



## OCD in Show Jumping Horses

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### *Osteochondrosis in Show Jumping Horses*

Osteochondritis dissecans (OCD) is one of the most important clinical entities encountered in show jumping horses with respect to developmental orthopedic disease. The veterinary literature suggests that the prevalence of osteochondrosis is approximately 25-30% in Warmblood breeds<sup>1</sup>. Many of you have likely heard of the term “bone chips” which is a common term for osteochondral (bone and cartilage) fragments within a joint. These are often encountered in young horses that have joint swelling, mild to moderate lameness, and are just starting in work. Many of you have also encountered this term during pre-purchase examinations in both sound and unsound horses. The diagnosis of OCD does not necessarily mean the deal is off, it does not necessarily mean your horse requires surgery, and it does not mean your horse cannot perform up to its full potential. OCD can occur in any joint, and treatment and prognosis depends on the joint involved, the soundness of the horse, and the intended purpose of the horse.

#### *What is OCD?*

Osteochondrosis is a failure of the bone underlying the articular cartilage to form properly from the skeleton's cartilage template<sup>2</sup>. In scientific terms, this is known as a failure of endochondral ossification. This failure of the subchondral bone (bone underlying the cartilage) results in a “weak spot” in the joint. Normal biomechanical forces applied to the joint during exercise then result in fissure of the articular cartilage and formation of osteochondral fragments in the joint. The inflammatory mediators that are released into the joint during this process often result in joint swelling, pain and varying degrees of lameness. Some horses with OCD however do not show any clinical signs.

#### *What Causes OCD?*

OCD is a complex disease and is multifactorial in origin<sup>2</sup>. Biomechanical influences, failure of adequate blood supply to the articular cartilage, nutrition and genetics are all thought to play a role in OCD<sup>2</sup>. Considering that OCD causes areas of weakness within a joint, normal biomechanical forces from exercise create OCD in well known predilection sites within a joint. Changes in arterial blood supply to the articular cartilage at specific “windows in time” may also be a mechanism for the development of OCD. Mineral deficiencies (low copper), mineral imbalance, and high energy diets may also play a role in the development of OCD. OCD is seen in horses that have a large variation in genetic background suggesting that the method of inheritance is complex<sup>1</sup>. There is a large variation in heritability depending on the joint involved. For example, in Dutch Warmblood horses, the heritability of hock OCD is much higher than for stifle OCD.<sup>1</sup> As well, it has been shown that affected stallions can produce offspring free from OCD, and foals with OCD can be born to clean sires<sup>1</sup>.



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### *Which Joints are involved?*

OCD can affect virtually any joint in the horse's skeleton. The most common joints affected in Warmbloods are the hocks, stifles, and fetlocks. Other joints we see occasionally include the coffin joint, pastern joint, carpus, shoulder joint, and joints in the neck.

### *What are the Clinical Signs?*

The clinical signs can vary from none to an acute onset of joint swelling, and varying degrees of lameness. For example, horses that have hock OCD (Figure 1) will often develop joint swelling at a young age with minimal lameness, whereas horses with shoulder OCD will not have recognizable swelling but will have moderate to severe lameness as a weanling or yearling. Horses with stifle OCD (Figure 2) often have joint swelling and mild to moderate lameness.

### *How is OCD Diagnosed?*

OCD is diagnosed following a thorough lameness and radiographic examination that identifies the suspected joint(s). Occasionally arthroscopic examination of a joint is necessary to confirm the diagnosis.

### *How is OCD treated?*

Arthroscopic surgery to remove osteochondral fragments is the most often recommended treatment option for horses that have OCD. At our practice, OCD is the most common reason for performing arthroscopy. Removal of osteochondral fragments significantly improves joint health. Often, radiographs underestimate the degree of joint injury. Arthroscopy allows you to not only remove "chips" from the joint but to debride the "parent bone" down to healthy tissue and to debride loose or frayed cartilage. Arthroscopy is recommended for horses that demonstrate clinical signs and are to be used as competition horses.

Surgery is not always required however. For example, a horse that has hock OCD but no joint swelling or lameness, and is used primarily for pleasure or low level jumping does not need surgery. Additionally, horses that have stifle OCD that have a small lesion with no fragmentation can heal with conservative management<sup>3</sup>. There are also horses in our practice that compete at a very high level with OCD that are sound and going without surgical intervention. It is important to consult with your veterinarian to determine if surgery is necessary once the diagnosis of OCD is made.

### *What is The Prognosis?*



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The prognosis following arthroscopic surgery depends on the joint involved, the severity of lesion, and the intended purpose of the horse. For example, in jumping horses, a two year old Warmblood with hock OCD has an excellent prognosis for athletic soundness following surgery; a two year old Warmblood with stifle OCD has a good prognosis for athletic soundness following surgery, and a yearling Warmblood with shoulder OCD has a poor to guarded prognosis for athletic soundness following surgery. Jumping horses with fetlock OCD can have a guarded to excellent prognosis following surgery depending on the location within the joint and the presence or absence of concurrent osteoarthritis. Careful clinical and radiographic examination by your veterinarian is important to determine the best treatment option for your horse.

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