DSLD/ESPA Symptoms, Diagnosis and Management

Above photo shows DSLD/ESPA affected horses' legs in the upright from. Earlier photo on right taken in the spring, is not showing enlarged suspensory, another photo taken in the fall, on left shows the suspensory ligament has enlarged.

DSLD/ESPA is a disease that affects the connective tissue (tendons & ligaments) and symptoms usually appear outwardly in the suspensory ligaments or tendons of lower legs, especially the fetlock area. Other subtle signs maybe in present before the legs are affected outwardly.

The latest research has found an accumulation of proteoglycans in the affected connective tissue. A more accurate name is Equine Systemic Proteoglycan Accumulation- ESPA

More research needs to be done to totally understand the disease biochemically. The latest findings have shown a malfunction in Transfer Growth factor and Decorin. DSLD/ESPA is believed to be genetic and could be recessive or dominant, the latest research is indicating it could be a dominant gene. More research needs to be done to find the genetic link so a DNA test can be made available. Because of the genetic risk, we advise NOT
breeding dsld horses at this time so they cannot pass on the disease to offspring. This is the only way to stop spreading the disease at this time.

![Photo shows the dropped pastern form of DSLD](image)

**SYMPTOMS**

* Sudden onset of heat & pain and swelling in suspensory branches and/or whole fetlock area. Body of Suspensory and/or tendons may also be painful to palpation. Horse may refuse to walk at this stage. Some horses show no lameness at onset, some become severely lame. Often laying down and moaning showing a false colic is present during onset. This is a painful time for the horse.
  * Unexplained lameness
  * Stumbling and tripping

* Leg cramp, frequent stretching of leg, frequent stomping (not caused by flies landing), lifting leg high and holding, biting at suspensory branches

* Maybe one, two or all legs, may seem to move around from leg to leg in early stages. After onset will be bilateral.

![Image of horse leg with swelling](image)

* Heat & swelling in fetlock area, maybe localized on inside or outside of fetlock or could be whole whole fetlock area.

* Soreness in Suspensory ligament on palpation especially in the suspensory branches.
Enlarged Suspensory ligament and in the suspensory branches.

May also be lumpy along suspensory.
Palpation of suspensory may feel so tight and hard like an over stretched guitar string about to snap. Or may feel enlarged and mushy/soft.
- Laying down alot and trouble getting up, dog sitting before standing.
- Reluctance to move once up but seem to work out of it with time
- Back pain/soreness or soreness/stiffness in hips.

Digging holes to stand in with toes pointing toward hole.

- Sitting on fences, buckets, rocks
- Horse may become irritable, change in attitude

Pasterns maybe horizontal during weight bearing, or maybe upright with no sign of dropped fetlocks.
* Sweet potato fetlocks- fluid filled, odd shaped overly large fetlocks.
  * Dropped pasterns
  * Windpufts in the fetlock area. May show no lameness at this stage.
  * Swelling of the udder or sheath has been seen as an early sign before any lameness shows in many of the diagnosed horses, why is unclear at this point. It is also a sign of insulin resistance (IR) so horses with this sign should be checked for IR also.
* Others signs that are occasionally seen is a broken crest and a horse shows sudden onset of severe allergies to fly spray, bug bites, total body hives for unknown reason, very sensitive to touch, white hairs grow in areas that were touch sensitive. In some cases this happens before suspensory ligament symptoms.
  * False colics are sometimes seen, laying down and moaning but not rolling, looking at flanks, but normal gut sounds.

* Walking wide in rear legs is often seen when rear legs are affected first. Stiff robot like movement.

* Shifting weight from foot to foot with toe stabbed into ground.

* Sudden loss of weight and horse appears to look older than it's age.

* Some horses with DSLD/ESPA show very loose skin along with premature aging.
  * Refusal to walk downhill.

* Change in horses' normal gait, short striding, an unusual hopping gait. Refusal to canter.
*Landing toe first when moving

*Stabbing toe into ground while moving.

*Fetlock knuckling over.

*Extreme rope walking, braiding

*Refusal or difficult to pick up feet for farrier, pulling away, falling over when farrier picks up feet.

*Falling over or falling into stall walls, leaning on walls or fences for support. (Many times these horses are mis-diagnosed as EPM or WNV or neurological with this symptom.)

*Change in conformation to coon footed post legged stance.

**DIAGNOSIS**

**FLEX TEST & ULTRASOUND**

Flex test of fetlock joints, ultrasound of suspensories. Dsld horses will fail the flex test in two or more legs. Palpation of suspensories will find them to be very hard & taunt, maybe lumpy from calcification or could be
mushy. Pain response is also noted. Enlarged suspensories and the branches will be evident in cases that have progressed.

Print the Diagnostic Protocol & Exam Form by Dr. Mero and give to your vet to read before examination. Found on DSLD/ESPA home page.

IRON BLOOD TESTING-

*Having blood drawn on your horse and testing for iron & ferritin will show where you dslsd horse tests for overload on iron. Many dslsd horses are showing high iron levels and some low in magnesium. Send blood sample to University of Kansas as they are testing for ferritin levels and Dr Kellon is doing a study on ferritin levels in dslsd and non dslsd horses. Information and forms found on Vet pages linked on home page.

TISSUE DIAGNOSIS

There is now tissue diagnosis available at necropsy. Tissues to be sent to Dr Halper of U of GA. Information and details on the Vet Pages linked at bottom of Home page. ***NEW~ We are also doing some trial nuchal ligament biopsies on live horses with Dr Halper doing the tissue analysis. So far several cases have been tested on a live horse. Even if symptoms are not showing outwardly, or very subtle signs, and horse is out of known DSLD/ESPA parents or has affected siblings, it may show affects internally in the nuchal ligament. For more information please join the DSLD-equine list, link on home page.

MANAGEMENT

***Dr Kellon's DSLD/ESPA STUDY***~ Treatment study on DSLD/ESPA horses using an amino acid along with a Chinese herb. Contact dsldinfo@gmail.com and ask for Dr Kellon's D/E Study form. Horses have been on treatment now for over 3 years and so far results have been promising in reducing pain, and better mobility.

Some repeat ultrasounds have shown actual healing. It has helped most horses improve.

Please join our DSLD-equine group at Yahoogroups (link on left of DSLD home page). Dr Kellon needs to document each case to know how well all DSLD & symptomatic horses respond to treatment. No other pain reliever to be used with study. **"UPDATE"**- We are seeing some amazing results with this study. Horses that could not walk, in severe pain, near euthanasia, are now running and bucking. More upright pasterns, less depressed, happier horses. We now encourage owners of DSLD horses to use this new treatment. Please join the DSLD-equine list to be part of the study and/or contact email address above.

Managing Pain & Swelling

*See treatment info above.

Cold hosing and using a clay poultice like "Ice Tight" or those listed has shown to help relieve some of the heat and swelling and discomfort.

For topical relief Miracle Clay by Dynamite products has shown to give some relief. [http://dynamite.mystateusa.com/Miracle_Clay_%28Eqine%29.htm](http://dynamite.mystateusa.com/Miracle_Clay_%28Eqine%29.htm)

Also Cool- Cast has been used by some owners and has shown some relief. [www.hawthorne-products.com/horsecare.html](http://www.hawthorne-products.com/horsecare.html)
A capsaicin topical may relieve some pain. Here is a link to one of many products- Donalex Corporation 
http://donalex.com/ss.html

HOOF CARE:

A balanced natural hoof trim with coffin bone level has shown to be the best for the majority of dskd horses. A squared toe for easier break over has also shown to help.

Additional info from Terry Barrall, Martha O. graduate, hoof care clinician/barefoot trimmer -

"With advanced D/E there is a critical lack of blood flow to the affected areas. Quoting Dr. Mero's histological exam there is "a marked paucity of" vessels. So you want a trim that facilitates 'hoof mechanism' and that's why bare hooves are important. They should be trimmed to allow the expansion on weightbearing and contraction on flight that moves blood into the hoof capsule and back up the leg.

This incorporates a few very basic things:
-- ground parallel coffin bone as witnessed by a 30 degree hairline
-- removal of extra, dead sole material.
-- trim hoof/walls to or nearly to sole level
-- BALANCE well side-to-side, and hoof-to-hoof
  -- trim excess bar to sole level
  -- short natural toe and heel
-- a D/E horse is helped with a good roll-over too."

Links to barefoot hoof care specialists provided by Paul Dennis:

Gene Ovnicek http://www.hopeforsoundness.com/
Pete Ramey http://www.hoofrehab.com/
KC LaPierre http://www.equinepodiatry.net/
Martha Olivo http://www.marthaolivo.com/
Marjorie Smith http://www.barefoothorse.com/
Jaime Jackson http://www.primechoice.com/jaime-jackson

The worst scenario is a long toe and underslung heels. Egg bars shoes have been used and results have been varied as well as use of wedges. The wedges actually have been shown to put more strain on the suspensorys and are not advised. A few people have used the Patton Shoe developed by Dr Young with good results. This has not been found to help the Peruvian Paso's affected but has helped some of the other breeds affected.

DIET:

Recommended diet changes are a low sugar diet. To find low sugar hays, go to www.safergrass.org Example of low sugar hays are alfalfa and bermuda grass. A mix of both is a good choice. Remove all grains & molasses from the diet. Soaked non-molasses beet pulp has been very good to use. Horses can have up to 1/3 or half their diet in beet pulp along with hay. If you must give grain a handful of oats is best. If you feed only alfalfa, rolled oats or other products can balance the calcium/phosphorus ratio. It is best to have your hay analysed to know correct nutrients and minerals.

Ground Flax seed can also be fed. You can buy whole flax seed and grind it yourself with a coffee grinder or buy
it already ground at- http://www.omegafields.com product is called HorseShine *Testing your hay would be a good idea to know what it's content is and if it shows low & high levels of minerals. That way you know what to supplement for.

SUPPLMENTS:

Most dsl d horses have shown a low magnesium level, so a supplement of magnesium may be needed if your hay is lacking. Quiessence www.foxdenequine.com it is also available at www.smartpakequine.com Cinnamon has been shown to lower blood sugars so 3 teas of cinnamon daily has been helpful. Start out with a small amount and build up slowly.

Probiotics like Fast Track are also recommended.
Limit iron intake when using suplements, check your mineral salt also, you can use plain white iodized salt instead of mineral.

EXERCISE:

The best thing for a dsl d horse is turnout 24/7 so they can freely exercise at will. Stall rest usually does not help as it would in an injury, so turnout is the best choice. *Note- while on new treatment, a smaller turnout and leg wrapping is advised along with cold hosing the legs and icing.

DSL D horses should not be ridden unless diagnostics show it is in the very early mild stages and they have stablized. If the DSLD horse has dropped pasterns or flexes to much in the pastern and has shown lesions on ultrasound or tissue samples shows advanced stages, the horse should not be ridden. A diagnosed DSLD/ESA horse should also not be bred, they could pass the disease onto their offspring and the added weight and stress of pregnancy causes much added strain to the horse that could cause more damage. DSLD/ESA horses have damage internally that is often not visible outwardly. For example if only the rear legs appear to be affected outwardly, in reality all legs are affected internally on the cellular level. (This has been shown during necropsy results).

HELPFUL HINTS:

Sport boots have also been used, as long as they are only kept on for 12 hrs max per day, it may be helpful during the acute phase. Do use them on severely dropped pasterns as they put undue pressure on the fetlocks and can cause more harm than good.
Equine massage and acupuncture has also been used to make the dsl d horse more comfortable. Cold hosing legs and using a clay poultice seems to help the most for managing swelling and reduced heat.

PROGNOSIS:

We recommend trying the new treatment for your DSLD/ESA horse under Dr Kellon’s study. It may have a longer term effect on your horses comfort and health. This is still under study. Your horse may go into a stablized state after the acute onset. The swelling and heat may disappear and your horse moves easier with less pain. This may be temporary and they can have another flare up at any time.

There is no cure for dsl d at this time but with pain management and diet changes you may be able to keep your
horse more comfortable and perhaps slow the process. There is no solid proof of this yet, but it has been beneficial to many horses and we feel if you want to try the information provided on the webpage, it may help.

When the dsls horse progresses, the pain will be constant and they will start to show some other signs of progression in becoming coon footed, post legged, bucked at knees and severe weight loss. Sometimes they lay down and cannot get up, euthanasia is recommended at these stages when they are in constant pain also.

**"UPDATE"**- Before euthanasia is decided, we now suggest using the new treatment being studied by the DSLD-equine at yahoogroups.com list under Dr Kellon's supervision. We are seeing some impressive results, even for horses that have progressed to euthanasia stage. Please join the group for more details and to be part of the study.

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Please join the support group for owners of dsls horses and share your information on your dsls horse/s at- http://yahoogroups.com/group/DSLD-equine/

*Information provided by owners of past & present dsls horses. We hope the information is helpful for everyone as we try and manage the disease. We also highly recommend having a soundness exam on all horses used for breeding and if buying a horse have a soundness exam along with a health exam.

DSLD/ESPA Home Page