

# Elbow Dysplasia

## ABOUT THE DIAGNOSIS

In dogs and cats, the elbow is the joint in the front leg (forelimb) that is closest to the breastbone, or sternum. The point of the elbow points toward the dog's hind end, as opposed to the shoulder (above) and the paw (below) that point forward.

Elbow dysplasia is a general term which indicates a malformed elbow joint, which is a problem that is usually of genetic origin. Elbow dysplasia includes four conditions that can contribute to malformation and arthritis of the elbow. All four conditions result from abnormal growth of the bones of the elbow. Elbow dysplasia is an inherited condition and may occur in one or both elbows. Elbow dysplasia is one of the most common causes of front leg limping (forelimb lameness) in large and giant breed dogs. Breeds known to have an increased occurrence of elbow dysplasia are the Labrador retriever, rottweiler, golden retriever, German shepherd, Bernese mountain dog, chow chow, bearded collie, and Newfoundland. The diagnosis of elbow dysplasia is most commonly made in young dogs from 8 to 18 months of age, when the malformation of the joint causes soreness and therefore limping (lameness). Mild cases may not be detected at this age, and instead, arthritis develops and symptoms first become apparent when the dog is older.

The four conditions that make up elbow dysplasia, individually or as a group, are the following:

- Ununited anconeal process—a normal projection on the ulna, the bone at the back of the elbow, does not fuse properly to the main part of the bone, such that the humerus is improperly seated in the elbow joint.
- Osteochondritis dissecans—a defect in the cartilage of the joint due to growth abnormalities. Some of the cartilage is not attached to the underlying bone and a loose cartilage flap forms.
- Fragmented medial coronoid process—a projection of bone on the inside edge of the ulna becomes fractured due to osteochondritis. This further disturbs the smooth functioning of the joint.
- Incongruity—the surfaces of the elbow joint do not fit together perfectly due to bone abnormalities. The result is a loose, unstable joint that is prone to excessive wear-and-tear, causing joint damage that may be irreversible.

Initially, the limping (lameness) may only be apparent as stiffness in the affected leg after rest, and a dog can “warm out of” this early symptom after seconds or minutes of walking. Later, foreleg lameness may be apparent all the time or intermittently. Intense physical exercise such as running will usually make the lameness worse, and this can be apparent immediately, later after resting (such as the next day), or both.

There is no way to tell which of these four components, if any, is/are present in a dog that is limping. However, it is important to determine whether elbow dysplasia is present when a dog is limping and, if so, to what extent because the treatment approach and prognosis (outlook for return to normal) vary depending on the severity of the problem.

As a first step, a veterinary examination which includes manipulation of the elbow can localize pain to the elbow joint. This is important because a dog limps on a leg in the exact same way whether the problem is in the shoulder, the elbow, or the paw. A series of x-rays (usually four views) of the elbow is taken to detect the exact abnormality present. Your pet usually will need to be heavily sedated or anesthetized for these x-rays since careful positioning and complete motionlessness are required; a dog's owners are not permitted in the x-ray area in lieu of sedation. In some cases,

laboratory examination of a small amount of joint fluid may help confirm the diagnosis, via a procedure called arthrocentesis or “joint tap” for removing a small sample of fluid from an affected joint. Arthroscopy can also be used for diagnosis, and just like in human arthroscopy, a camera is used for visualizing the inside of the joint and many corrective procedures can be done with minimal invasiveness this way. Both elbow joints should be examined since about 50% of affected dogs have the condition in both elbows, although only one leg may appear painful at first.

## LIVING WITH THE DIAGNOSIS

Weight control is important in dogs that are overweight to any degree, because this reduces the stress and strain on the joints irrespective of surgery or medications. Indeed, elbow dysplasia is automatically easier to treat, and treatment is most likely to be successful, in patients who are of normal, appropriate body weight (currently, 44% of the U.S. pet dog population is overweight).

## TREATMENT

Elbow dysplasia is often compared to having a stone in one's shoe, where the stone is a fragment of bone or cartilage and the shoe is the elbow joint. Therefore, removal of the “stone” (fragment of bone or cartilage) is a key element of success. For the best long-term outcome, surgery is virtually always the best treatment, and in most cases, it is better to have it be performed early on (within days or weeks of the diagnosis of elbow dysplasia) in order to minimize the risk of permanent damage, scarring, or arthritis inside the joint. As an exception, some older pets with longstanding elbow dysplasia and advanced arthritis by the time the problem is attended to may not benefit from surgery, if the secondary arthritis is already so severe that removal of the cartilage or bone fragment is too late.

Surgery can consist of arthrotomy (opening of the joint surgically) or arthroscopy (scoping procedure in which a camera is used to see inside the joint, allowing the surgeon to work without opening the joint completely). The advantage of arthroscopy is that it is less invasive, but the drawback is that it requires arthroscopic equipment and specific skills for the procedure. Your veterinarian may discuss arthroscopy with you if it seems appropriate for your dog, including the possibility of having this done by a board-certified veterinary surgical specialist (directory: [www.acvs.org](http://www.acvs.org) in North America, or [www.ecvs.org](http://www.ecvs.org) in Europe).

After surgery (whether open arthrotomy or scoping/arthroscopy), your pet's activity must be strictly limited for a minimum of four weeks to allow healing of the cartilage in the joint. Exercise should be limited to leash walks. Most dogs feel better “too quickly” and are keen to run even while the tissues are healing, which can be severely damaging and which you should prevent at all cost. When healing is complete, exercise can be reintroduced gradually over 1-2 weeks, or as directed by your veterinarian.

Analgesic and antiinflammatory medications can be used for relieving pain due to elbow dysplasia and the resulting arthritis. It is essential **NOT** to use certain over-the-counter antiinflammatory drugs. Ibuprofen (Advil, Motrin, and others), naproxen (Naprosyn, Aleve), and many others can severely damage the lining of dogs' stomachs and are considered **TOXIC** to dogs; they have caused perforating ulcers of the stomach that have been fatal. If your dog seems uncomfortable after surgery, talk to your veterinarian immediately rather than reaching for a human antiinflammatory without guidance.

## DOs

- Restrict exercise for at least 4 weeks after surgery.
- Use analgesic medication for pain, specifically as recommended by your veterinarian.
- Check your pet's surgical incision daily for redness, swelling, or discharge.

## DON'Ts

- Do not use over-the-counter human medications like antiinflammatories without first discussing them with your veterinarian. Many of these products, which may be perfectly safe for humans, are toxic to dogs.
- Don't bathe your pet until the stitches have been removed.
- Do not let your pet lick or chew the incision.

## WHEN TO CALL YOUR VETERINARIAN

- If there is swelling at or drainage from the surgical incision or if your pet is licking the incision.
- If you see a lack of appetite or vomiting postoperatively, because these may be signs of stomach irritation, which can be a side effect of antiinflammatory pain medications.

## SIGNS TO WATCH FOR

As a first indicator of the possibility of elbow dysplasia:

- Foreleg lameness that becomes progressively worse in young large-breed dogs.

## ROUTINE FOLLOW-UP

- After surgery, have stitches removed in 10 to 14 days.

## ADDITIONAL INFORMATION

- Do not breed affected animals since elbow dysplasia is an inherited (genetically transmitted) disorder. Dogs with elbow dysplasia of any degree should be neutered.
- In puppies, rapid growth and excess feeding of highly nutritious diets may be related to the development of the joint abnormalities and must be avoided to reduce the risk of elbow dysplasia. Large-breed puppy foods are specifically formulated to reduce the risk of nutritionally triggering or worsening elbow dysplasia.

*Other information that may be useful: "How-To" Client Education Sheets for postoperative home care:*

- How to Perform Range-of-Motion Exercises
- How to Provide General Postoperative Care at Home



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