

BVEH Newsletter

Volume 2, Issue 2

Summer, 2008



In this Issue:

Reproductive Issues	1, 2, 3
Managing the Senior Equine	1, 4
Chronic Arthritis	5, 11
Colic	6
Riding the Older Horse	6
Cushing's Disease	7, 12
Feed/Nutrition	7, 8
Dental Care	10, 11

Reproductive Issues in the Senior Equine

The older mare can be successfully bred. In general, fertility stays high until the mare is approximately 12 years old and declines until her mid to late twenties, when her chances to reproduce decrease and her ability to carry the fetus full term without problems becomes more of an issue.

While the older maiden mare can be bred, with success, it is important to

consider these mares high risk and it is important to manage them accordingly.

Reproductive Effects

From an economical standpoint, older mares may be more expensive to breed than their younger counterparts. This is in part due to uterine cultures, infusions, lavages, Caslick's procedures, supplemental progesterone and the fact that on aver-

age, it requires twice as many breeding cycles for older mares to become pregnant. Also, the first ovulation of the year may come almost two weeks later in the breeding season with older mares. Therefore, mare managers should implement a lighting schedule and plan accordingly.

(Reproduction

Continued on page 2)

Management of the Senior Equine

Like humans, classifying a horse as "senior" varies. A six year old racing Thoroughbred is old, but as a broodmare she will be young; a 15 year old broodmare may be old for a breeding, but in her prime for the show ring.

Generally, owners report aging changes when the animal is in its early twenties. A horse is considered very old once it reaches 30. The National Animal Health Monitoring System (NAHMS) reports that approxi-

mately 7.5% of the horse population is 20+ years of age. Of this aged population, 75% are considered "old" and 25% are considered "very old". The oldest horse on record was Old Billy, who lived in England to the ripe age of 62 (1760-1822).

In the past decade, veterinarians have been asked to provide more sophisticated medical care for an aging population of the horses and many of these horses are still competing

or engaging in athletic events well into their twenties.

There are three types of aging: chronologic, physiologic and demographic. Chronologic refers to the actual number of years since birth, while physiologic corresponds to functional capability. Demographic age correlates with survivorship relative to the population.

(Management

continued on page 4)



2 *(Reproduction Continued from page 1)*

Problem mares also are an economical problem to the stallion owner. Multiple breedings are often required of older mares, resulting in wasted semen and shipping costs.

An important consideration, but may be overlooked, is a mare's health. Older horses tend to have more endocrine problems and may not produce appropriate levels of hormones at the appropriate times. Controlling and regulating these hormonal problems will help mares to cycle and maintain a pregnancy.

Conformational issues include wind sucking, uterine pooling, and cysts. Multiple births lessen muscle tone in the rear end, which can lead to urine pooling, due to the vagina tilting forward and the sphincter being unable to form a tight seal. With wind sucking, the labia become weak and cannot function properly (air is drawn into the tract).

Multiple pregnancies can have a detrimental effect on the reproductive system, including scar tissue, blocked oviducts (prevents egg getting into the uterus) and conformational defects.

Years of carrying foals can result in scar tissue build up, which can hinder lymphatic drainage, resulting in a fluid-filled cyst. Normally, a few cysts will not hamper the ability for semen to enter the uterus or maintain pregnancy, but when cysts are seen in numbers

(upwards of 10-12), issues may arise. If the cysts are discovered when a mare is pregnant, the best time to remove them is shortly after she gives birth, when the cervix is soft.

Defective conformation of the vulva can arise due to injury to perineal tissue, stretching of the vulva through multiple foalings, and poor body condition (often seen in older, thin mares). These defects can lead to contamination of the reproductive tract, embryonic death, placentitis, abortion in late pregnancy, urine pooling and endometriosis. Dr. Caslick, a French veterinarian, pioneered the link to defective vulvular conformation and infection. A Caslick procedure involves closing the labia via staples or sutures. The objective of a Caslick's procedure is to reduce contamination and has been very successful.

Prolonged gestation is seen on a more frequent basis in older mares. This could possibly be the result of Intra Uterine Growth Retardation (IUGR, or slow growth). IUGR is seen when the supply of oxygen and/or nutrients are decreased during critical growth periods of rapid cell division. While poorly understood, it is thought to result from maternal undernutrition or disease, or reduced placental function.

IUGR depends on which organ or tissue system is in the rapid growth phase when it occurs. It has been found in lungs, kidneys and even the diaphragm.

IUGR can also result in placentitis (placental infection), which is the most commonly diagnosed cause of abortion.

Researchers are still in the early stages of fully understanding IUGR.

There can be a number of causes of reproductive difficulties in the aged mare.

Aged mares are more likely to suffer complications from parturition (delivery) including severe ruptures of major uterine arteries.

See the adjoining box for some common causes. Surgical correcting can include cervical reconstruction, urethral extension, or a Caslick's procedure. Prior to breeding season, a uterine culture and cytology should be performed to determine if any infection exists in the reproductive tract.

Older mares are more susceptible to post breeding endometriosis (even if they are a maiden). When semen is introduced into the reproductive tract, an immediate inflammatory response (physiological reaction against foreign material) occurs. While most of this fluid clears itself in 1-2 days, often the cervix won't relax properly, and therefore will not drain this fluid. Oxytocin has been used with success to contract the uterine muscles and push this fluid out.

Breeding 1-2 days prior to ovulation will allow for more time to drain fluid via an open estrus cervix. There is also natural resistance of the tract to inflammation during estrus.

(Reproduction Continued on page 3)



(Reproduction Continued from page 2)

Treating endometriosis is ideally performed before ovulation. Your veterinarian should ultrasound the mare the day after breeding to check for any fluid remaining in the uterus and treat accordingly (via saline/antibiotic lavage and/or oxytocin).

Stallion Issues

Older stallions can be successful bred, some well into their late twenties. The stallion manager should evaluate the stallion along with breeding practices as a whole (number and quality of mares, facilities) when determining reproductive issues. As stallions age, keep an eye on decreased libido, lowered sperm count, unacceptable pregnancy rates and arthritis concerns.

It is important to evaluate the stallion and his breeding environment when determining if fertility rates have decreased. Look at his book of mares – is it filled with maidens, older mares, or mares that have consistently been hard to get in foal? Keep in mind as the stallion ages, he may become more particular in the shed and about his

breeding habits. A complete physical, dental and nutritional exam should be conducted if there are any doubts as to his soundness and ability to perform in the shed.

Low sperm count and abnormal morphology can be seen with testicular degeneration. Depending on his condition, you may want to try mating him twice a day. This will increase the amount of sperm available to the egg but can deplete reserves (therefore, you may wish to limit his book).

The musculoskeletal system should be assessed. Arthritis, muscle, ligament and tendon problems can have an effect on the stallion's willingness and ability to mount a mare. Your veterinarian may recommend any number of therapies to aid in any musculoskeletal issues including glucosamine, chondroitin, hyaluronic acid and others.

Evaluate the stallion's feeding program. Due to the tremendous demands of the breeding season, the body reserves are often used up, leading to further effects on the stallion. Talk to your vet and evaluate if additional vitamins and minerals should be incorporated into the diet.

Tips to Increase Conception in the Older Mare

- Hygiene – pre-breeding gynecological exam, hygiene at the time of mating and also at foaling
- Correct timing of breeding, ultrasound to predict ovulation, and also use of HcG or deslorelin
- Pre- and Post-mating uterine fluid – treat with oxytocin, saline lavage
- Correct conformational defects – through use of Caslick procedure, cervical reconstruction, urethral extension

Common Causes of Reproductive Difficulties in the Aged Mare

- *Reproductive anatomical defects*
- *Infection*
- *Increased antibiotic use*
- *Ill health*
- *Poor nutrition*
- *Reproductive tract contamination*
- *Aged eggs*
- *Cysts*
- *Lack of fitness*



(Management Continued from page 1)

Signs of aging including the appearance of a “sway back”, due to loss of top-line muscle mass, hollowing in the grooves above the eyes, graying, long or curly haircoat, dropping feed or the visible appearance of undigested food in the manure due to loss of the grinding surface, and also dental issues including loose or lost teeth, and a wave mouth.

There are numerous challenges which come with managing the older horse, including maintaining a healthy weight, physical and mental comfort, preserving soundness, and disease management.

Maintaining Weight

Weight management is the most visible indication of condition. Review nutrition requirements with your veterinarian, keeping in mind obesity is as much of a problem as being underweight. Grass hay is easy to chew and digest, and be careful of alfalfa and other legumes as processing the high levels of calcium can place extra strain on the kidneys. Protein needs may rise once the horse becomes less efficient at utilizing proteins on hand in his current feed.

Overall, the ability to process nutrients in the feed decreases as well. Several alternatives have been helpful to seniors including beet pulp, senior feed blends and mixing a warm water soup or mash (easier for those horses with dental issues to eat, plus they get a little extra water in their system).

Common sense dictates (but is often overlooked) the senior horse be

allowed to finish all of his feed without being rushed (which can cause choke) or being forced away from his tub by younger, stronger herdmates. An older horse should be penned up to allow him to finish his feed at his own pace.

Physical and Mental Comfort

Skin conditions may increase as the horse gets older. Age is thought to play a role in rainrot, mange and scratches, possible due to the decrease in immunity as a horse ages.

Owners of aged equines may find alternative exercises beneficial to their horse. Exercises such as swimming, hand walking, ponying, muscle flexion or other physical therapies may be easier for horses with musculoskeletal issues. Discuss any medication plans with your vet prior to using it.

Like their human counterparts, older horses may have a difficult time with thermoregulation. Blankets should be used accordingly. Work with your vet on developing a ration for colder months that will provide enough quality roughage to generate heat.

The older horse may prefer to be paired with a friendly pasture buddy rather than a pushy one.

Soundness Preservation

Don't overlook hoof care. Not only does hoof growth slow down with age (due to decreased heart rate and less bloodflow to the foot), hooves can become more brittle as the horse ages. Supplements containing biotin, zinc and methionine may help. Different shoeing methods may help maintain soundness.

Orthopedic damage is often a problem in senior equines. This is not likely to be cured but the horse can be kept sound and comfortable through many different techniques. See “Chronic Arthritis in The Older Equine” elsewhere in this newsletter for further information.

Age Related Diseases

The following age-specific diseases can present in younger animals but increase in older ones:

- Cushing's Disease (see accompanying article for further information)
- Laminitis (often present due to Cushing's)
- Cardiac insufficiency
- Lipomas
- Recurrent Airway Obstruction (heaves – see Winter 2008 BVEH Newsletter)

Neoplasia (cancer including melanoma in grays and squamous cell carcinomas of the external male genitalia)

While musculoskeletal issues are not a specific cause of death, it is the second most common body system affected by old age, including fractures, laminitis, arthritis, and trauma.

For further information on arthritis, see the following article.



Chronic Arthritis in the Older Equine

Managing arthritis, also known as osteoarthritis and degenerative joint disease, in the older horse is a common requirement for owners. It may range in nature from keeping the show horse at a performing level to maintaining comfort for a broodmare.

A diagnosis of arthritis does not mean the end of a career is imminent. The faster the arthritis is discovered, the earlier a management plan can be implemented. With proper management, these horses may continue to thrive for years.

Older horses are especially prone to this ailment. Around age 15, a horse's body goes through a metabolic shift where an increase of cellular death within the bones, cartilage and fibrous tissue occurs. Elasticity is reduced in tendons and ligaments (and therefore, tears occur more easily) and cartilage thins (thus reducing the ability to absorb shock). The cartilage also changes shape, causing the bones to become less aligned.

While cartilage damage is the feature trait of arthritis, other factors may accompany it, including changes in the joint capsule, synovium (soft tissue lining the joints) and subchondral (below the cartilage) bone.

Identifying Arthritis

In the beginning stages, horse owners may see some puffiness around the joints, or a stiff gait the horse warms out of. Telltale signs may

also include hesitation to perform an exercise or maneuver that has usually come easy to him. The head may become raised in pain.

If an owner suspects arthritis, they should begin by inspecting their horse's joints on a daily basis. This includes feeling as well as looking. If there is fluid present, it may feel like a water balloon. Be on the lookout for any signs of pain from the horse (i.e. tail wringing, flinch, pulling the leg away).

Compare the left leg to the right leg and vice versa. If all four legs have swelling, it may be caused by another health condition. If the horse is lame or has any reaction to pain, schedule an appointment with your vet as soon as possible.

Combating Arthritis

Several measures can be taken to manage arthritis in the horse. For starters, make sure the horse is on a regular exercise and/or turnout program. Stall rest only further stresses joints that are already strained. Increased circulation, through exercise, can help move wastes out of the joints and strengthen muscles. It has been shown that a well-conditioned horse usually has much thicker and healthier cartilage than an unfit one.

Exercise also reduces fatigue. Fatigue can lead to poor movement, which in turn can lead to a misstep, further aggravating arthritis. There are also physical therapy/range-of-motion/flex exercises you

can do to your horse to encourage cartilage and tissue healing (and decrease scar tissue from forming). Stretching can break down adhesions, improve circulation, loosen up muscles and ligaments and improve range of motion (all which ultimately help prevent injury). Ask your vet to demonstrate.

Changes in the diet may be helpful. Several supplements are available, including those containing glucosamine or chondroitin sulfates. Talk with your vet about a diet that would benefit your horse the most.

Treatment of Arthritis

A number of therapies can be used to help manage the arthritic horse. For mild cases of swelling icing, hand walking (even for 15 or 20 minutes at a time), ponying or riding at a walk or trot can help alleviate some of the edema.

Special farrier techniques can be used, including wide web shoes (to evenly distribute weight), keeping the breakover shortened, rolling the toes or shoeing with rocker shoes.

Acupuncture, chiropractics, magnets, TENS unit therapy (a nerve stimulation), lithotripsy, therapeutic ultrasound, and even capsaicin (a component of hot peppers) have all been used with success. Severe cases may involve more invasive treatments like local injections or possibly require fusion of the joint.

(Arthritis Continued on page 11)



Colic in the Geriatric Horse

Older equines present an increased risk of certain types of colic. Studies have shown colic is the single most common disease requiring medical attention in seniors. This includes not only impactions but also fatty masses (lipomas) which strangulate the intestines.

Lipomas are fatty tumors which are built up over the years and eventually get big enough to twist themselves around the small intestine, small colon, and other areas of the GI tract and strangulate them. This

cuts off the blood supply to that section of intestine and the surrounding tissue dies. This strangulation also causes a back up of gas and ingesta, causing the bowel to stretch. The lack of blood flow and stretching are very painful to the animal.

Lipomas require resection of the affected intestine and then joining the two ends of healthy intestine together, a complicated procedure requiring intensive and expensive aftercare to keep the horse healthy and comfortable while waiting for the intestine to start normal function.

Metabolic changes due to age may play a role in lipoma formation. Geldings and ponies are especially prone to lipomas, due to the way their bodies lay down fat. Recent research has suggested that part of the same metabolic processes which cause horses to founder also cause the abnormal fat development:

namely insulin resistance.

The closer to 30 a horse gets, he may lack the muscular strength needed for a good recovery from anesthesia and lack the energy reserves needed for a rapid recovery. Despite this with advances in our ability to provide energy and care for intensive horses, older horses

still make good surgical candidates. If a senior horse is in good health and flesh, and has not suffered too much bowel compromise, then he has roughly the same chance of surviving surgery as a younger horse.



An example of an above average sized lipoma
Photo courtesy of University of Liverpool

In fact, older horses often make a better patient during their recovery as they are used to being handled and can be more level headed than a yearling or unbroken two year old. The caveat is, an older horse has a slightly higher risk of breaking a leg in recovery due to lower bone density.

There are many considerations to take into place if the horse is a candidate for surgery including costs, severity of complications, outcome of the surgery, recovery and rehabilitation time and any future use of the horse. Advances in anesthesia and surgery practices over the past ten years have allowed many horses to survive life threatening ailments that they may not have otherwise.

Riding the Older Horse

Senior equines should be managed as individuals. Following are a few tips to ensure your aged friend remains active for years to come.

School Less – by now your horse should know his job well. Work on keeping him fit and not riding him hard in schooling exercises day after day.

Fitness – ideally you want to keep your horse fit with consistent and frequent exercise. Resist any temptation to completely give your horse off in the winter – remember, the longer an older horse is let down, the harder it will be to bring him back.

Ride Easy – Riders should plan easier cross country hacks or trail rides and less work galloping or demanding work on hard ground.

Consistency – ride light every day or every other day. “Saving” your horse for a weekend show will make his body get stiff and out of shape during the week.

Be Selective – Older horses are more prone to the stress of the show circuit than younger horses. Plan a show/event schedule accordingly, making note of events taking place during the hottest hours during the summer months. Don’t choose too many shows a year, or too many classes per day, or long, stressful trailer trips.

Partner Up – work with your veterinarian and blacksmith to keep your horse in optimum health, and concentrate on alleviating minor problems before they turn into major problems.

Be Alert – your horse will tell you when its time to cut back. Listen to him and use common sense.



Equine Cushing's Disease

Cushing's Disease, or Pituitary Pars Intermedia Dysfunction (PPID) is the most common disease in aged horses, occurring when there are metabolism disturbances.

It is a chronic progressive disease of the intermediate pituitary gland of older horses. While Cushing's is reported in horses ranging in age from 7-42, the average age of onset is late teens to early twenties.

Other health issues often are presented with it including laminitis, chronic infection and pseudo lactation. Cushing's is diagnosed with clinical signs and endocrine tests. Treatment will last the lifetime of the horse.

The pituitary gland is located at the base of the brain in close physical and functional association with the hypothalamus. The hypothalamus responds to body needs by producing releasing hormones that act on specific cell lines in the pituitary gland. Hormones produced by the pituitary gland include: ACTH, TSH, FSH, LH, Prolactin, and MSH. As the PPID develops cells in the Adrenal glands have been overstimulated and enlarged resulting in an overproduction of cortisol.

This gland has three distinct lobes, each one producing different hormones. These hormones regulate appetite and satiety (feeling of fullness), balance, metabolism, behavior modification, and insulin release. The PPID hormone stimulates adrenal glands to manufacture excess cortisol.

Cushing's is often characterized by one or more of the following: an ab-

normally heavy hair coat that does not shed out normally (can be curly in appearance), muscle wasting, chronic unexplained laminitis, excessive urination, thirst, sweating, abnormal fat deposits, chronic infections, lethargy and neurological symptoms (including seizures). Those horses with a younger onset fare worse.

A hair coat change is the most commonly noted clinical sign associated with Cushing's. It usually develops years after PPID begins. A subtle coat change may come years earlier with patches of long hairs, a winter coat coming earlier than other horses and the horse shedding out later.

Cushing's requires diligent routine management, including medications, foot care, deworming, dentistry, vaccination, nutrition (to prevent obesity) and body clipping. Laminitis is a common issue for owners and veterinarians to deal with.

Causes

It is believed PPID begins with a reduction of dopamine in the brain leading to abnormal growth and deregulation of the pars intermedia pituitary

Testing

While no test is 100% accurate, multiple tests have been developed to point to a possible diagnosis. There are simple clinical tests which measure signs of hormone levels in blood. Single measurements of one hormone are difficult to interpret and stimulation or suppression tests are preferred for

diagnosis. The standard and widely accepted test is DST, dexamethsone suppression test. The test begins with the horse being injected with a low dose of dexamethsone with plasma cortisol (stress hormone) being measured at the time of injection and then 15 to 24 hours later. A cortisol test with levels greater than 1 ug/dl support PPID.

It is believed that seasons may affect pituitary function as the horse prepares for fall and winter. There is some evidence this a geographic phenomena, but research is continuing. At this time it is believed testing may not be as effective between August and November due to these seasonal changes which can alter test results.

Treatment

Cushing's horses have been successfully managed by body clipping, regular hoof care, nutrition changes (decrease sugar and carbohydrates) and good dental care. Medication is the only option currently to control this disease and should be evaluated on an individual basis. .

Current therapies include Pergolide mesylate, a once daily oral suspension. Caveats include lethargy and

(Cushing's Continued on page 12)



A prominent characteristic of PPID is hirsutism, a long, curly haircoat



Feeding Your Horse Like A Horse

The following is an excerpt from an article titled “Are You Feeding Your Horse Like a Horse” written by Judith A. Reynolds, Ph.D., P.A.S. Equine Nutritionist, ADM Alliance Nutrition, Inc. In the article Dr. Reynolds compares the differences between a traditional feeding program and a program based on your forage like ADM Alliance Nutrition’s FORAGE FIRST program. Last issue we covered the first part of the article, traditional programs and the problems associated with them; in this issue we will cover the forage based program and the typical positive results associated with such a program.

We will start with a quick review in the below box of some of the issues associated with traditional feeding programs.

Horse feeds can be classified, according to their DE content, into four categories — hays, fermentable fibers, grains, and

Traditional Feeding Program Issues:

When fed two large meals of grains daily, the “hungry” horse can consume a meal in less than an hour. Inclusion of molasses will cause faster intake. Less water is consumed with grains than hays. The stomach is relatively empty between meals; then, may become overloaded during meals.

1. More grain and less forage is fed. **POSSIBLE RESULT:** inverse calcium:phosphorus ratio, which can lead to bone disorders.
2. Salt blocks do not provide enough calcium, phosphorus, and magnesium (major minerals) or copper, zinc, selenium, iron, and manganese (trace minerals). **POSSIBLE RESULTS:** reduced digestibility of carbohydrates, protein, and fat; poor performance; **TYING-UP**.
3. Salt blocks are not adequately consumed. **POSSIBLE RESULTS:** dehydration, poor performance, impaction, **COLIC**.
4. Feeding low-quality forages places coarse fibers in the digestive tract. **POSSIBLE RESULTS:** impaction, constipation, **COLIC**.
5. Horses lack sufficient quantities of enzymes to digest large quantities of starch, which can create a starch overload in the foregut. Excessive **STARCH** enters the hindgut where it ferments quickly, producing lactic acid. The pH drops, creating acidosis. Large numbers of fiber-digesting bacteria die. Excessive endotoxins released from dead bacteria. **POSSIBLE RESULTS:** gas production and **COLIC**. Consequently, toxins enter the blood stream causing **SHOCK** and **LAMINITIS**.

vitamins for horses, GROSTRONG vitamin/mineral products are provided. In situations where additional energy is needed, fermentable fibers and high-fat feeds can be used, so that less cereal grains are required. When more energy is needed, NATURAL GLO® stabilized rice bran products, which provide energy in the form of highly digestible fat and fibers, should be used. ADM Alliance Nutrition’s Concentrated Energy Supplements and Specialized Energy Blends also provide essential fatty acids, B-complex vitamins, and many antioxidants including natural vitamin E. For convenience, Alliance Nutrition’s Fortified Feeds can be used to provide additional energy along with protein, vitamins, and minerals. How does one change horses from a traditional program to a FORAGE FIRST program? Ideally, forages should be analyzed for nutrient content. If a consistent source of forage is not attainable, book values for energy, protein, and other nutrients can be used. If forage is of questionable quality, find a better forage source. When selecting hay, avoid mature grass hays containing less than 8% protein. These forages tend to be very high in indigestible fiber and low in energy. Select immature hays that are mostly grass with some legume. Pure alfalfa hays are generally too high in protein and calcium for most rations, even though their high DE content would be of benefit. Refer to Table 5, choose from the

options in the forage box, then the mineral vitamin box. Next, choose a Concentrated Energy Supplement if an energy source is needed. For convenience or personal preference, Specialized Energy Blends or Fortified Feeds are an option which can be used to complete the ration. FORAGE FIRST programs provide nutrients required for optimum performance and reduce the risks of underfeeding, oversupplementing, and metabolic disorders associated with starch overload, such as colic, founder, ulcers and tying-up. .

You can find this full article and others at ADM Alliance Nutrition’s website www.admani.com or <http://www.admani.com/AllianceEquine/Technical%20Bulletins.htm>

ADM Alliance Nutrition and offers a toll-free HELPLINE. To obtain assistance, call 1-800-680-8254



For Health & Performance



FORAGE FIRST Program Feeding Guide

Mineral-Vitamin Products

Choose from the following:

- A. 1-3 oz GROSTRONG Minerals
- B. GROSTRONG Mineral Block in pasture
- C. GROSTRONG QuadBLOCK® in stall
- D. StaySTRONG Metabolic Mineral Pellets
- E. GROSTRONG Mintrate® (pelleted, contains 33% protein); 1-2 lb
- F. PRO-VITA-MIN 20 Tub; 1-2 lb

Concentrated Energy Supplements

Choose from the following:

- A. 1/2-11/2 lb NATURAL GLO
- B. 1/2-11/2 lb NATURAL GLO Nuggets
- C. 1-3 lb MOORGLO

FORAGE

Combine choices A, B, and/or C.

- A. Good-quality pasture
- B. 15-30 lb good-quality hay (8-15% protein)
- C. Hay Cubes

Choose from the following for convenience or personal preference (hay can be reduced to a min. of 2% of body weight):

Specialized Energy Blends (contain NATURAL GLO)

- A. POWERGLO; 4-8 lb
- B. SENIORGLO; 4-8 lb
- C. JUNIORGLO; 4-8 lb

Or

Fortified Feeds

- A. GROSTRONG *Ultra-Fiber* Horse Feed
- B. Patriot Performance Horse Feeds

FORAGE FIRST PROGRAM Benefits:

1. The increase in forage consumption, increases saliva production, which dilutes hydrochloric acid (continuously produced) in the stomach.

RESULTS: good appetite, minimal chance of ulcers and digestive distress.

FIBER (and very little starch) enter the hindgut. Normal pH of 6.5 is maintained.

2. Healthy, fiber-fermenting bacteria are present.

Up to 70% of energy comes from volatile fatty acids produced by bacteria digesting good-quality fiber.

RESULTS: controlled energy, increased exercise tolerance and performance, faster recovery from exercise.

Optimum production of vitamin K and B vitamins including biotin.

RESULTS: shiny hair coat, optimum hoof quality.

3. Most of the phosphorus, 75–85% of the structural carbohydrates (absorbed as volatile fatty acids), and 30% of the digested protein are absorbed from the hindgut.

RESULTS: fewer digestive problems, reduced feed costs.



Dental Care in the Senior Equine

Advances in dental techniques and diagnostics have greatly improved the quality of life for older horses. It is not uncommon to see horses today living well into their 30s and even reach the age of 40 thanks to these practices.

Unlike humans, a horse's teeth are hypsodont. They constantly wear down and erupt at the rate of approximately 2-3 mm per year. For the first 8 years of life the horse actively produces all components of the tooth. Beginning as an 8-10 year old, they begin developing a strong root system. This continues up until the age of 15, at which time the horse has all of the teeth it will develop. As the horse continues to age the remaining tooth is worn down into the remnant of the pulp cavity and eventually the roots. It is not uncommon for a horse to live long enough to completely erupt several teeth.

The rate of tooth wear is dependent on the type of diet fed to the animal. A horse on a high forage diet will wear their teeth at a more even, normal pace

cially prone to these tooth abnormalities as their diets are switched over to complete feeds, containing both forage and concentrates.

Trauma, infections, tooth death, poor conformation and years of behavior issues (i.e. cribbing or wood chewing) can lead to dental problems also.

In addition to mouth speculums and good floating instruments commonly used in routine dental work, x-rays are a valuable diagnostic tool for older horses with dental issues. They can help evaluate not only teeth but sinuses and overall jaw structure.

Most senior equines have some form of periodontal disease. Tooth gaps, fractures, decay, uneven wear, loose or lost teeth and cribbing are all concerns for the older horse. Abnormalities in the teeth

can affect the horse's ability to graze naturally, reducing caloric intake, leading to a decrease in body condition.

An abnormal wear pattern in the mouth can be classi-

fied as wave mouth, step mouth, or sheer mouth. Wave mouth is associated with uneven height with more than one tooth in an arcade (row of teeth) and is caused by abnormal wear of the first molar, fourth premolar, missing teeth, tooth defects or fracture of the teeth or jaw.

Step mouth is a defect where one tooth is higher than the adjacent teeth. This, like wave mouth, interferes with normal chewing ability.

Shear mouth is a defect where the points of the lower teeth make contact with the hard palate. Owners will see unusual eating habits, including tilting the head to the side and a refusal to eat hay. Once detected, this problem is easily corrected with frequent floating of the mandibular teeth.

Hooks and ramps are problematic in the older horse as well. Rasps, dremmels and molar cutters can all be used to correct these problems.

A horse is a candidate for tooth removal when one of the teeth is obviously loose, fractured (though not always necessary to remove), diseased, or loose and causing much discomfort. This is normally seen in the upper teeth and often interferes with the sinus cavity, resulting in a case of sinusitis. Depending on the severity of the tooth or infection, extraction can be done standing in the stocks or with the horse in an operating room under general anesthesia. Due to the frequency of tooth disease and the closer proximity to the roots, older horses do not tolerate floating as well as younger horses, and require more sedation and analgesia. Only a veterinarian has been properly trained in the multiple side effects of sedating or anesthetizing horses. Older horse often have minor cardiac issues that may be effected by sedation.

It is important to monitor the horse at feed time. As the horse begins to have problems with the teeth or their ability to grasp grass

(Dental Continued on page 11)



Specialized tools such as mouth speculums and mechanized floating instruments make equine dentistry precise, gentle, and quick (often taking as little as 6-10 minutes)

as compared to a horse that has a diet high in concentrates. This "up and down" motion required to chew grain (as opposed to a "side to side" action when grinding forage) leads to abnormalities in tooth wear and alignment. Horses living in areas of the country with more sand will also see more rapid wearing. Older horses are espe-



(Arthritis Continued from page 5)

Pharmaceutical treatments include NSAIDs (Bute, Banamine, Equioxx, Ketofen, etc...), oral or intravenous hyaluronic acids (HA), Tramadol, and topicals such as Surpass and skin patches containing fentanyl or lidocaine. As older horses may be more prone to certain NSAID toxicity, the lowest possible dose as well as longer time between dosings should be taken into consideration.

Intra-articular joint injections are commonly performed in an arthritic horse. These provide relief from pain and inflammation. A wide range of medications can be used depending on the individual horse's needs.

Chondroprotective agents have also been used with success and include products such as Polyglycan, Adequan, Legend, Glucosamine and Chondroitin. Chondroprotectives are designed to be longer acting than other drugs.

IRAP therapy is a good alternative to steroid treatments. The IRAP protein is already present in equine blood and naturally helps to fight arthritis. Veterinarians collect a sample, concentrate this protein and inject it back into the diseased joint. IRAP is a good treatment for the horse who has not responded to traditional intra-articular therapies. Stem Cells and Platelet Rich Plasma therapies, traditionally used to repair damaged tendons and ligaments, are currently undergoing experimental treatment as arthritis remedies. Tildren treatments have been used to help hock arthritis and navicular disease. It prevents the body from removing calcium from the bone. In the long run, Tildren reduces lameness and allows the horse to continue activity.

Performance of Arthritic Horses

In spite of arthritis, many horses continue to perform well. A combination of therapies listed above and providing adequate periods of rest seem to work well. If a horse is experienced, keeping the animal fit and relaxed may be all that is required of them.

For breeding animals, controlling pain is the main goal. Many of the drugs above have not been tested for use in pregnant animals and the side effects on the fetus may not be known. Phenylbutazone is known to cross the placenta and it is possible fetal kidney damage could occur. Horses have been born with elevated blood levels of Bute which was acquired in utero due to NSAID use. Prior to using any medication on a pregnant mare, be sure to discuss the usage with your vet.

Through careful management and a combination of treatments, managing arthritis in your older equine need not be an expensive or complicated issue. Your horse can remain comfortable and useful for many more years to come.

(Dental Continued from page 10)

and chew forage, changes must be made to the diet. There are many feeds on the market designed specifically for the geriatric horse. They usually are a completely balanced ration and are often pelleted, making it easier for the horse to chew and digest. Offering warm water to an older horse, especially one that is missing teeth, may encourage them to drink more, as cold water may cause discomfort at the gum.

Although a horse may enjoy having hay around, even if he is not able to chew efficiently, older horses that have had missing teeth or have limited ability to properly chew it are more prone to choke. If this is an issue in your older horse look for hay that was cut and baled at its peak, with minimal stem and more leaves. Soaking hay cubes are another alternative.

Dentistry plays an important part in animal care. It is important to have the senior horse's teeth checked twice yearly by a veterinarian and more often if problems are suspected. By catching dental issues in the early stages, your horse will be able to lead a more comfortable senior life.



(Cushing's Continued from page 7)

possible decreased appetite. With the availability of compounded products, treatment with pergolide can be as low as \$1 per day. However not all compounders know what they are doing, where their drugs come from, and how to properly prepare a suspension. Make certain you are getting a product that has proper quality control and analytical testing. Cyproheptadine is also available in the United States, however, it has limited efficacy and pharmacological data along with other compounding issues.

Careful management and the use of Pergolide can ensure the Cushing's horse can lead a happy life for years beyond the initial diagnosis. Ongoing research continues to further unlock the mysteries of this disease.

Contact Us: Brazos Valley Equine Hospital

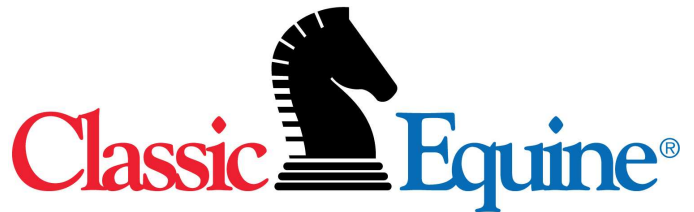
6999 Highway 6
Navasota, TX 77868
(936) 825-2197

20069 N US Hwy 281
Stephenville, TX 76401
(254) 968-7898

7099 N FM 487
Rockdale, TX 76556
(512) 446-0202

www.bveh.com

Older riding horses as well as all performing equine athletes may find comfort in specialized equipment. Classic Equine Products, known for their quality and durability, manufactures several product lines, including support boots and saddle pads, that owners of senior equines may find useful and helpful.



P L A Y T O W I N™

In addition to Classic Equine's ESP™ and Sensorflex™ saddle pad lines, a new pad is currently undergoing testing. The Bio-fit™ correction pad is being designed as a solution to soreness issues caused by problems related to saddle fit. A January release is anticipated.

Please visit their website at www.equibrand.com