



HEALTH ZONE *Joint Health*

Updates from the AAEP Convention

Preparing Joint Injection Sites

BY DR. NANCY S. LOVING



Care should be taken when preparing a site for a joint injection

When administering equine joint injections, veterinarians must take steps to minimize the risk of septic arthritis developing in the treated joint. Particularly in equine athletes, septic arthritis can be a devastating and debilitating complication, though aggressive treatment returns a large range (27-92%) of affected horses back to work.

At the 2012 American Association of Equine Practitioners' (AAEP) convention, held Dec. 1-5 in Anaheim, Calif., Dr. Stephen Adams, of Purdue University's School of Veterinary Medicine, described appropriate site preparation and needle selection for septic arthritis prevention.

"Up to 80% of septic arthritis cases subsequent to joint injections are due to Staph species that, in fact, live on the horse's skin, as well as the veterinarian's skin," Adams said. "One can never completely disinfect all layers of all portions of the skin."

Still, preparing the injection site helps minimize the risk of joint contamination. In previous studies veterinarians have demonstrated that the presence of hair at the injection site does not inhibit antiseptics' ability to effectively reduce the skin surface bacterial flora to an acceptable level. In other recent studies, investigators proved that scrubbing with chlorhexidine was superior to using tamed iodine (Betadine solution).

Adams recommended veterinarians perform a two-stage prep using sterile gauze sponges, chlorhexidine/saline, and isopropyl alcohol applied with gloves. He discouraged using prefabricated solutions, such as jars of gauze presoaked in Betadine or chlorhexidine solution, as they are susceptible to airborne contamination.

Needle size and direction of insertion can also impact the veterinarian's chances of introducing tissue fragments and hair into a joint. Adams reported that using 18-gauge spinal needles in humans during arthroscopy produced identifiable tissue fragments in the joint 100% of the time. In two studies in which he sought to

find methods to minimize the joint contamination risk, Adams came to the following conclusions:

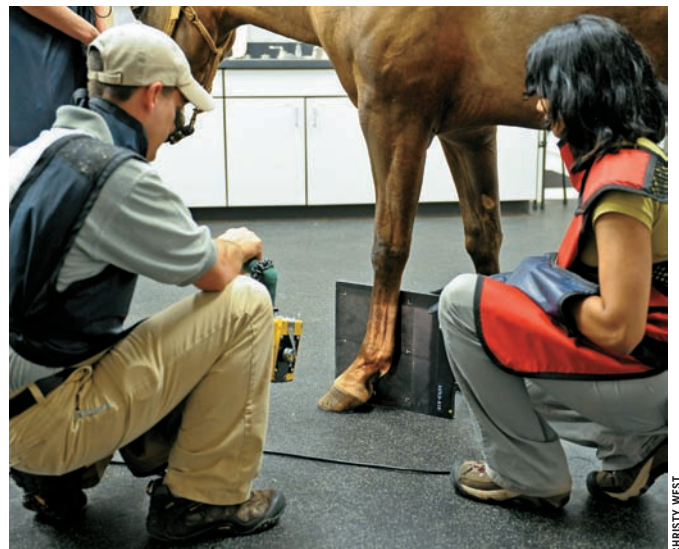
- Clipped or razored hair increases the risk of hair contamination into the joint by 2.4 times and 1.69 times, respectively;
- Reusing a needle increases contamination risk by 1.7 times;
- It is best to use the smallest needle possible; 22 gauge is better than 20- or 18-gauge;
- After placing a needle in the joint, allow the needle to clear with dripping joint fluid when possible;
- It is preferable to insert a needle at an angle to the joint surface rather than straight in;
- It is preferable to use 22-gauge spinal needles (rather than larger needles) to decrease the risk of introducing hair fragments;
- Removing the stylet (the fine wire that runs through the needle) from a spinal needle increases contamination risk fivefold;
- Deep layers of the skin cannot be disinfected; and
- There is no need to remove hair prior to joint injection unless using 20-gauge or larger spinal needles.

In conclusion, Adams stressed that veterinarians should take considerable care when preparing a site for joint injection, along with selecting optimal needle size and placement to minimize joint contamination and risk of developing infection.

Limb Positioning for Assessing Joints Via X-Ray

BY DR. STACEY OKE

Lower limb radiographs can help practitioners uncover valuable information about bones, joints, and joint balance in equine athletes, but Colorado State University researchers have determined the usefulness and accuracy of this information depends largely on how the horse stands during X-ray capture.



How a horse stands is vital to getting reliable radiographs

A NEW THERAPY FOR LEGS, JOINTS, AND FEET

The Stayons product line represents the first instant poultice therapy that saves the time and labor typically needed to prepare, apply, and then wash off a standard poultice. Poulticing a leg is now as easy as applying a daily standing wrap.

These poultice products are available in several popular formulas, but the active materials are enclosed in patented self-contained wraps that conform to the leg, foot, or joint. The products are briefly soaked in either hot or cold water and then applied like an ordinary wrap and covered with a typical "set up" bandage of the user's choice.

An advantage of the Stayons hoof poultice is that it

comes up over the heel and completely encases the foot inside a conforming custom designed cover.

The wraps last from 12 to 24 hours, depending on leg and exterior conditions, and are simply removed like an ordinary standing wrap, with no need for the usual time-consuming washing.

Developed by horsemen in collaboration with a major school of veterinary medicine, the Stayons product line is designed to provide all the advantages of traditional poultice treatments but eliminate most of the time and labor associated with poultice therapy.

Visit our website www.hamiltonbiovet.com or call 800-367-0266.

"Imbalances in certain joints such as the interphalangeal joints, also called the pastern and coffin joints, can influence gait, biomechanics, and soundness in horses," said Dr. Erin Contino of CSU's College of Veterinary Medicine, in her presentation at the AAEP convention.

Imbalances can occur for several reasons, such as the horse's natural conformation, the type of shoe it is wearing, or the way it is shod. Imbalances in the foot where one heel bulb is "higher" than the other, for example, can impact the balance of the joints higher up in the limb, change how the horse bears weight, and even affect how he moves. In fact, notes Contino, foot imbalances can influence gaits, biomechanics, and soundness.

Further, Contino and colleagues suspected that how the horse's foot is positioned while taking radiographs can influence joint balance, making accurate X-ray interpretation difficult if the foot is not positioned appropriately.

To test this theory, the researchers took radiographs (dorsopalmar, taken directly from the front to back of the limb) of 14 limbs in nine horses. During the study the team placed horses in three different positions: square, and in 5° and 10° abduction (by moving the foot out sideways). They measured two "sides" of the pastern and coffin joints (the later and medial joint spaces) in all three positions. Key findings were:

- Limb abduction resulted in narrowing of the joint space on the medial (inner) aspect of the joint; and
- Joint balance differences between the different limb positions were statistically significant.

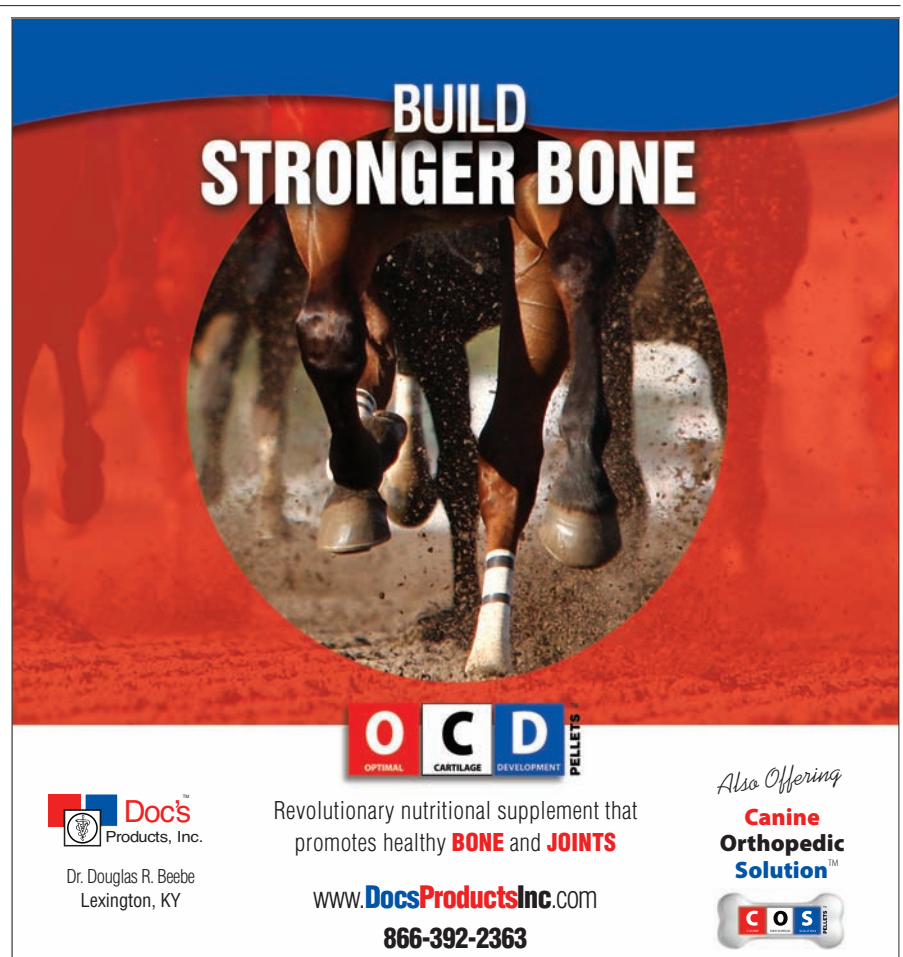
"As we hypothesized, how a horse is positioned while taking the X-rays significantly affects joint balance," said Contino. "Practitioners are therefore encouraged to position the horse as squarely as possible as correct positioning is essential for evaluating the pastern and coffin joint spaces."

Supplement to Support Post-Surgical Joint Health

BY ERICA LARSON

A research team from the Nutraceutical Alliance shared some good news for owners of horses with osteoarthritis at the AAEP convention: A nutritional supplement fed immediately after osteochondral fragment removal surgery could help reduce the amount of post-surgical inflammation in the joint.

Dr. Wendy Pearson, president of the Nutraceutical Alliance, presented study results at the convention.



BUILD STRONGER BONE


OCD PELLETS
OPTIMAL CARTILAGE DEVELOPMENT

Doc's Products, Inc.
Dr. Douglas R. Beebe
Lexington, KY

Revolutionary nutritional supplement that promotes healthy **BONE** and **JOINTS**

www.DocProductsInc.com
866-392-2363

Also Offering
Canine Orthopedic Solution™



STAYONS™ - The First Instant Poultice Designed by horsemen for horsemen



- Briefly soak in water, place on horse and secure
- Prepares in seconds, lasts for 12 to 24 hours
- Leg and hoof wraps in various poultice formulas
- Custom-designed poultice boot - durable, disposable, reusable



Visit our website to see videos!

hamiltonbiovet.com
800.367.0266, 978.356.3014



HEALTHZONE

Joint Health

Pearson explained that researchers had previously shown that a joint supplement—"4CYTE," produced by the Australian company Interpath Pty—that contains a patented plant extract inhibited prostaglandin E2 (PGE2, a chemical produced by the body that is involved in inflammation and in pain perception) production in horses with experimentally

DYNASPLINT

Do you have a yearling that hasn't outgrown a limb deformity? Or a foal or weanling that isn't coming around on its own?

It's not too late to let Dynasplint Systems be the solution.

Dynasplint Systems has a non-invasive and effective approach to help straighten out a lingering limb issue.

The key to its effectiveness is the spring-loaded technology that provides a gentle stretch to contracted soft tissue, making it a one-of-a-kind device in the equine market.

The Dynasplint method of stretching provides a biologically correct stimulus to allow the soft tissue to elongate at its own pace, resulting in a permanent length change and restoring joint mobility. While the joint is being stretched, the limb is allowed to move freely.

Dynasplint Systems also play a key role in treating injuries related to a laxity of soft tissues by providing support to the soft tissue structures. The Dynasplint is able to support the joint, holding it in a natural position while still allowing flexion and extension of the limb.

In conjunction with your veterinarian and farrier, Dynasplint Systems are able to address a wide variety of conditions in animals of all ages including, but not limited to, angular limb deformities, carpal and fetlock contractures (upright pasterns), club feet, injuries resulting in laxity of the fetlock or carpus, ruptured or lacerated tendons and ligaments, radial nerve paralysis, as well as providing post-surgical support.

So when life throws you a curve ball, let Dynasplint be your gentle solution to a straight success.

Dynasplint Systems
Toll-free: 800-638-6771, ext. 2222
Email: vet@dynasplint.com

STRAIGHTENING OUT THE CURVES LIFE THROWS YOU

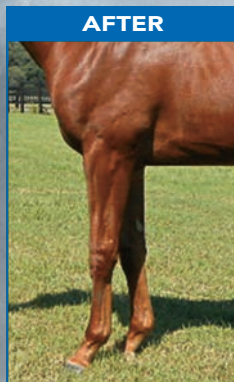
DYNASPLINT®

CAN HELP PUT YOUR
YOUNG HORSE ON A
STRAIGHT PATH

TO THE WINNER'S CIRCLE!



BEFORE



AFTER

Dynasplint® Systems has a noninvasive approach to correct limb deformities in horses of all ages!

"I began with a yearling who in my opinion, was too upright in the pasterns to withstand training. I was amazed that with only 28 days of Dynasplint therapy, we were able to improve his pastern angles enough not only to train soundly, but to win!"

-Donna Burnham
Breeder and Trainer Ocala, FL.

Gain of 10 degrees was made in pastern angles



DYNASPLINT SYSTEMS, INC.

Toll-Free: 800.638.6771, Ext. 2222
Email: vet@dynasplint.com
Website: www.dynasplint.com

Healthy Joints Win Races!

Congratulations to All!
Proud Sponsor
Gary Stevens



- ONLY ONE***
Equine Joint Supplement is Clinically Proven to do it ALL!
- ✓ **Increase HA Production!**
 - ✓ **Reduce Joint Injections!**
 - ✓ **Reduce Lameness Scores!**
 - ✓ **Maximize Bioavailability!**

actistatinequine.com



Ask Your Veterinarian or Call Today for a Free Consultation 866-587-7333

induced joint inflammation. In the current study researchers evaluated the effect of the supplement in horses with articular inflammation and/or joint damage due to osteoarthritis fragments in the knee or fetlock.

The team hypothesized that including the supplement in affected horses' diets would "reduce synovial fluid PGE2, nitric oxide (both indicators of pain and inflammation), and glycosaminoglycan (an indicator of cartilage breakdown), while improving clinical signs of articular inflammation in

these horses," Pearson said.

They studied 15 horses undergoing surgery to remove abnormal pieces of cartilage, called osteochondral fragments, from the surface of either the knee or fetlock joint. Horses received either 21 grams of the supplement per day, starting immediately after surgery, or they acted as controls and received an equal amount of a placebo supplement.

Pearson said the team analyzed horses' synovial fluid before and after supplementation, specifically assessing PGE2, nitric oxide, and glycosaminoglycan levels; they

also took radiographs of the affected joints and performed lameness examinations.

The researchers found:

- 45 days after surgery, synovial fluid PGE2 levels were significantly lower in horses consuming the supplement;
- No significant decline in synovial fluid PGE2 in horses treated with surgery alone;
- 60% of control horses had radiographic evidence of periosteal reactions and/or

ACTISTATIN

Joint problems are the number one cause of down time in equine athletes. GLC Direct supplies the equine industry with patented joint products proven to work. GLC Direct's newest product takes joint care to a whole new level. Backed by three patents and two clinical trials, Actistatin Equine is proven to increase hyaluronic acid (HA) production, lubricate and nourish joints, reduce joint pain, and improve joint flexibility.

How does it work? How is it different? Actistatin works with the horse's digestive processes to increase gastric survivability of beneficial proteins and nutrients thereby increasing their effectiveness. In other joint formulations, the majority of the glucosamine and chondroitin is destroyed/digested in the stomach, never getting fully utilized. Actistatin Equine is the only joint supplement to couple the patented and clinically proven GLC 5500 formula with this new Actistatin technology, providing better therapy for your horse's joints. Actistatin creates a more favorable environment within the digestive system, allowing key ingredients to survive digestion. Cartilage and soft tissues are nourished, and HA production increases when larger amounts of key ingredients arrive at destination cells. This leads to better lubrication and healthier joints. In clinical testing Actistatin more than doubled the delivery of both glucosamine and chondroitin in the horse.

Actistatin is clinically tested for safety and efficacy. One hundred percent natural and safe for horses at all levels of competition, it will not test. Actistatin is the most effective oral joint supplement available. Contact your veterinarian to purchase Actistatin Equine NOW or call GLC Direct (866-587-7333) to learn more or visit www.ActistatinEquine.com.

There is
NO GENERIC
ADEQUAN® i.m.
(polysulfated glycosaminoglycan)

Get the facts at nogenericadequan.com



Brief Summary Indications: For the intramuscular treatment of non-infectious degenerative and/or traumatic joint dysfunction and associated lameness of the carpal and hock joints in horses. There are no known contraindications to the use of intramuscular Adequan® i.m. brand Polysulfated Glycosaminoglycan in horses. Studies have not been conducted to establish safety in breeding horses. WARNING: Do not use in horses intended for human consumption. Not for use in humans. Keep this and all medications out of the reach of children. Caution: Federal law restricts this drug to use by or on the order of a licensed veterinarian. Each 5 mL contains 500 mg Polysulfated Glycosaminoglycan. SEE PRODUCT PACKAGE INSERT FOR FULL PRESCRIBING INFORMATION. Adequan® is a registered trademark of Luitpold Pharmaceuticals, Inc. ©LUITPOLD PHARMACEUTICALS, INC., Animal Health Division, Shirley, NY 11967. AHD 12-004, Iss. 11/12 D-LP112001a-TBH

Dandy Products, Inc.

Padding & Flooring Specialists



"Padding At Its Best"

Breeding Sheds, Stocks, Stalls, Trailers, Exercise & Training Areas,
Induction & Recovery Rooms Table & Surgical Pads, Neo-Natal Foal Beds

Non-Slip Safety Floors for All Areas

Pavesafe Bricks & Tiles, Trac-Roll & Vet-Trac Floors, Wash Stall, Grooming, Aisleway and Trailer Mats

Toll-Free 888-883-8386 • 513-625-3000 • FAX 513-625-2600
3314 State Route 131, Goshen, Ohio 45122 • www.dandyproducts.net

DEGENERATIVE JOINT DISEASE

What is degenerative joint disease? Also referred to as osteoarthritis (OA) by definition, this process is ongoing and a normal occurrence or an expected change with age. It is characterized by inflammation of the affected joint due to deterioration of the cartilage of the end caps of the bones that are in contact. The amount of destruction of this cartilage determines the degree of arthritis and arthritic changes to the joint in question and has tremendous bearing on the amount of athletic use the equine performer can withstand.

The clinical signs associated with osteoarthritis have a wide range of symptoms, ranging from mild effusion to lameness and extreme swelling, heat, and loss of range of motion of the affected joint, and decreased weight bearing. OA is caused by different things. It can be brought on by trauma to an affected joint as well as by normal "wear and tear" over time; by conformation defects that create uneven wear of joint cartilage; by infections introduced into the joint (via injection of septicemia or "blood infection"); by the immune system whereby the animal's own defenses start destroying the surrounding structures and eventually the cartilage as well; and by injecting cartilage-destroying compounds into joints. A typical rule of thumb for OA is that the symptoms are directly proportional to the amount of cartilage loss or damage. OA has many causes and numerous presentations in the horse. The difficulty is proper diagnosis of the joints being affected.

The best way to make sure that your horse can continue to

perform at its discipline without setbacks in training due to the effects of OA are to develop a routine that evaluates your horse regularly. You should have a routine that allows you to palpate all four of your horse's limbs and see if they are symmetrical in size and range of motion upon flexion. In addition you need to evaluate your horse's normal gait at the walk and trot prior to saddling, or tacking your horse up for its regular exercise or work routine. Finally, you should notice your horse's posture in its stall, whether it lies down more than normal or tends to pile bedding under its front feet. Anything that is a break from your horse's regular behavior or routine could be an early sign of change or joint discomfort.

The earlier you recognize these breaks from their normal routine, the faster you can start to make proper steps to fix the problem or at least take measures to aid in the repair process. All of these measures would fall into preventative medicine.

My favorite saying has always been: "Preventative medicine is much better and smarter than restorative medicine."

Dr. Steve Allday specializes in equine sports medicine with a focus on Thoroughbred racehorses. Dr. Allday's veterinary credentials include five Thoroughbred Horses of the Year, 13 Triple Crown race winners, and 29 Breeders' Cup race winners. He is the developer of the LubriSyn family of products—an all natural, oral joint supplement and Re-Borne whole bovine colostrum that is a safe, non-test boost for your horse's performance.



CHRISTY WEST

Nutritional supplements may help reduce the amount of post-surgical inflammation

osteophytes (indicators of arthritic changes), whereas only 35% of horses on the supplement exhibited these changes; and

- No difference between treatment and control groups in synovial fluid nitric oxide or glycosaminoglycan levels, radiographic findings, or lameness grade.

"These data support previously published experimental evidence of an inhibitory effect of 4CYTE on synovial fluid PGE₂," she concluded. "4CYTE is an excellent proactive supplement for supporting postoperative joint health in horses. The data from the



The Competitive Edge

EQUINE TREADMILL & SPA

 AquaTRAK™



Aquatic treadmill plus cold salt water spa!
Strength Speed Agility Endurance

www.EquineAquaTRAK.com
(941) 723-7517

Standing cold water therapy, rehabilitation walking in cold water, and rehabilitation & conditioning in variable depth water...all with one unit!

current study add to an already impressive portfolio of research demonstrating efficacy and safety of 4CYTE in horses.”

Pearson said that 4CYTE is available through veterinarians in the United States and Canada.

Evaluating Joint Infections Using SAA Levels

BY DR. STACEY OKE

Joint infections are a serious occurrence in horses with the potential to end an athletic career or even a life. Although survival rates are as high as 62% in foals and 85% in adults, only 48-66% of horses return to previous athletic activity after a joint infection.

“A successful outcome requires early and aggressive treatment, including the intra-articular injection of a suitable antibiotic such as amikacin,” said Andres Sanchez Teran of the University of Pretoria’s Department of Companion Animal Clinical Studies in South Africa (though he’s currently at the Western College of Veterinary Medicine, University of Sas-



Only 48-66% of horses return to their previous athletic ability after a joint infection

katchewan, Canada). Since there’s no reliable way to determine whether treatment is working, Sanchez Teran and his colleagues in Pretoria set out to find one, and he presented the results during the AAEP convention.

This inability to monitor joint infections negatively impacts a horse’s chance for survival or function. Scientists know that cells lining the inside of the joint produce a protein called serum amyloid A (SAA), and SAA levels increase in cases of infection. More importantly, SAA levels in synovial (joint) fluid do not increase following routine joint injections the way total protein and total nucleated cell counts (NCCs) do.

“This means SAA could be a better marker of joint infection (than total protein and other cell counts that are currently used),” explained Sanchez Teran.

To test this hypothesis, Sanchez Teran and colleagues collected synovial fluid by inserting a needle into the middle knee joints of five horses every two days for a total of five times. In the control group the team simply collected a fluid sample, and in the treatment group they injected the antibiotic amikacin after collecting the fluid. They measured SAA, total protein, and NCC in all samples.

The team’s key findings were:

- As expected, total protein and NCC increased significantly after the first joint injection;
- In some cases, the protein and NCC levels were so elevated they reached the point that would be expected in infected joints; and
- Synovial fluid SAA levels did not increase in either group of horses.

“Because SAA levels in synovial fluid are not affected by the process of inserting a needle or administering amikacin into a joint, SAA could potentially be used to monitor response to treatment following administration of amikacin into the joint,” concluded Sanchez Teran.

He added, “For example, this means that if SAA levels are elevated in infected joints, the SAA levels would be expected to drop as the infection resolves.” **BH**

QUILLIN
Leather & Tack

Figure 8 Halters (calif halter)	\$17.95
Newborn Halters	\$19.95
Foal Halters	\$19.95
Foal Tags 1-1/2 inch - 1 engraved line	\$6.95
Mare Neck Straps	\$8.95

Call, Click or Come By
Kentucky's Largest Custom Shop
Since 1982 ... We Ship World Wide
Ask About Our SPECIAL Blood-Horse Prices!

1929 South Main Street • Paris, Kentucky • 40361
(800) 729-0592 • www.Quillin.Com • [facebook.com/QuillinLeather](https://www.facebook.com/QuillinLeather)

the **HORSE** YOUR GUIDE TO EQUINE HEALTH CARE Excerpted from The Horse: Your Guide to Equine Health Care. Free weekly newsletters at www.TheHorse.com