



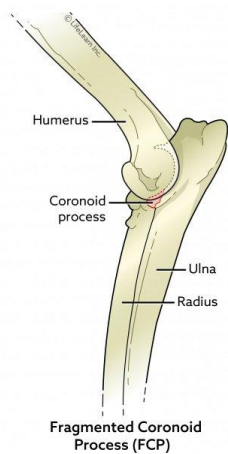
## Elbow Dysplasia

### What is Elbow Dysplasia?

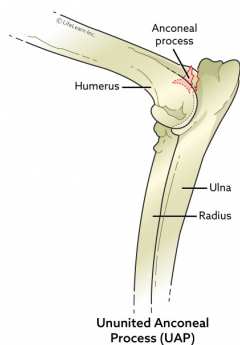
Elbow dysplasia refers to abnormal development of the elbow joint. The elbow is a complex joint bordered by three separate bones - The humerus, the radius and the ulna. All three bones must develop and grow at normally and at a consistent rate in order to fit together perfectly to form a healthy elbow joint. If the growth of any of these bones is abnormal or if the cartilage of the elbow joint does not form normally, dysplasia will occur and result in joint dysfunction. Various factors may contribute to the development of elbow dysplasia, including genetics predisposition, improper nutrition during growth, and trauma. Elbow dysplasia is the most common cause of forelimb lameness in young dogs and occurs most frequently in large and giant breed dogs. Typically, elbow dysplasia will occur bilaterally, however, one limb is often more severely affected.

There are a variety of changes that can occur within a dysplastic elbow joint, resulting in lameness. Some of the more common changes seen are as follows:

**Fragmented Medial Coronoid Process:** The proximal end of the ulna involved in elbow formation exhibits two bony protrusions called "coronoid processes". When the elbow does not form normally, one of these protrusions may develop cracks and separate from the rest of the bone, resulting in a condition called a "fragmented medial coronoid process". Dogs with FCP generally present with a mild to moderate lameness at around 4 and 7 months of age. These dogs will experience pain with elbow flexion and extension, pain on palpation of the medial aspect of their elbow and will often have joint effusion. As the dog ages, crepitus, decreased range of motion and general thickening of the joint may be present. Degenerative changes consistent with osteoarthritis are often seen on radiographs, however, the FCP lesion may not be seen. Definitive diagnosis of this condition often requires computed tomography (CT) Scan or arthroscopy.



**Osteochondritis Dissecans:** Osteochondritis dissecans is an inflammatory condition that occurs when abnormal/diseased cartilage within a joint separates from the underlying bone. Dogs with elbow OCD often present with mild to moderate lameness between 4 and 9 months of age. Most present with bilateral lesions but one side tends to be more severe than the other. If the dog has been lame for several weeks, muscle atrophy may be apparent along the affected limbs. Pain may be exhibited with extreme flexion or extension of the elbow. Chronic OCD will result in signs of osteoarthritis in the elbow joint (joint effusion, thickening of soft tissues, decreased range of motion and crepitus). Radiographs may show a defect in the subchondral bone, however, CT scan or arthroscopy are most reliable for definitive diagnosis.



**Ununited Anconeal Process:** This condition refers to the failure of the distal aspect of the ulna, aka anconeal process, to fuse with the rest of the ulna to allow comfortable articulation with the olecranon by around 5 months of age. The instability of the anconeal process causes inflammation, pain and, eventually, osteoarthritis. Dogs will often present with a weight-bearing lameness, decreased range of motion and joint effusion. A flexed lateral radiograph of the elbow will make the UAP very apparent.

## Treatment of Elbow Dysplasia

If identified early in the disease process, many conditions resulting in elbows dysplasia and associated discomfort may benefit from surgical intervention. Although open joint surgery may be necessary in some cases, many patients can be successfully treated with arthroscopic procedures. Early surgical management of elbow dysplasia provides the best chance of minimizing arthritic changes within the elbow that will result in discomfort and mobility issues later, however, most dysplastic elbows will develop some degree of arthritis. Although patients with arthritic changes in the joints may still benefit from arthroscopy, the response is much less predictable.

## Conservative or Post-operative management of Elbow Dysplasia

**Confinement:** Strict confinement to a crate or pen with gradual return to exercise over several months is recommended

**Adequan injections:** Can help with joint inflammation and lubrication

**Glucosamine:** Joint supplements contain cartilage building blocks to help the body repair cartilage damage

**Weight management:** Overweight dogs have an increased risk for arthritis. Weight loss can reduce discomfort associated with weight bearing and the risk of compensatory injuries.

### **Professional Rehab/Physical Therapy**

Early physical rehabilitation therapy should be considered as part of the conservative or pre/postoperative management of elbow dysplasia for optimal return to function. Prolonged immobilization can lead to loss of muscle and bone mass, as well as greater arthritic changes in the affected joint.

A customized rehabilitation program for conservatively managed patients or those following surgical intervention for elbow dysplasia has been proven to significantly improve muscle mass when compared to standard home care.

Post-operative rehabilitation programs also improve joint range of motion, reduce muscle spasms and associated discomfort, and improve weight bearing, resulting in significantly improved overall joint function. Many dogs undergoing post-operative rehabilitation will recover with near normal function, however, those with moderate to severe osteoarthritis at the time of diagnosis may require long-term management.

The goals of rehabilitation are to control inflammation, maintain joint range of motion, decreased pain and strengthen muscle. In addition, weight management can be incorporated into a rehabilitation program if indicated. A customized rehabilitation program may include:

#### *Manual therapy*

Stretching and massage increase blood flow to muscles and decrease joint stiffness. When pets are not ambulating normally, their muscles become tight and joint range of motion can become compromised. Controlled and appropriate stretching promotes increased flexibility and comfort during physical activity and decreases the risk of future injury. Massage alleviates discomfort through releasing endorphins and by increasing blood and lymphatic flow to affected areas. These techniques will result in decreased pain and inflammation post-operatively.



#### *Aquatic Therapy*

Aquatic therapy may include swimming and/or the underwater treadmill. The buoyancy provided by the water helps to limit the concussive impact on joints, allowing these pets to move more comfortably than on land. The increased resistance created by moving through water promotes increased muscle strength and cardiovascular endurance. The implementation of aquatic therapy in a

senior management program can help to maintain an ideal body weight, improve joint range of motion, and increase muscle strength and tone. This will result in joint stabilization and increased overall comfort.

### *Physical modalities*

A variety of physical modalities, such as cold laser therapy, may be utilized to reduce the severity of clinical signs and reliance on medications to control pain and discomfort. Laser therapy is the painless use of light energy to generate a photochemical response in damaged or dysfunctional tissue. This will, in turn, decrease pain and inflammation while accelerating healing. This modality is non-invasive, fast, comfortable and effective.

### *Cryotherapy/Heat therapy*

Cold therapy can be used post-operatively to decrease inflammation. It can also be used after exercise to sooth sore joints and tissues. Heat therapy can be used prior to stretching and exercise to warm up the muscles and prevent injury.

Elbow dysplasia is a common cause of lameness and can significantly impact mobility and long term quality of life. Early idebifitcation and a customized physical rehabilitation program will ensure an optimal outcome and rapid return to function, allowing our furry friends to get back to doing what they love. For further information about how rehabilitation can help your pet, please contact Blue Springs Animal Rehabilitation Center.

[www.bluespringsanimalrehabcenter.com](http://www.bluespringsanimalrehabcenter.com)