Sales & Marketing
Rick Boggess
rboggess@NAVC.com

Senior Account Executive
Kim Long
klong@NAVC.com

Western Regional Sales Manager
Doreen Carpenter
dcarpenter@NAVC.com

Production Manager and Digital Strategist
Paige Ellington
pellington@NAVC.com

Director of Marketing and Training
Rachel Bailey
rbailey@NAVC.com

Circulation
Laura Gantert
lgantert@NAVC.com

Group Publisher
Chris Kelly
ckelly@NAVC.com

Veterinary Advantage
3628 Blakeford Club Dr.
Marietta, GA 30062
866-388-8212 phone
866-615-9232 fax

2017 editorial board

Kim Allen, Henry Schein Animal Health
Spencer Breithaupt, MWI Animal Health
Clay Cass, Merritt Veterinary Supply
Jeannie Jeffery, Henry Schein Animal Health
Jackie King, AVDA
Karen Miller, Midwest Veterinary Supply
Kevin Pohlman, Patterson Animal Health
George Rasi, NEVSCo
John Ryan, MWI Animal Health

NAVC The North American Veterinary Community
An Official Publication of the NAVC



Summer 2017

WWW.VET-ADVANTAGE.COM

EQUINE
Imagining Advances with Imaging • BY JENNIFER RYAN
Magnetic resonance imaging (MRI) helps equine veterinarians understand all musculoskeletal problems better **pg4**

COVER STORY
The Early Warning Signs of PPID • BY JENNIFER RYAN
The early signs of pituitary pars intermedia dysfunction (PPID) are subtle, and may be difficult to notice **pg6**

OSTEOARTHRITIS
Looking for Symptoms • BY DAVID THILL
Early action could help decrease the long-term effects of osteoarthritis **pg10**

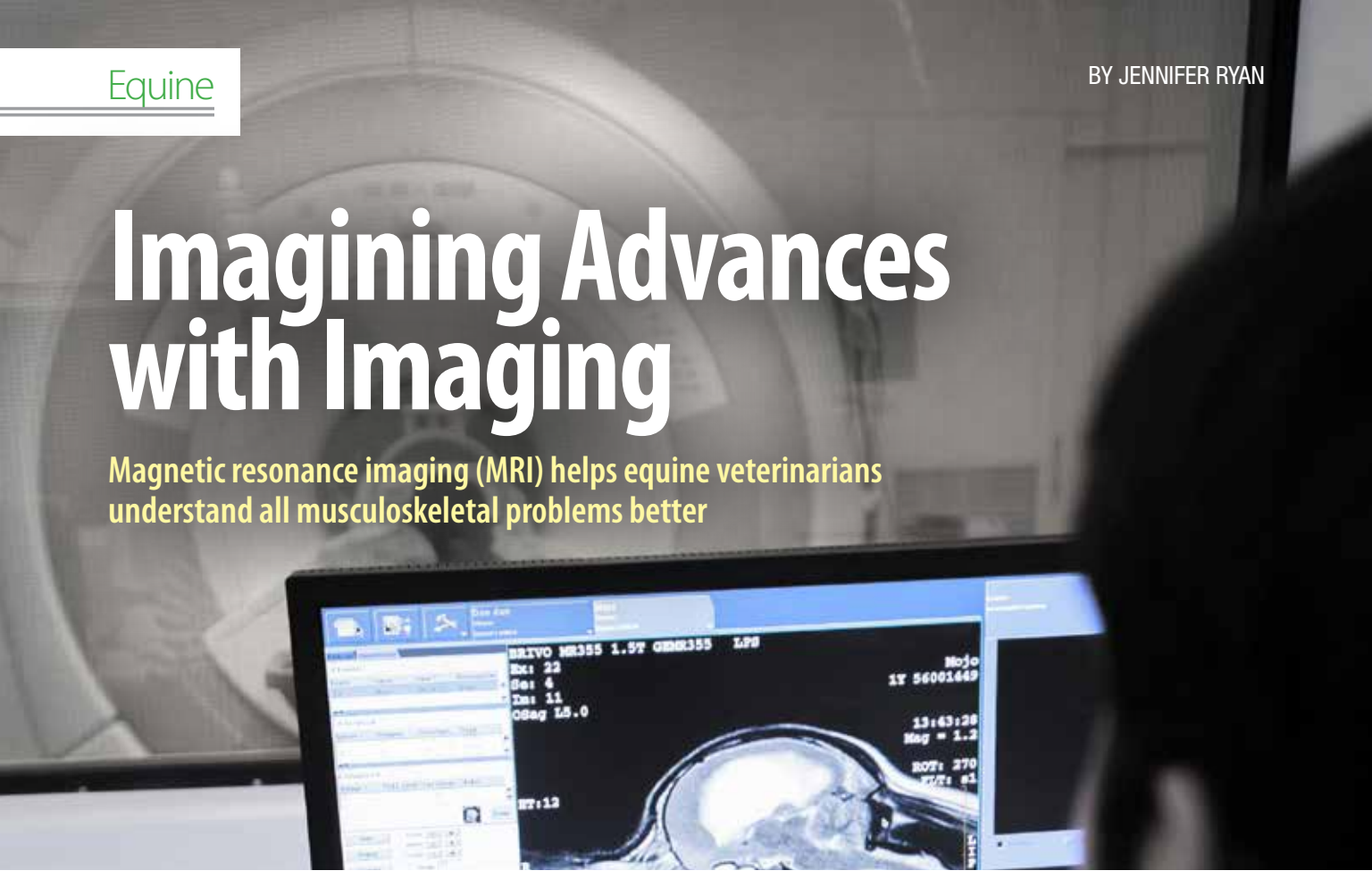
NEWS **pg14**

Veterinary Advantage magazine Equine edition is published three times per year, PO Box 862151, Marietta , GA 30062. Copyright 2017 All rights reserved. Subscriptions: $49.00 per year for individuals; issues are sent free of charge to dealer representatives. If you would like to subscribe or notify us of address changes, please contact us at the above numbers or address. POSTMASTER: Send address changes to Veterinary Advantage, PO Box 862151, Marietta, GA 30062. **Please note:** The acceptance of advertising or products mentioned by contributing authors does not constitute endorsement by the publisher. Publisher cannot accept responsibility for the correctness of an opinion expressed by contributing authors. Periodicals Postage Paid at Marietta, GA and at additional mailing offices.

BY JENNIFER RYAN

Imagining Advances with Imaging

Magnetic resonance imaging (MRI) helps equine veterinarians understand all musculoskeletal problems better



Equine magnetic resonance imaging (MRI) has been rapidly adapted, and the resulting images have helped veterinarians identify and treat patients more precisely than ever before.

"It's been revolutionary for us," says Alison J. Morton, DVM, MSpVM, DACVS, DACVSMR, clinical associate professor large animal surgery at the University of Florida College of Veterinary Medicine. "MRI has helped us diagnose musculoskeletal problems we couldn't prior. It's helped us augment and improve our other diagnostics too."

At the university, Morton uses a Toshiba Titan, high-field MRI with a 1.5 Tesla magnet. The machine was designed for human use originally. The equipment is important, but Morton says the software helps technicians get the most from the resulting images.

"We can get enhanced anatomic detail and see physiological things, like cardiovascular conditions and cartilage mapping – not just where the cartilage was injured but also components of the cartilage at a microscopic level," Morton says. "The technology advances constantly. We are upgrading things all the time, not just the physical parts of the machinery, but the software too."

Advancing the industry

The detail from an MRI has helped equine veterinarians interpret other diagnostic tools, like ultrasounds and X-rays.

"We've learned quite a lot from MRI on how to read and take radiographs better," Morton says. "Especially for soft tissue injuries. There are things we never used to identify on ultrasonography, particularly imaging of tendons and ligaments. These were all done with horses bearing weight on the limb. MRI has shown us lesions we missed in these areas, and we have learned that a simple, non-weight-bearing ultrasound allows some lesions to open up and be better identified."

Ultrasounds can be technically demanding, and MRIs have helped fine-tune techniques to get the best images. Morton cautions that not any one imaging technology can do it all. CT scans can be better for bony structures. In some cases, all the imaging modalities at a veterinarian's disposal can be used on one case to get the most complete picture.

"An MRI is helpful because it tells us about the structure in a three-dimensional way," she says. "It's made us more critical of our skills and more demanding of our equipment."

MRI can also be used to provide surgical guidance. For example, a recent case of Morton's involved a chronic abscess in the foot that hadn't resolved normally. It infected a whole tract that couldn't be previously identified, and an MRI was performed to provide additional information on the exact location where surgery was needed.

"We've learned a lot about disease," Morton says. "Tendon surgery has been revolutionized since we've been doing MRIs. We can realize other injuries that happen in these areas, especially in tendon sheaths and soft tissues of the foot."

With additional information provided by MRI, veterinarians can outline the treatment plan and better define the prognosis. Morton notes the detail on MRI improved our understanding of injuries to the proximal suspensory ligament of the hindlimb and helps separate cases that can be improved with surgery or others that are degenerative and won't recover at all.

Best bets for MRI

MRIs are very commonly used for any horse with lameness that localizes to the foot, although it is used for many other joints, too, Morton says. Typically, a horse may have been treated for something in the foot and hasn't responded well. Or, a horse may be a valuable upper-level performance horse, in which case an MRI may be recommended immediately.

"A large majority of our cases are English sporthorses, but pleasure and pasture horses can be candidates too," Morton says. "Our patients reflect our population of horses in this part of Florida. In different areas, people may see more Western performance or race horses."

MRIs for every horse

The MRI at the University of Florida College of Veterinary Medicine is a traditional high-field MRI machine, meaning the horse must be anaesthetized and laid on its side. As with any human or horse that receives anesthesia, there are risks, Morton cautions.

"For horses, their large size and laying down for a long period of time can have complications from pressure on muscles and nerves," she says. "We have a low complication rate, but there is still the potential for that."

As an alternative to down MRI, standing low-field MRIs offer an option for horse owners and veterinarians that want to avoid anesthesia. With these machines, a light sedative is used and the horse walks into the machine on its own.

"A lot of times, we've had horses that already received a standing MRI and were referred for further screening," Morton says. "It's a very good diagnostic tool, but it doesn't give you as much detail. When you get into the upper limbs, it can be difficult for the horse to remain still enough to get a good image."

On the other hand, Morton has referred cases to standing MRI machines because the horse wasn't a good fit for anesthesia, for example: late-term pregnant mares, horses with a history of reactions to anesthesia or cases where the pressure of being on one side for long could be risky.

Most MRIs are done on the lower part of the leg, says Dan Brown, BVSc ACIM, vice president, North America, for Hallmarq Veterinary Imaging, which manufacturers standing MRI machines for horses.

"If you know from nerve blocks that the lower leg is where the horse is lame, standing MRIs are a great option," Brown says. "Ultrasound is difficult to use in the hoof wall, X-rays may not give you an answer."

MRIs can image through the hoof wall, and, unlike X-rays, can image both bony and soft tissues. In most cases, MRI is an option where normal lameness work-ups have failed to provide an adequate answer. Fetlock injuries and navicular cases are commonly referred to MRIs for additional information.


Dan Brown

MRI tips

While standing MRIs may offer a more convenient option, Brown says that horse owners should expect any MRI machine to require that a horse's shoes be removed, and even a light sedative may require a withdrawal time for competitive horses.

"An MRI is a huge magnet, and metals and magnets don't mix well," he says. "There is no risk to the horse or the people using it from the magnet. There is no radiation, but the rooms will often be shielded simply to prevent interference from radio waves."

Lameness in horses can have many causes, but MRI offers owners and veterinarians a robust diagnosis tool. The resulting information can then be paired with the right treatment plan to help the horse recover quickly, and without wasting money on interventions that may or may not work.

"MRI should be considered in any case of lameness where the veterinarian doesn't have a clear answer," Brown says. "It's very hard to know how to proceed without knowing the cause." ■

Hear more about MRIs from Alison Morton at NAVC VMX Feb. 3-7, 2018



The Early Warning Signs of PPID

The early signs of pituitary pars intermedia dysfunction (PPID) are subtle, and may be difficult to notice

BY JENNIFER RYAN

As the weather changes, many horse own-ers will be helping their horse shed its longer, thicker winter coat. In some cases, owners may notice patches of longer hair that is slower to shed out in the spring or maybe even a little loss of muscle mass. These could be early signs of pituitary pars intermedia dysfunction (PPID), a disease that requires long-term management to keep a horse healthy.

Signs

Also known as equine Cushing's disease, PPID can cause signs that are subtle and easy to miss, such as a decrease in activity. The disease can progress to include loss of muscle mass and hair coat changes.

"They may seem quieter than normal, perhaps duller," notes Nicholas Frank, DVM, Ph.D., DACVIM, professor at the Tufts

University Cummings School of Veterinary Medicine. "It progresses to changing the body of the horse. They begin to look a little thinner. The key signs of development are hair coat changes."

A horse with PPID won't shed out it's haircoat until later in the summer, and owners may see patches of hair that still haven't shed out. As the disease progresses, the horse will look thinner due to less muscle mass and display the characteristic thick, long haircoat that never sheds out at all.

Changes in haircoat is a sign that's particularly noticeable in a herd of horses where most are slick, but one is slower to shed out compared to herd mates, says Steven Grubbs, DVM, Ph.D., DACVIM, equine technical manager, Boehringer Ingelheim.

"It's something I'm not going to notice in February," Grubbs says. "But in the spring and early summer, it shines a light and makes you think about that horse."

Some owners may discount the early signs thinking their horse is too young for PPID to develop. For today's performance horses, a 15-year-old horse is not considered that old, he adds.

"If owners notice a loss of muscle mass over the topline, there's a kind of change in just where the saddle fits," Grubbs says. "Now, when you start seeing one of these early signs, you start seeing others and piling up the changes. Abnormal sweating, although not considered an early sign, has been shown in a recent study to be a predictor of PPID. A veterinarian may not catch during an exam unless prompted by the horse owner. We really don't have good prevalence data on PPID. According to the information we have, 15 to 20 percent of horses greater than 15 years of age will have PPID."



As PPID progresses, the horse will display the characteristic thick, long haircoat that never sheds out. Photo courtesy of Boehringer Ingelheim

Causes

PPID is considered the most common endocrine disease of horses. PPID-affected horses have a loss of dompaminergic inhibition, which leads to an overgrowth and/or enlargement of cells in the pars intermedia region of the pituitary gland. This decrease or lack of dopamine contributes to the production of abnormally high levels of many pituitary hormones, including adrenocorticotropic hormone (ACTH). Although the exact pathophysiology remains to be determined, these processes lead to the long list of outward problems seen in affected animals. All horses are going to undergo the aging processes that can lead to the development of PPID, Frank says. In some horses, this will occur at a faster pace. While older horses are more likely to develop PPID, veterinarians are seeing the disease develop earlier. Every breed is susceptible to PPID, but breeds that struggle with obesity and high insulin concentrations are more likely to develop equine metabolic



Nicholas Frank Tufts



Steven Grubbs



With veterinary care and management of PPID, horses can still be ridden.

Photo courtesy of Boehringer Ingelheim

syndrome (EMS), which can predispose them to PPID. EMS is another problem with the horse's endocrine system.

"Ponies, Morgan horses and Arabian horses are predisposed to have problems with equine metabolic syndrome," Frank says. "However, there are many horses from these breeds that don't have EMS or PPID."

Treatment

"PPID is one of the most manageable diseases we have in the horse," Frank says. "With proper treatment, we can see the horse return to normal and – even in the case of advanced horses – we can do a lot with medication."

The mainstay of PPID treatment is Prascend® (pergolide tablets), which is the only FDA-approved treatment for control of PPID. It must be given once daily for long-term management of the disease. PPID is a chronic condition. There is no cure.

Treatment can control the signs and lead to a better quality of life for the horse, Grubbs says. Typically, improvement may be seen within 30 days, but it may take longer for specific haircoat changes to improve. Occasionally, after starting on treatment, certain horses may have a decrease in appetite or a period of inappetence, Grubbs says. This can be managed easily by dose reduction or taking them off treatment for a few days. Prascend is single scored, making them easy to break in half, if needed. Tablets should not be crushed due to the potential for increased human exposure.

"We've seen lethargic horses start feeling and acting better," he says. "We've heard folks say 'he's back to his old self.' What we want to do is manage the whole horse, and it's easier to identify those early signs and treat it earlier."

> "If a vet was looking at a horse with severely clinical signs, in that situation, he or she could easily start treatment and a diagnosis could be made on response to treatment."
>
> **– Nicholas Frank, DVM, Ph.D., DACVIM**

DSRs familiar with Cushing's in dogs should note the disease has distinct differences in horses. "The diagnostics and treatment for PPID in horses are very different compared to dogs with Cushing's disease," Grubbs says.

Testing

Identifying PPID starts with a veterinary examination. However, owners and trainers are more likely to notice the early, more subtle signs.

"The majority of the time, it takes both the veterinarian and the owner," Grubbs says. "I'm going to go out and see the horse once a year, or sometimes twice, and may not notice things in the course of a 10-minute exam like lethargy. The history we get from the owner is very important so it's important for owners to become familiar with what those clinical signs are."

After an exam, diagnostic tests are available to confirm a diagnosis of PPID.

Signs of Pituitary Pars Intermedia Dysfunction (PPID)

Early Signs	Advanced Signs	
• Decreased athletic performance	• Lethargy	• Recurrent infections (e.g. sole abscesses)
• Change in attitude/lethargy	• Generalized hypertrichosis	• Bulging supraorbital fat
• Delayed haircoat shedding	• Loss of seasonal haircoat shedding	• Absent reproductive cycle / infertility
• Regional hypertrichosis	• Skeletal muscle atrophy	• Laminitis
• Loss of epaxial muscle mass (topline)	• Rounded abdomen ('hay belly')	• Seizure-like activity
• Regional adiposity	• Abnormal sweating (increased or decreased)	• Blindness
• Laminitis	• Polyuria/polydipsia	• Parasitism
		• Tendon laxity

Frank N, et al. Recommendations for the Diagnosis and Treatment of Pituitary Pars Intermedia Dysfunction (PPID). Equine Endocrinology Group (EEG). August 2015.

For horses with early signs of PPID, Frank recommends a thyrotropin-releasing hormone (TRH) stimulation test. TRH causes the pituitary gland to release more hormones. Specifically, ACTH concentrations increase to a higher level in horses with PPID.

For more advanced cases, a resting ACTH blood sample can be collected. PPID horses will have a higher level of hormone compared to benchmarks.

The outward signs of advanced PPID cases are well documented, which may lead a veterinarian to recommend starting treatment immediately.

"If a vet was looking at a horse with severely clinical signs, in that situation, he or she could easily start treatment and a diagnosis could be made on response to treatment," Frank says. "For earlier cases, we do need diagnostic testing combined with a clinical evaluation."

Added care

Many horses with PPID have compromised immune systems. Therefore, additional veterinary care should be provided to PPID horses. For those that also have EMS, high insulin concentrations predispose horses to laminitis. Grazing in the spring and early summer may result in laminitis more easily in PPID and EMS horses, Grubbs notes.

"We tend to have issues in the springtime because we've got a lot of fast growing green grass containing a higher level of carbohydrates," he says. "A lot of times laminitis will go unnoticed. Those horses may not get really lame. However, a farrier will look and see growth rings, or they may have had laminitis in the past. Maybe the horse really didn't show a lot of pain. Repeat episodes still have devastating effects over time."

In addition to watching for laminitis, PPID horses may need additional skin, dental and parasite control. Skin infections can be more frequent especially in the wintertime.

Horses also won't be able to fight off parasites as easily. Frank recommends checking parasite levels with regular fecal egg count (FEC) tests and deworming more intensively if needed.

"The consequences of lapsing with good healthcare can mean dental problems if a horse develops a tooth root abscess or a foot abscess," Frank says. "Good dental and farrier care are important to a horse with PPID."

Even with these extra precautions and care, Frank notes these horses can still have a useful life.

"As long as they don't have complications like laminitis, they can – and should – be ridden," Frank says. "It's a question of managing disease and the complications associated with it." ■

For more information:

- The Equine Endocrinology Group (EEG) http://sites.tufts.edu/equineendogroup/
- ID PPID from Boehringer Ingelheim www.idppid.com

BY DAVID THILL

Looking for Symptoms

Early action could help decrease the long-term effects of osteoarthritis



Osteoarthritis – often referred to simply as OA – is painful, not only for humans, but for their horses, too. The condition, in which the horse's protective joint cartilage erodes, leading to bone exposure, is one common factor contributing to lameness. But lameness is not the only symptom. By looking for other earlier symptoms, such as inflammation, and taking steps to mitigate them, horse owners may be able to keep OA from becoming a significant problem.

Symptoms

Lameness is often considered the primary sign of OA, but other signals may come earlier, says Stacey Buzzell, DVM, equine technical services manager at Nutramax Laboratories Veterinary Sciences, Inc. "This can be as simple as a change in demeanor under saddle or in the field," she says. Other early indicators include an unwillingness to move forward or to work, a change in activity level during turnout, and difficulty working with the farrier.

Horse owners must not jump to conclusions, though, says Buzzell. "It is very important for owners and trainers to be familiar with each horse as an individual in order to pick up on subtle changes, and rule out medical causes with the veterinarian, before attributing any changes to a behavioral issue," she says.

The only specific cause of OA is development of inflammation within a joint, says Buzzell. Inflammation, she says, can happen as a result of repetitive concussion of the joint, poor conformation, injury, infection, and instability.

Inflammation activates enzymes that lead to cartilage degradation. This process leads to exposed bone, which can progress to sclerosis – increased bone formation and hardening – which can then lead to osteophytes, or bone spurs, and joint fusion, Buzzell explains.

Hoyt Cheramie, DVM, M.S., DACVS, senior manager, equine specialist in large animal veterinary services at Merial, Inc., says trauma – which can lead to inflammation – is the most common cause of OA. Trauma, he says, can lead to one of several conditions. These include:

- **Synovitis –** inflammation of the inner synovial (or joint) lining.
- **Capsulitis –** inflammation of the fibrous, outer joint capsule.
- **Sprain –** injury of ligaments of the joint.
- **Intra-articular fracture –** fracture of the bone that extends to the joint surface.
- **Meniscal tear –** injury to the meniscus of the stifle (the femorotibial joint).

Cheramie adds that "most spontaneous joint disease in the horse is likely associated with micro-trauma to the synovial lining and joint capsule due to daily work and use. Without early, appropriate therapy, the inflammatory process often progresses to eventually result in osteoarthritis."

Symptoms such as pain, stiffness, and decreased range of motion can appear from very mild to severe, "and may not necessarily reflect the severity

Joint Health Products from Dechra Veterinary Products

Orthokine® irap 60: When osteoarthritis occurs, excessive amounts of the aggressive signaling protein interleukin-1 form inside the joint, causing inflammation and leading to further damage in the joint. The principle of Orthokine irap 60, or interleukin 1-receptor antagonist protein, is to use the body's own natural defense against these signaling proteins. It is collected via specialized syringe and administered via intra-articular injection.

Phycox® Joint Supplement Max EQ is a formula aimed at maintaining healthy joints and flexibility. It contains phycocyanin, a natural antioxidant that supports the body's normal defense against the harmful effects of free radicals that cause cellular damage and inflammation. It also contains boron for bone health, creatine monohydrate for muscle health and strength, as well as cranberry extract for urinary tract health. It carries the National Animal Supplement Council quality seal of approval, and is sold through veterinarians.

(**Source:** Shelly Derks, marketing manager, equine and specialty products, Dechra Veterinary Products)

Joint Health Products from Merial

Equioxx® is a Non-steroidal anti-inflammatory drug (NSAID) containing firocoxib as the active ingredient. It is available in paste, tablet and injectable formulations and is a prescription medication. As an NSAID, Equioxx works by blocking the production of prostaglandins through cyclooxygenase (COX) enzyme inhibition. It is considered a "coxib" or highly selective COX-2 NSAID, thus blocking the production of prostaglandins responsible for pain and inflammation while sparing production of COX-1 prostaglandins that support blood flow, clotting and gastroprotection.* Equioxx is designed for once a day dosing.
(*Clinical relevance has not been determined.)

Legend® (hyaluronate sodium) is a hyaluronic acid joint therapy available for both intravenous (IV) and intra-articular (IA) administration. Legend Injectable Solution treats joint dysfunction of the carpus or fetlock in horses due to non-infectious synovitis associated with equine osteoarthritis. Treatment with Legend may be repeated at weekly intervals for up to three treatments. Legend delivers the same efficacy whether administered IV or IA. IV administration is ideal for treating clinical and subclinical synovitis when an IA injection may not be warranted.

(**Source:** Hoyt Cheramie, DVM, M.S., DACVS, senior manager, equine specialist in large animal veterinary services at Merial, Inc.)



of the underlying damage in the joint," cautions Cheramie.

Buzzell says that conformation can be a strong indicator of the likelihood that a horse will develop OA. Poor conformation can place undue stress on a horse's joints, she says.

The horse's activity level can also play a part. For example, athletic horses might perform activities, such as cutting, jumping, and sliding stops when reining, that place extra stress on their joints.

Age may play a role as well, says Buzzell. Just as cartilage wears naturally with age in humans, the same is true for horses. However, she adds that age is not a definitive factor

Joint Health Products from Nutramax Laboratories

Cosequin® is an oral joint health supplement for horses. The base of all four of the supplement's formulas is FCHG49® glucosamine hydrochloride and TRH122® chondroitin sulfate. These ingredients work to support the structure and maintain the health of the cartilage and have been shown in studies to work better together than either ingredient alone. The Cosequin® original formula can benefit young horses entering into work or horses with healthy joints in light work.

Cosequin ASU further expands on the Optimized formula with the addition of NMX1000® avocado/soybean unsaponifiables (ASU), an extract from the oil of the avocado and soybean. The synergistic effects of glucosamine, chondroitin, and ASU have been shown in cell culture studies to reduce mediators of the inflammatory response that can lead to cartilage breakdown. Cosequin ASU Plus takes the line a step further with hyaluronic acid (HA) and green tea extract (EGCG). The combinations of HA/ASU and EGCG/ASU have been shown to improve upon the supportive and protective effects of the ingredients alone. These two formulas can be used in any horse, but are ideal for horses in heavy work or those that have cause for concern relating to their joint health.

Cosequin Optimized with MSM builds on the original formula with a higher level of glucosamine and the addition of methylsulfonylmethane (MSM). There is a limited amount of research on MSM, but studies have shown its ability to function as an antioxidant and support the health of the cartilage. It is an organic source of sulfur that supports the structure and flexibility of the cartilage. Horses in work with healthy joints would be ideal candidates for this formula.

Welactin® Equine is an omega-3 fatty acid fish oil supplement providing DHA (docosahexaenoic acid) and EPA (eicosapentaenoic acid) in a peppermint-flavored liquid. Fish oil has also been shown to support joint health through the modulation of mediators involved in the inflammatory response by EPA and DHA, supporting comfort and improving stride length in horses.

(**Source:** Stacey Buzzell, DVM, equine technical services manager at Nutramax Laboratories Veterinary Sciences, Inc.)

Joint Health Products from Bimeda Animal Health

Flunazine® (flunixin meglumine) injection and oral paste relieves pain associated with osteoarthritis by reducing inflammation in the joint.

Tandem Oral is a supplement containing joint-healthy ingredients such as chondroitin sulfate, glucosamine, hyaluronic acid and MSM (methylsulfonylmethane). Those ingredients are known to help support the production of cartilage and maintain normal inflammation levels in the joint.

Butatron® (phenylbutazone) is indicated for managing pain and inflammation due to osteoarthritis. Butatron is available in tablet form.

Polyglycan is a joint lavage. It helps restore synovial fluid (the liquid "cushion" between bone ends), thereby restoring the physical characteristics to aid in proper joint function.

(**Source:** Emmanuelle Lemaire Galliot, DVM, marketing manager, Bimeda Animal Health)

when it comes to determining the likelihood that a horse will develop OA.

Again, says Buzzell, it depends on the individual horse, whose specific history "would be more likely to paint a clearer picture of susceptibility." Previous injuries or infections can have some bearing, she says.

Treatment

Managing a horse's joint health and being aware of changes in the animal's behavior are the best means for prevention, says Buzzell. Appropriate joint management, she says, includes maintaining a healthy weight, visiting the farrier regularly, ensuring the horse partakes in regular activity with adequate warm-up and cool-down periods, "and identifying and addressing any signs of pain or lameness early on with the guidance of a veterinarian."

Horses will naturally have inflammation caused by daily work and activity, and that inflammation can be exacerbated by factors such as poor conformation, injury, and over-work, says Buzzell. "This inflammation has to be managed and kept under control to prevent or slow the progression of OA.

"This doesn't mean that [horses] all require a non-steroidal anti-inflammatory (NSAID) every day or shouldn't be in work." Buzzell points out that regular movement helps to promote the transfer of nutrients in and wastes out of the cartilage cells – "somewhat like a sponge."

OA isn't totally preventable, Cheramie admits. But horse owners can still try to reduce its effects, he says. He also believes inflammation management is important – specifically, early identification of joint inflammation. Addressing initial signs, such as mild heat, swelling, stiffness, and qualities that are "just not right" in the horse's movement allows for earlier therapy to stop or minimize the inflammatory process and progression, he says.

Buzzell says that regular veterinarian visits will help ensure early OA detection, and regular trimming or shoeing by a proficient farrier can help reduce joint stress. Also, she says, exercise combined with a balanced diet aids in maintaining a healthy body weight, which helps to prevent undue stress on the joints.

Managing a horse's joint health and being aware of changes in the animal's behavior are the best means for prevention.

Sometimes non-invasive symptom treatments are the most effective management strategy for OA, says Buzzell – "but that decision should be made with the veterinarian based on the individual animal and rate of progression of the disease. Many cases will involve a combination of things, or multi-modal management, which will change over time." ■

Industry News

Bimeda: Altresyn® (altrenogest) rebranded OvaMed™ following product acquisition from Ceva Animal Health

Bimeda Inc. announced the renaming of its altrenogest product for horses. The product, formerly marketed as Altresyn® was recently acquired from Ceva Animal Health as part of Bimeda's strategic expansion into the equine segment. "The trade name OvaMed™ more closely aligns with Bimeda's brand identity and is a key step in the integration of the recently-acquired equine products within our portfolio and global brand," said Emmanuelle Lemaire-Galliot, Marketing Manager for Bimeda North America. OvaMed™ is currently shipping to Bimeda's distributors to fulfill veterinary orders. For more information, visit www.bimedaus.com and www.bimedaequine.com.

Jaguar Animal Health and Napo Pharmaceuticals enter merger agreement

Napo Pharmaceuticals, Inc., a human health company developing and commercializing novel gastrointestinal prescription products from plants used traditionally in rainforest areas, and Jaguar Animal Health, Inc., an animal health company focused on developing and commercializing first-in-class gastrointestinal products for companion and production animals, foals, and high value horses, announced that they have entered into a definitive merger agreement by unanimous approval by the boards of directors of both companies.

KC Animal Health Investment Forum applications now open

Applications are now open for the 2017 KC Animal Health Investment Forum. The KC Animal Health Investment Forum provides a unique opportunity for venture capital funds, investment firms and animal health companies to hear from emerging companies with the newest technology. The KC Animal Health Investment Forum offers one of the only opportunities in the world for early stage companies in the animal health sector to present their vision and business plan to potential investors. Companies presenting at the Forum have raised over $183 million. Several have also received licensing agreements or distribution contracts. Please contact Kimberly Young with any questions. For more information, visit: http://kcanimalhealth.thinkkc.com/events/investment-forum

Zoetis, AAEP announce scholarship recipients

Four soon-to-be veterinary graduates committed to careers in equine medicine have been selected to receive $4,000 scholarships from Zoetis and the American Association of Equine Practitioners (AAEP) Foundation, according to a release. The awards will be presented during the Nov. 19 scholarship ceremonies, held in conjunction with the AAEP's 2017 Annual Convention in San Antonio, Texas. The Zoetis/AAEP Foundation scholarship program, now in its fifth year, rewards graduating veterinary students with a dedication to equine medicine for their academic excellence, leadership in their school and AAEP student chapter, and their long-term goals. Since 2013, 26 graduates have received more than $115,000 in scholarships and support from Zoetis. The 2017 scholarship recipients include:

- **Sarah Colmer,** University of Pennsylvania;
- **Benjamin Davids,** University of Florida;
- **Molly Viner,** University of California, Davis; and
- **Katie Weber,** University of Wisconsin.

More information about AAEP Foundation scholarship programs is available at foundation.aaep.org/apply-for-funding/scholarships.

OSPHOS®
(clodronate injection)

controls the clinical signs associated with

NAVICULAR SYNDROME

Easily Administered
via intramuscular injection

Well Tolerated*
in clinical trials

Proven Efficacy*
at 6 months post treatment

No Reconstitution Required



Dechra
Veterinary Products

Learn more online
www.dechra-us.com
www.osphos.com

As with all drugs, side effects may occur. In field studies, the most common side effects reported were signs of discomfort or nervousness, colic, and/or pawing. OSPHOS should not be used in pregnant or lactating mares, or mares intended for breeding. Use of OSPHOS in patients with conditions affecting renal function or mineral or electrolyte homeostasis is not recommended. Refer to the prescribing information for complete details or visit www.dechra-us.com or call 866.933.2472.

CAUTION: Federal law restricts this drug to use by or on the order of licensed veterinarian.

* Freedom of Information Summary. Original New Animal Drug Application, NADA 141-427, for OSPHOS. April 28, 2014.

Dechra Veterinary Products US and the Dechra D logo are registered trademarks of Dechra Pharmaceuticals PLC. © 2017 Dechra Ltd.

OSPHOS® (clodronate injection)

Bisphosphonate
For use in horses only

Brief Summary (For Full Prescribing Information, see package insert)

CAUTION: Federal (USA) law restricts this drug to use by or on the order of a licensed veterinarian.

DESCRIPTION: Clodronate disodium is a non-amino, chloro-containing bisphosphonate. Chemically, clodronate disodium is (dichloromethylene) diphosphonic acid disodium salt and is manufactured from the tetrahydrate form.

INDICATION: For the control of clinical signs associated with navicular syndrome in horses.

CONTRAINDICATIONS: Horses with hypersensitivity to clodronate disodium should not receive OSPHOS.

WARNINGS: Do not use in horses intended for human consumption.

HUMAN WARNINGS: Not for human use. Keep this and all drugs out of the reach of children. Consult a physician in case of accidental human exposure.

PRECAUTIONS: As a class, bisphosphonates may be associated with gastrointestinal and renal toxicity. Sensitivity to drug associated adverse reactions varies with the individual patient. Renal and gastrointestinal adverse reactions may be associated with plasma concentrations of the drug. Bisphosphonates are excreted by the kidney; therefore, conditions causing renal impairment may increase plasma bisphosphonate concentrations resulting in an increased risk for adverse reactions. Concurrent administration of other potentially nephrotoxic drugs should be approached with caution and renal function should be monitored. Use of bisphosphonates in patients with conditions or diseases affecting renal function is not recommended. Administration of bisphosphonates has been associated with abdominal pain (colic), discomfort, and agitation in horses. Clinical signs usually occur shortly after drug administration and may be associated with alterations in intestinal motility. In horses treated with OSPHOS these clinical signs usually began within 2 hours of treatment. Horses should be monitored for at least 2 hours following administration of OSPHOS.

Bisphosphonates affect plasma concentrations of some minerals and electrolytes such as calcium, magnesium and potassium, immediately post-treatment, with effects lasting up to several hours. Caution should be used when administering bisphosphonates to horses with conditions affecting mineral or electrolyte homeostasis (e.g. hyperkalemic periodic paralysis, hypocalcemia, etc.).

The safe use of OSPHOS has not been evaluated in horses less than 4 years of age. The effect of bisphosphonates on the skeleton of growing horses has not been studied; however, bisphosphonates inhibit osteoclast activity which impacts bone turnover and may affect bone growth.

Bisphosphonates should not be used in pregnant or lactating mares, or mares intended for breeding. The safe use of OSPHOS has not been evaluated in breeding horses or pregnant or lactating mares. Bisphosphonates are incorporated into the bone matrix, from where they are gradually released over periods of months to years. The extent of bisphosphonate incorporation into adult bone, and hence, the amount available for release back into the systemic circulation, is directly related to the total dose and duration of bisphosphonate use. Bisphosphonates have been shown to cause fetal developmental abnormalities in laboratory animals. The uptake of bisphosphonates into fetal bone may be greater than into maternal bone creating a possible risk for skeletal or other abnormalities in the fetus. Many drugs, including bisphosphonates, may be excreted in milk and may be absorbed by nursing animals.

Increased bone fragility has been observed in animals treated with bisphosphonates at high doses or for long periods of time. Bisphosphonates inhibit bone resorption and decrease bone turnover which may lead to an inability to repair micro damage within the bone. In humans, atypical femur fractures have been reported in patients on long term bisphosphonate therapy; however, a causal relationship has not been established.

ADVERSE REACTIONS: The most common adverse reactions reported in the field study were clinical signs of discomfort or nervousness, colic and/or pawing. Other signs reported were lip licking, yawning, head shaking, injection site swelling, and hives/pruritus.

OSPHOS®
(clodronate injection)

Dechra
Veterinary Products

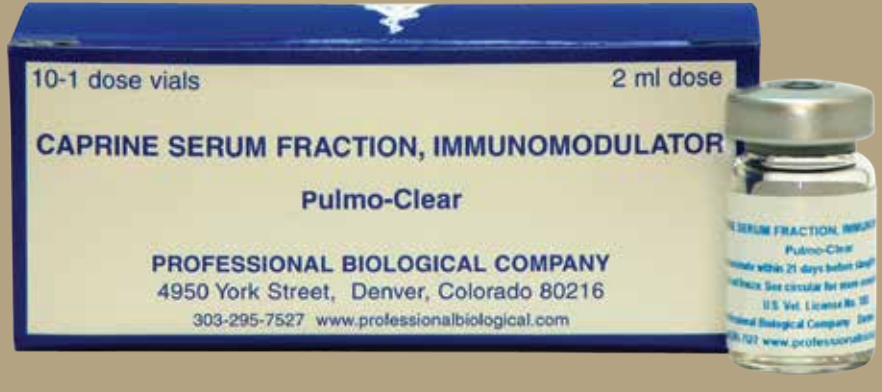
Distributed by: Dechra Veterinary Products
7015 College Boulevard, Suite 525
Overland Park, KS 66211 866-933-2472

© 2017 Dechra Ltd. OSPHOS is a registered trademark of Dechra Ltd. All rights reserved.
NADA 141-427, Approved by FDA



Concentrated | Purified | Easy & Ready to Use | Clean & Natural | Safe

EQUINE LOWER RESPIRATORY DISEASE



Efficacy studies demonstrate that Pulmo-Clear, when used with adjunctive therapy, successfully clears Equine Lower Respiratory Disease (ELRD), leading to increased recovery rates and reduced recovery times in affected horses. In fact, combined data from field studies show that Pulmo-Clear helps promote an overall ELRD recovery rate as high as 86 percent.

COLORADO SERUM COMPANY

www.colorado-serum.com • 800.525.2065