INTRODUCTION

This pamphlet has been compiled by a horse owner for other horse owners as a source of information on equine recurrent uveitis. The impetus for this project came from owners across the country seeking...
information on this disease and pooling their knowledge to help each other. It is absolutely essential that a veterinarian be consulted immediately for any problem concerning your horse's eye(s) and that the course of treatment be prescribed by or designed in conjunction with a veterinarian. Inappropriate treatment or lack of proper treatment can lead to blindness. The material included here will serve to provide information about the wide range of causes, methods of treatment and means of handling equine recurrent uveitis. The disease is unique to each animal, so this information can only give you questions to ask, and things for which to look. The specific treatment plan will have to be designed for your horse's particular case by a veterinarian.

The author wishes to thank the many people who have contributed to this work: the owners who filled out the original survey sheets and took the time to write out all their suggestions; Nancy Vanderlan for the initial case study on her horse Chance, for the many articles she provided, some of which are used as resources here, her constant help and encouragement and all her publicity work; Meg Sleeper, VMD, a constant source of information, for her treatment of Honey, her patience with my questions and for editing this from a veterinarian's point of view; and to Carol Dilley and Ginny Hartman, horse owners who were asked to imagine that their horses had just been diagnosed with ERU and to evaluate this information from that standpoint.

OVERVIEW

Equine recurrent uveitis, sometimes known as moon blindness, is a disease of the horse's eye that can be caused by many different things -- bacteria, virus, parasites, or trauma.

Signs that an eye is in distress include redness, swelling, pus, pupil constriction in the dark, cloudiness, squinting, and photophobia. Uveitis is often diagnosed as something far less serious and valuable treatment time is lost. If not treated aggressively from the onset, there is less chance of saving sight in one or both eyes. Unfortunately, even with very aggressive treatment, some eyes cannot be saved, but in other cases the disease can be halted or at least slowed down.

When the uveitis first starts, if the original cause can be determined then additional treatment may be used depending on the cause. The usual short term treatment includes atropine to dilate the eye, followed by either a steroid or antibiotic. Treatment must be prescribed by a veterinarian because if a steroid is used when the eye is ulcerated, blindness can result. Bute, banamine or aspirin are used as anti-inflammatory agents along with the other medications.

After the original episode has been successfully treated, the inflammation and signs will disappear and the eye may appear to be normal or almost normal. At sometime in the future, if it is recurrent uveitis, a set of circumstances will cause the eye to have another episode. The circumstances can be internal; external such as wind, dust, pollen; stress of any kind; or due to stopping the anti-inflammatory medicine prematurely. With recurrent uveitis, the episodes continue to occur. Each one lasts a little longer and each time the eye loses a little more sight.

Long term maintenance treatment will often include aspirin, bute or banamine on a regular basis in an attempt to keep the inflammation from starting. Many horses wear fly masks to cut down on thy light and owners are also using dietary supplements to help build up the horse.
Dealing with a partially or totally blind horse takes some extra care and thought by the owner. The section on Dealing with your Horse on a Daily Basis goes into detail and includes suggestions from owners who have dealt with this disease.

HISTORY

Also known as Moon Blindness or Periodic Ophthalmia, Equine Recurrent Uveitis is the most common cause of blindness in horses. Unlike many diseases, it does not have one single cause and for this reason has baffled researchers. Once started it may cause blindness if its progression can not be halted. Fortunately, while the causes cannot be foreseen or eradicated, its progression can in many cases be slowed or stopped by fast, aggressive and consistent care.

Historically, moon blindness was felt to be tied to the cycle of the moon. There was also a theory that it occurred most often in white horses, horses with white around their eyes or appaloosas. In the Nelson Survey (1994), of 68 horses with uveitis, 22 were chestnut, 14 bay and only 2 were white. In the same survey there were 17 Quarter Horses, followed by 15 Appaloosas, and 9 Arabians (Nelson, 1995), so the disease strikes all colors and breeds.

A study of 372 cases recently reported in JAVMA was held in the Genesee River Valley of Western New York State. It dealt with the association of leptospirosis and breed with uveitis and blindness in horses. According to their findings, "The Appaloosa breed was over-represented in the population with uveitis, supporting recent reports of a predilection for uveitis in that breed over other breeds. Rate of vision loss also was higher in Appaloosas than that observed for other breeds, suggesting that Appaloosas have a poor prognosis for vision if uveitis develops." (Dwyer et al, 1995). The statistics from the Nelson survey were similar: 12 of the 15 Appaloosas (80%) had blindness in one (5) or two (7) eyes, as opposed to 44% of the Arabians and 35% of the Quarter Horses. In addition, none of the Arabians and only 1 Quarter Horse was blind in two eyes, but 7 of the Appaloosas were blind in two eyes.

Uveitis is an immune-mediated disease. "Impairment of the normal blood-aqueous barrier in the iris and ciliary body vasculature owing to inflammation is the underlying cause of the clinical signs." (Kern, 1987). In very simplified terms, "the blood is fighting the disease and the interior eye, while the eye is fighting the disease and trying to protect itself from being digested by the body's own blood." (Scott, 1993). In the resulting battle, the eye becomes inflamed and can also become ulcerated.

SIGNS

Signs that an episode is beginning can be varied. Uveitis unfortunately is often misdiagnosed as something less severe or in some cases it is totally ignored. It is important that uveitis be diagnosed correctly because lack of or incorrect treatment can have serious consequences.
Equine recurrent uveitis is very painful to the horse. The most common signs are puffy, watering eyes, squinting, and red blood vessels at the sides of the eye and in the lids. Horses will often be photophobic (very sensitive to the sun and often to any light). In some eyes you can notice a white cloudiness or a blue or green tint. Another major sign to look for is a pupil that is constricted when the horse is in the barn or a darkened stall. A constricted pupil indicates that it is in spasm, and is very painful. Immediate treatment is needed to alleviate the spasm.

Other signs may include head shaking, a runny nose, white spots or bleeding in the eye, matter or pus collecting, loss of balance, tripping, running into things or rubbing the eye. In some cases if you look across the surface of the eye you may even see ulcers. They look like little declivities, but usually you will need to stain the eye to see them and the untrained eye can still miss them.

Additional signs that owners in the Nelson Survey mentioned were: stops grazing, decreased appetite, swollen eyes, spookiness, blinking, avoidance of sunshine, and grumpiness.

If signs persist even with treatment, you or your veterinarian may want to consult a veterinary ophthalmologist since this disease can lead to blindness in one or both eyes if not treated aggressively.

---

**CAUSES**

The causes can be generally classified as bacterial, viral, parasitic, and traumatic (Schwink, 1992). An additional possible cause is allergies. In the Nelson survey of 68 horses with ERU, 3 thought allergies were the primary cause and an additional 5 listed allergies as a possible cause, but there are no scientific studies to verify this.

It is important to establish a specific diagnosis whenever possible which may require tests such as: blood count; serum biochemical profile; urinalysis; leptospirosis, toxoplasmosis and brucellosis titers; and fecal exam for parasites. "Aqueous humor antibody titer determination may be done simultaneously and is quite useful but aqueous paracentesis requires general anesthesia and poses a significant risk of aggravating uveal inflammation with the procedure itself." (Schwink, op cit p. 564)

. The most commonly implicated bacterial infection is leptospirosis. Leptospirosis can cause abortions, still births, decreased milk production, recurrent uveitis and death. The organism enters through the mucous membranes of the host animal, and contamination comes from contacting the urine of the infected animal through water, mud, bedding or food. Cattle and swine can shed leptospires in their urine for over a year and horses may shed for four months (Pinney, 1989; McDonough, 1992). A vaccine for horses has not been approved to date, in part because the volume of the disease in horses is not seen as economically important by pharmaceutical companies.

Leptospira are divided into six major serogroups and these are then further divided into over 500 serovarities. Of these there are seven main ones that are found in horses. These are L. autumnalis, L. bratislava, L. canicola, L. grippotyphosa, L. hardjo, L. icterohemmorhagica and L. pomona. Vaccines have been developed and approved for cattle and swine. The five way vaccines cover all of these serovarities except L. autumnalis and L. bratislava, both of which are found in horses.

Leptospiral bacteria like warm, moist conditions and are found in many animals: cattle, swine, deer, rats,
raccoons, fox, skunks and other wildlife. Horses get it from drinking water that has been infected or they may pick it up from grass, hay or grain contaminated by the urine of infected animals. Horses can catch it from other horses, although the majority have most likely contracted it from infected cattle, rats or wildlife. The frustrating thing about leptospirosis and uveitis in horses is that the uveitis may not occur for 18-24 or more months after the leptospirosis infection. In addition, while some horses are very ill with the disease, others may show no obvious signs of infection. Testing for leptospirosis at the time uveitis occurs may confirm that the disease was active at one time but it is too late to do anything about the leptospirosis for that horse. However, understanding how leptospirosis exists and is spread can help you prevent the infection of other horses.

Leptospiria can survive in water for up to 20 days and in manure up to 61 days. It is therefore very important to keep animals from drinking stagnant water, to have good management of manure, and to practice good sanitation. Human hands can spread infection from one animal to another or even to humans. Some precautions you can take include fencing water sources that wildlife can access, draining wet muddy areas where horses are pastured, thoroughly disinfecting stalls and areas where animals who have active leptospirosis have been, and washing hands and clothes when in contact with the disease (Pinney, op cit p. 55). Vaccination of herds or individual animals in areas where leptospirosis is prevalent is also usually recommended although there is still much discussion pro and con for vaccinating horses and there is no approved vaccine for horses at this time.

Signs of leptospirosis include fever, anorexia, conjunctivitis, abnormal milk and or decreased milk production (Pinney, op cit p. 54). Streptomycin and penicillin are used to treat leptospirosis.

Other bacterial infections included Streptococcus equi (streptococcal hypersensitivity hence a connection with strangles, Escherichia coli, Rhodococcus equi and brucellosis.

The major **viral** infections linked to equine uveitis are respiratory equine herpesvirus and influenza virus. There are other possibilities but it has been difficult to link them directly.

The most common **parasite** connected with uveitis is onchocerca. Culicoides, a biting midge of the Ceatiopogonidae family, is believed to be the primary transmitter. The adult lives in the connective tissue of the horse's neck and the microfilariae travel throughout the body. The most common signs of it are sores breaking out on the midline of the horse's stomach, base of the mane and withers and uveitis in the horse's eye(s) (French, 1988). Uveitis occurs when there are large quantities of dead microfilariae in the eye. Normally the eye can handle the live ones but the dead give off large amounts of antigens and these cause inflammation in the eye (Schwink, op cit p. 560). Ironically for horse owners, onchocerca can sometimes first be identified by the onset of symptoms following worming with ivermectin. This is one drug that will effectively kill off the young microfilariae, but at the same time by doing its job it can initiate uveitis if a large quantity of the microfilariae are in the eye at the time of worming. After uveitis has started, some owners find that administering bute or banamine several days before and after worming can control the inflammation so that the uveitis does not flare up every time the horse is wormed. This also might indicate that in dealing with abandoned or abused horses who may not have been wormed on a regular basis, consulting a veterinarian regarding the possibility of onchocerca microfilariae in the eye before worming may prevent uveitis in addition to its other problems. A conjunctival biopsy can be used to identify onchocerca microfilariae in the eye, but it does involve using auriculopalpebral nerve block and topical anesthesia. Once the inflammation has quieted, treatment can commence. Diethylcarbamazine and ivermectin are two drugs that are used (Cook, 1983).

Toxoplasma gondii is another parasite known to cause uveitis. "The cat is the definitive host but horses can become infected. Direct cellular damage by mechanical penetration and immune reaction to parasite antigens may lead to uveitis." (Schwink, op cit p. 560) Exposure comes from feed contaminated by
infected cat feces. Another possible cause of uveitis is an "immunological reaction to migrating forms of intestinal nematodes, particularly the strongyles." (Ibid).

**Trauma** to the eye is another cause of uveitis and cataracts. The trauma can be either blunt or intrusive. It may cause a corneal ulcer or fungus may be introduced into the eye if the penetration is by plant foreign material. The ulcer and fungus can be treated. Unfortunately, cataract surgery while an option, is not usually performed on horses because of the cost and possible postoperative problems. Any operation on the eye can instigate additional flare-ups of the uveitis. The horse's eye is so large that it takes much longer to heal than the human eye and it may not heal correctly. Hopefully with all the advancements in human cataract surgery, it will eventually be more of an option for horses. Since horses use monocular vision, even a small cataract can affect the horse's ability to perform.

**Allergies** were another suspected cause as indicated in the Nelson Survey. Because May and October were the highest months of the onset of the disease in these horses, this indicates that allergies should be considered as a possibility. Pollen and ragweed type allergies as well as spring and fall shots or combinations of shots should be examined as a preventative measure.

---

**TREATMENT**

**Short term treatment** usually consists of using atropine to dilate the eye and reduce discomfort due to spasm of the iris. A steroid may also be indicated if the eye is not ulcerated or an antibiotic if the eye is ulcerated. Using steroids in an ulcerated eye can make the condition worse and possibly lead to blindness. Medications can be in ointment or drop form or in some cases a subpalpebral lavage catheter system is used for around the clock medicating. There are many different products used, but you need to be aggressive with the prescribed medication, often 4 times a day, and in some cases around the clock and then cut down the number of treatments per day per the veterinarian's instructions. In addition to the ointments and drops in the eye, bute, aspirin or banamine are used to decrease the inflammation. In some cases, veterinarians will use the atropine for a few days and then stop it so that the pupil can start to constrict again. The idea is to keep the pupil moving so that synechiae, little pieces of protein that form strands in the eye, cannot cause the pupil to fuse in one position. Extended use of 1% atropine or use of 4% atropine can lead to colic due to its effect on gut motility. Flunixin meglumine is sometimes used in acute cases and can quickly bring relief thereby facilitating an examination of the eye. If a fungus has gotten into the eye, additional treatment is needed as well as the above.

In addition to the standard treatments, owners are experimenting with alternative methods such as acupuncture, MSM, vitamins, yucca, apis mullica, bee pollen, clovite, chiropractic, herbs, hot and cold compresses and riboflavin. One owner in the Nelson survey used a hormone implant as it was suspected that the uveitis was tied to the mare's heat cycle and that seemed to help.

Large doses of antibiotics have sometimes helped to stop the progression of the disease. In some cases the antibiotics were given because of the uveitis and in other incidences, it was given for another purpose and the byproduct was an end to or substantial lessening of the episodes of uveitis. Sometimes horses can have an adverse reaction to drugs so it is important to know the side effects and to plan a course of action with your veterinarian.

Another treatment which is sometimes used if the original cause of the uveitis is thought to be

http://www.igs.net/~vkirkwoodhp/eru.htm
leptospirosis is to vaccinate with a leptospirosis vaccine. There is a great deal of discussion pro and con on vaccinating for leptospirosis since there has not been a vaccine tested and approved for use on horses. Since uveitis is an immune related disease, some feel that giving the vaccine will cause further episodes of the uveitis. There is growing interest in testing and possibly approving an equine vaccine for use on horses already infected, but there may be a problem testing it for use on uninfected horses since it is felt that it could cause the first episode of uveitis.

There are areas of the United States where leptospirosis is so prevalent that horses are routinely vaccinated for leptospirosis with seemingly little difficulty. From 1957-1962, horses on two farms near Ithaca, N.Y. were vaccinated. No cases of uveitis occurred during those six years among vaccinated horses. One owner who did not agree to vaccination and his horse came down with uveitis 18 months after arrival at the farm (Roberts, 1969). In cases where the vaccine is used after the horse has uveitis, it is also sometimes combined with doses of tetracycline or streptomycin. Here again some believe it to be effective, but there are no definitive studies and one drawback is that tetracycline can cause colic.

In cases where nothing can be done to stop the constant bouts of pain for the horse, and the eye has degenerated, owners have opted to have the eye enucleated or removed. This stops the horse's pain and in many cases, since the sight was probably almost if not totally gone, the horse adjusts well to having one eye. Sometimes the eye lid is just sewn shut but other times a synthetic eye can be inserted. The cosmetic effect is very good. In the Nelson Survey, 4 horses with ERU in only one eye had the diseased eye removed and at the time of the survey, Nov. 1994, the uveitis had not reappeared in the second eye. As of February, 1996, the second eyes had stayed clear and another horse was added to the study. Each horse was a different breed. Hopefully we will be able to keep in touch with these and add others to the study. It is possible that the uveitis would not have spread even with the bad eye intact, but it may provide the incentive for additional research.

Since bright light irritates the eye, most horses wear fly masks outside and some wear them 24 hours a day to keep stall dust, etc. out while the horse is inside. When using a fly mask daily, check to be sure that the guard hairs around the horse's eye are not being curled around back into the eye further irritating it. You may need to trim them. If the horse will tolerate it, a hood with a black plastic bubble over the eye or a fly mask with a blackout eye patch, such as the Guardian Mask, allows the horse to be outside in the daylight while the eye is still dilated. Otherwise, he needs to stay inside when the sun is out. This obviously only works if it is the first eye that is involved. If possible, turnout at night in the summer, and leave the horse inside during the day. During the winter, if there is a bright glare from the snow, a fly mask helps to shield the eye from the brightness. It also cuts down the amount of wind directly hitting the eye.

**Long term management** involves getting a handle on what triggers individual episodes. Unfortunately that can be different at different times but some of the big offenders are: wind, dust, getting chilled, stress of competition, a new pasture mate, losing a pasture mate, ammonia build up in the barn, injury, food, seasons changing, strong sun, severe cold, worming, bugs and flies, shots or going off the anti-inflammatory medicine. The best way to figure out the causes in your horse is to keep a daily log. In the log, note the wind and weather conditions, whether the horse was in or out, medications given, amount of exercise, temperament, and anything out of the ordinary. A booklet that has a month at a glance is great. Develop some abbreviations so it all fits. You will quickly be able to discern patterns and then possibly forestall future episodes. If it is windy or forecast to be windy, a hood with a clear bubble keeps the wind off the eye; wet and rainy, leave him in, etc.

The goal is to keep the inflammation from starting. Long term treatment will often consist of a daily or every other day dose of aspirin. The dose range is "120-240 grains daily to a 500 kg horse" (Schwink, op cit p. 569) and it depends on the horse how much it needs for maintenance. Aspirin comes in tablets, boluses or powder. It is considered to be the easiest NASID (nonsteroidal anti-inflammatory drug) on

http://www.igs.net/~vkirkwoodhp/eru.htm

10/20/2008
the stomach, but can still lead to ulcers in some horses after a time. Some horses may respond better to phenylbutazone (bute) or banamine. It involves experimenting and keeping detailed notes on the horse's progress. If you are using your horse to compete, the medications will have to be discontinued several days prior to the competition.

An additional concern is to keep the horse from rubbing the infected eye so he will do no further damage. Your veterinarian may prescribe an antihistamine or other medication to help stop the itching.

The other way to treat uveitis is to treat the symptoms when they appear. The problem with this is that every time your horse has an episode, it most likely looses some sight and the episodes can get more frequent and more difficult to treat.

In summary, with equine recurrent uveitis, you have to evaluate and then handle each case individually. No two cases are exactly the same. It is very time consuming and can be expensive if it continually reoccurs, but by being aggressive and diligent you have a chance of saving your horse's vision and can save money in the long run if the disease is successfully halted or at least slowed down.

One thing that can not be stressed enough is that if you feel that something is not right, the medications aren't helping, an episode is lasting too long, etc., trust your instincts and get a second opinion or consult a veterinary ophthalmologist. In the Nelson Survey, of the horses in which the uveitis started in one eye and then spread, it spread to the second in 3-5 months in 41% of the horses. That means you do not have months to experiment or to wait and see what will happen next.

DEALING WITH YOUR HORSE ON A DAILY BASIS

Depending on the extent of the blindness, the horse may have blind spots, or a blind side. If he is blind or almost blind in one eye he will lose his depth perception. He may trip on rises or dips in the path. At the onset of the disease if you haven't already gotten him adjusted to it, start doing everything from both sides; leading, grooming, saddling, and mounting if you can.

Get in the habit of talking to him constantly so he knows where you are. Keep a hand on him while working around him so he can hear and feel where you are. When leading a horse that is blind in one eye, stay on the good side. Your first reaction might be that you will replace the horse's bad eye. The first time he jumps left because of something scary he sees with his good right eye, you will realize the importance of staying on the good side. Most horses will not willingly jump into you, but if they can't see where you are, in their fright you may get stepped on.

Owners who are riding semi or totally blind horses, stress that getting and continually working to keep the trust and confidence of the horse is paramount. Going blind can be very stressful for the horse, especially if it happens quickly. Horses that go blind over a period of years tend to get used to it gradually and may be less bothered. How the horse reacts will depend on his makeup and you must be tuned into his reactions. Dressage lessons have helped a number of riders with cueing and also can help you to straighten the horse if he has become crooked to compensate while loosing sight. Changes in how he deals with you or other horses, his food or the work you are asking of him, can indicate that stress is building and needs to be dealt with before it gets worse. A horse can be fine with blindness for months and then for some reason it becomes poorly tolerated. Watch for signs and get professional help from a
trainer to work through the problem before it gets out of control.

Some horses are happy in a field with one other or a small group of horses who get along. The other horses often protect and guide the blind horse. In other cases, a horse who is low in the social order, may be terrified of being in a field with others and may need a paddock or field of his own. If you are putting your horse in a new field, walk him around the perimeter of the field so that he has an idea of his boundaries. Letting his whiskers grow will help him sense when he is near a fence or other obstacle.

Several of the mares in the Nelson survey had given birth to healthy foals with no sign of uveitis. In one case the mare was blind and the owners put a bell on the foal so that the mare could keep track of him. They got along fine. In cases in the Nelson Survey where the mare and her off spring both had uveitis, it was beyond the scope of the survey to determine whether they were both exposed to the same "insult", were susceptible to uveitis genetically or other factors were involved.

Watch for signs that the horse may not be tolerant of strangers or perhaps children and take steps to protect them from too close contact with the horse.

At the first sign of uveitis, start teaching voice commands to your horse if he doesn't know them already: up, down, step (for over logs on the trail), stand and whoa are a few that come in very handy. The added benefit is that if you are trail riding, your horse will become much safer. In a tough situation your horse will be accustomed to listening to you when it's essential. If the horse is blind on one side you must always be ready with the leg on that side. You can never relax and daydream down the trail or even in the ring. You must be aware of what the horse will see on his good side since something scary will cause him to move away regardless of what's on the bad side. On trail rides experiment to discover the number of horses your horse is comfortable with and the position among them he prefers. Some are only comfortable leading and others following. Also when riding, especially on trails, rather than asking the horse to set his head, give a cue and then relax the reins so that he can look around.

Lunging the blind or partially blind horse is fine if he is used to being lunged consistently. If you take a horse who has been cooped up in a darken stall for weeks and put him on a lunge line for some exercise, his reaction may be to let off steam and go tearing around. If you have started him with the bad eye on the inside toward you, you have placed yourself in a potentially dangerous situation. He is feeling good and cantering around but he can not see you. In addition, especially if he is newly blind, he may be off balance on a small circle which could bring his path in toward you.

Some suggestions on lunging would be to start with the good eye toward you, keep the sessions short and only do walk and trot until you are sure he is listening. When he is calm and listening with his good eye in, then switch sides, still keeping to the walk, trot routine. It is imperative that you teach voice commands at the very beginning and not rely on a lunge whip for signalling since you will have a blind side toward you part of the time.

In some respects, the horse is like a recovering human invalid. He will come to a point where he does not want to be babied. Consistency in how you handle him and what you expect is very important. As much as possible, treat the horse as you normally would, if you are going to work or ride, expect him to do what he is supposed to do. If you expect less than he can do, or let him get away with things you will have a very spoiled and dangerous animal on your hands. The horse must still respect your space, listen to you and do what you ask. You in turn need to learn how to ask and how to anticipate what to tell him so that all goes well. There will be times when you let him run into things or trip over things because you didn't think ahead but you will learn, and horses are very forgiving.
ADDITIONAL INFORMATION IS AVAILABLE

As a result of the interest of horse owners across the country to get and share information on equine recurrent uveitis, data was gathered from the owners for ten years. The results of the initial survey in addition to articles of note and other resources, newsletters and a mini sketch of some of the survey responders and their horses sorted by state are available. To help cover the cost of gathering, printing and mailing this information, there is a charge of $25. If you live in Canada, please use a U.S. money order. Checks should be mailed to: Mary Nelson - ERU Network, 18 Lake Drive, Mendham, NJ 07945-1310. 973-543-4788.

REFERENCES


McDonough, Patrick, Dr.: Leptospirosis in Horses - On the Increase?. Veterinary Update, March, 1992:4-5.


http://www.igs.net/~vkirkwoodhp/eru.htm


ADDITIONAL ON-LINE REFERENCES

- Anterior Uveitis, Recurrent Uveitis, Periodic Ophthalmia, and Moonblindness by Robert N. Oglesby DVM
- Cause of Common Eye Problem Identified
- Factsheet: Leptospirosis and Equine Recurrent Uveitis in Horses Ontario Ministry of Agriculture, Food and Rural Affairs
- Periodic Ophthalmia or Recurrent Equine Anterior Uveitis by J. Matthew J. Tong, BVSc, CertEP, CertVR, MRCVS

OTHER RELATED INFORMATION

- Blind Horses A guide to loving and caring for blind horses.
- The story of Minnie the Moocher by Susan Germain.
- The Holistic Horse Holistic & Alternative Therapies
- Guardian Mask

Return to the V. Kirkwood Home Page
The design of this page is dedicated to the memories of Cali and Clover.

No more fear, no more pain;
Run free, my beauties, run free.

VK