

## **Growth related problems**

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January 2010.

The cost of growth related problems, known as Developmental Orthopaedic Disease (DOD) or more recently as Developmental Skeletal Problems (DSP) to the bloodstock industry is unknown but is thought to be significant. At the very least, bloodstock showing any signs of DSP will not make their potential sale value and DSP may also have serious effects on the athletic potential of the young racehorse both short and long term.

So what is DSP? It is a general term used to encompass all general growth disturbances to the horses' skeletal system, which includes osteochondritis dissecans (OCD), dyschondroplasia (DP), physitis (otherwise known as epiphysitis or physeal dysplasia, angular limb deformities (flexural deformities contracted tendons), subchondral bone cysts and wobbler syndrome.

What are the causes of DSP? There are several causes in bloodstock including conformation, genetic disposition, lack of, or too much exercise, biomechanical trauma and nutrition. It is most commonly seen in the overtopped, fast growing foal/yearling. These causes may be found in combination, such as poor diet and hard ground. New research suggests a genetic defect in collagen metabolism may be a factor in addition to, rapid growth rates.

Nutrition factors include excessive energy intake and/or badly balanced rations such as low mineral intake. Copper for example is vital for normal bone cartilage development and maturation. Copper in pasture and forage can be too low and it is vital to test forage so dietary intervention can prevent problems with copper deficiency. If pasture is very low in copper and breeding stock are not supplemented or fed properly, this will reduce copper intake leading to DSP. Pregnant mares with reduced copper intakes are more likely to produce foals with DSP. To reduce the risks feeding a stud balancer such as Gain Opti-Gro will maintain intake of copper throughout pregnancy whilst the foal is growing.

Nutrition is one of the areas that has undergone intensive scrutiny, as this is a factor which can be controlled. Recent research has studied starch levels, finding that high cereal starch rations may lead to the production of peaks of blood sugar which causes insulin production and further changes in growth hormone and insulin-like growth factor 1. Ultimately this may have a negative effect on cartilage development. High protein rations, contrary to popular belief have not yet been shown to predispose youngstock to DSP. It seems that excessive energy (in the form of cereal starch, not fat and fibre), with or without an imbalance of minerals may cause problems.

### **Avoiding DSP**

Firstly, avoid youngstock becoming overweight. This is an indicator of oversupply of energy and will put excessive weight on the developing growth plates. Feeding higher calorie stud diets may be appropriate in winter, but in summer, the feed is often cut right back, often to nothing at all. If a normal stud ration has been formulated to feed at the rate of 3kgs per day, and the feeder reduces this to 1kg per day for the overtopped youngstock, then the horse will only receive one third of the required minerals, vitamins and quality protein! The pasture simply cannot be relied upon to provide all the minerals to support quality growth, as mentioned above. If higher calorie stud diets are required for smaller or slow growing individuals then they should be fed little and often and have oil added to reduce large surges in insulin response.

Gain Opti-Gro is a low energy, low starch feed for breeding stock. It has been formulated to be fed with good quality forage, pasture and/or hay or haylage. Opti-Gro's small pellets will supply the vital minerals in highly available form, plus quality amino acids and vitamins, without an oversupply of energy. Opti-Gro is therefore ideal to be fed to youngstock at grass in the summer, maintaining the necessary intake of minerals by feeding a given amount daily. In winter Opti-Gro will also help to maintain mineral intake, quality amino acids and vitamins to support growth in youngstock fed high quality conserved forage. Opti-Gro should also be fed to pregnant mares, particularly those that are overweight. This maintains vital mineral intake whilst the foetus is developing and growing through pregnancy.

Should DSP become evident, energy intake should be reduced but minerals, quality protein and vitamins must be maintained! Starvation of the young horse may lead to further problems and is not to be recommended. Where clinical signs of DSP are evident, exercise should be

restricted to walking in hand until heat and lameness disappear. Make changes to the diet as appropriate and if in doubt contact Gains nutritionist.