

ELBOW DYSPLASIA - CANINE

Elbow Dysplasia

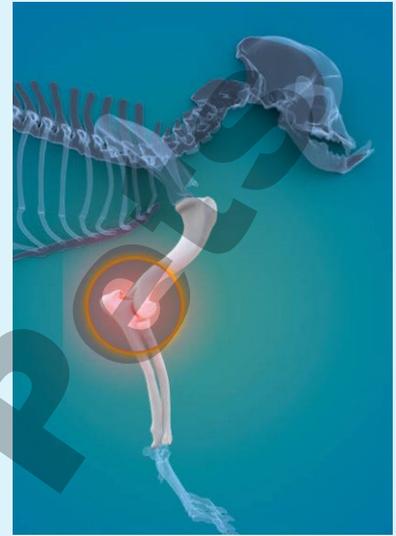
What Is Elbow Dysplasia in Dogs?
PetMD

Overview
ACVS

What Is Elbow Dysplasia in Dogs? *PetMD*

The canine elbow is a complex joint made up of three bones: the *humerus*, the *radius*, and the *ulna*. These bones work together to allow a dog to bend, run, and play.

- Elbow dysplasia is a condition related to abnormal bone growth and/or development that alters the function of this joint, leading to abnormal pain and arthritis—which most certainly affect a dog’s ability to bend, run, and play.
- Elbow dysplasia is seen more often in younger, large-breed dogs.
- Elbow dysplasia can make the elbows look swollen and may encourage the dog to position them abnormally, such as pointing them outwards.



Typically, elbow dysplasia in dogs is diagnosed as having four lesions, involving different parts of the joint:

- **Ununited anconeal process (UAP):** UAP occurs when there has been separation of the bone at the top of the ulna.
 - This is usually noted at 4 to 8 months of age.
- **Fragmented coronoid process (FCP):** FCP occurs when part of the ulna fails to attach to the rest of the bone.
 - This leads to laxity, inflammation, and arthritis.
- **Osteochondrosis of the medial humeral condyle:** During development, cartilage eventually turns into bone, but in this case, that process doesn’t occur. So, where bone should be, cartilage takes its place.
 - The cartilage can subsequently flake off, causing pain, swelling, and lameness.
- **Medial compartment disease (MCD):** MCD occurs when an abnormal amount of pressure from one joint surface erodes another joint surface, causing bone to become exposed, inflamed, and painful.
 - This process is irreversible and carries a poor prognosis.

Overview - *ACVS*

Elbow dysplasia is an inherited condition that can occur in most dog breeds but is most commonly seen in large to giant breed dogs.

- It has been noted to affect both elbows in up to 80% of patients.
- Bernese Mountain Dogs, German Shepherds, and Golden retrievers among others are predisposed to **UAP** while Labrador retrievers, German Shepherds, and Golden retrievers have an increased predilection among other breeds for developing medial compartment disease (**MCD**).
- Unfortunately, once the elbow joint has been damaged through either cartilage loss, medial compartment disease or an ununited anconeal process, inflammation and further cartilage damage occurs.
 - Ultimately this causes progressive arthritis of the elbow joint leading to pain and loss of function.

<p>Breeds at Risk</p> <p>Breed Prevalence <i>College of Veterinary Medicine</i></p> <p>Some breeds of dogs have a higher risk of getting elbow dysplasia. <i>WebMD</i></p> <p>Overview <i>ACVS</i></p>	<p>Breed Prevalence – College of Veterinary Medicine Rottweilers, Labrador Retrievers, German Shepherd Dogs, Golden Retrievers and Chow Chows head the list of breeds with a high prevalence of this orthopedic problem, but any dog can suffer from elbow dysplasia.</p> <p>Large dogs are most likely to develop it, but Pugs are second on the prevalence list produced by the Orthopedic Foundation for Animals. Elbow dysplasia is a genetic ailment, so breeders are encouraged not to use affected dogs in their breeding programs.</p> <p>Some breeds of dogs have a higher risk of getting elbow dysplasia. WebMD These include:</p> <ul style="list-style-type: none"> • Basset Hound • Bernese Mountain Dog • German Shepherd • Golden Retriever • Great Dane • Labrador Retriever • Newfoundland • Rottweiler <p>Overview – ACVS</p> <ul style="list-style-type: none"> • Bernese Mountain Dogs, German Shepherds, and Golden retrievers among others are predisposed to UAP. • Labrador retrievers, German Shepherds, and Golden retrievers have an increased predilection among other breeds for developing medial compartment disease (MCD).
<p>Causes</p> <p>Causes of Elbow Dysplasia in Dogs <i>PetMD</i></p> <p>What Causes Elbow Dysplasia in Dogs? <i>WebMD</i></p>	<p>Causes of Elbow Dysplasia in Dogs - PetMD Elbow dysplasia in dogs is thought to be an inherited condition, but it has also been associated with:</p> <ul style="list-style-type: none"> • Prior trauma • Nutritional imbalances or deficiencies • Defects in cartilage growth or bone development • Hormonal factors • Certain large breeds are predisposed to elbow dysplasia in dogs, which often affects both elbows rather than one. <p>What Causes Elbow Dysplasia in Dogs? WebMD Elbow dysplasia normally starts to affect puppies when they are between 5 and 18 months old.</p> <ul style="list-style-type: none"> • Typically, this condition affects medium-to-large breeds and is often hereditary. • If a puppy has elbow dysplasia, either one or both of its elbow joints will start to grow incorrectly. • There are three places in the elbow where dogs can get elbow dysplasia. Depending on the dog, they may have elbow dysplasia in one or more of these areas.

<p>Causes</p> <p><i>Continued</i></p> <p>What Causes Elbow Dysplasia in Dogs? <i>WebMD</i></p>	<p>The three different abnormalities are:</p> <ul style="list-style-type: none"> • Ununited anconeal process (UAP) • Fragmented coronoid process (FCP) • Osteochondritis of the elbow joint (OCD) <p>Studies show that genetic traits usually determine which abnormalities a puppy may get.</p> <ul style="list-style-type: none"> • Puppies from the same litter or family may all have elbow dysplasia as they grow. • Your dog’s environment may also determine if they get elbow dysplasia. • Possible environmental factors include diet and level of exercise, as well as the environment their mother was in while your puppy was in the womb.
<p>Signs & Symptoms</p> <p>Signs & Symptoms ACVS</p> <p>Symptoms – <i>College of Veterinary Medicine</i></p>	<p>Signs & Symptoms - ACVS</p> <p>Dogs affected by elbow dysplasia often show signs from an early age, typically from 5 months on, but some may first be diagnosed after 4–6 years.</p> <ul style="list-style-type: none"> • Affected dogs develop a front limb lameness that typically worsens over a period of weeks to months. • Lameness is usually worse after exercise and typically never completely resolves with rest. • Often both fore legs are affected, which can make detection of lameness difficult, as the gait is not asymmetric. • When both elbows are involved the dog usually becomes unwilling to exercise for long periods or may even refuse to complete a walk. <p>Symptoms – <i>College of Veterinary Medicine</i></p> <p>Generally, dogs with elbow dysplasia will be lame after exercise and won’t recover fully with just rest.</p> <ul style="list-style-type: none"> • Some dogs will start refusing to exercise, with a noticeable decrease in their overall activity level. • Dogs with this defect often move by turning their paw inward, noticeably holding their elbow out from the body in an attempt to shift weight off the sore part of the joint. <p>If your dog has elbow dysplasia only on one side of their body, you or your veterinarian may notice their lameness earlier.</p> <ul style="list-style-type: none"> • Favoring the defective limb will often be evident by a “head bob,” which means that your dog’s head goes higher on the bad footfall to take weight off that leg, bobbing down when the “good leg” lands. <p>That is the clinical picture if both elbows are affected but one side hurts more than the other.</p> <p>If both elbows are equally affected, then it can be more difficult to pick up on lameness.</p> <ul style="list-style-type: none"> • Most dogs will try to compensate with a shortened stride, and the range of motion in their joints is generally reduced. • Another clue is if you see your dog manipulating their leg by extending and flexing the elbow joint — an action that is often associated with pain. • Even with a more stoic dog, owners may notice some swelling of affected elbow joints along with abnormal warmth in the area.

<p>Diagnosis and Evaluation</p> <p>Diagnosing Elbow Dysplasia in Dogs AKC</p> <p>Diagnosis & Grading <i>College of Veterinary Medicine</i></p>	<p>How to Diagnose Elbow Dysplasia in Dogs - AKC</p> <p>“Early diagnosis of elbow dysplasia in dogs is important because you want to treat the condition before it causes osteoarthritis in the dog’s joint,” says Dr. Jerry Klein, AKC chief veterinary officer.</p> <ul style="list-style-type: none"> • Sometimes elbow dysplasia is difficult to diagnose early on because the dog shows only slight or intermittent signs of lameness. Clinical signs of canine elbow dysplasia usually involve lameness, which the Orthopedic Foundation for Animals (OFA) says may remain subtle for long periods of time, making it hard to diagnose. • The OFA attributes the occurrence of lameness on factors such as severity of changes, rate of weight gain, and amount of exercise. <p>Here are some signs to watch out for. If you see any of these signs, you’ll want to make an appointment for your dog with the veterinarian.</p> <ul style="list-style-type: none"> • The dog limps on occasion, especially after exercise or when first standing up. • One or both front legs rotate inward with elbows rotating outward. • The elbow joint appears stiff or unable to move freely. • You hear a crackling sound when the elbow joint moves. • Your dog is suddenly hesitant to go for walks or chase a ball. <p>The vet will ask you for the history and circumstances of the symptoms.</p> <ul style="list-style-type: none"> • They’ll also rotate the joint to check range of motion and thickening and use X-rays to look for changes in the joint. • A CT scan may be necessary to identify the cause and extent of the problem. • The vet will usually examine both elbows because the condition can develop in both legs at the same time. <p>Diagnosis & Grading – College of Veterinary Medicine</p> <p>True elbow dysplasia will not be diagnosed before 4 to 6 months of age, when the growth plates in joints are still closing.</p> <ul style="list-style-type: none"> • Most dogs are a couple of months older before a clear-cut diagnosis is made. • Most dogs are diagnosed with elbow dysplasia by physical examination and by doing a thorough lameness evaluation at 4 to 12 months of age. <ul style="list-style-type: none"> ◦ In mild cases, however, affected dogs may not show lameness until 7 or 8 years of age, when arthritis kicks in. <p>Diagnosing an elbow problem requires a thorough lameness exam with radiographs.</p> <ul style="list-style-type: none"> • Flexed views of both elbows can show defective areas and identify early arthritic changes. • A CT scan and arthroscopic surgery to look into the joint are used to guide diagnosis and therapy. <p>Grading elbow dysplasia</p> <p>Elbow grades are based on radiographic findings, but they don’t always correlate with the clinical signs. Some dogs feel very sore with a Grade 1 diagnosis, whereas others rated Grade 3 are minimally lame.</p> <ul style="list-style-type: none"> • Grade 1: Minimal bone change along the anconeal process of their ulna (at less than 2 mm) • Grade 2: Additional bone proliferation along the anconeal process (2–5 mm) and subchondral bone changes (trochlear notch sclerosis) • Grade 3: Well-developed degenerative joint disease with bone proliferation along the anconeal process being greater than 5 mm
---	--

<p>Treatment & Therapies</p> <p>Treatment Options <i>WebMD</i></p> <p>Non-Surgical Therapies <i>ACVS</i></p>	<p>Treatment Options - <i>WebMD</i></p> <p>Treatment depends on the severity of your dog’s elbow dysplasia.</p> <ul style="list-style-type: none"> • For moderate to serious cases, your vet will likely recommend surgery. <p>Depending on which of the three abnormalities your dog has, surgery might include:</p> <ul style="list-style-type: none"> • Removing coronoid fragments or loose cartilage, if the cause is FCP. • Changing the elbow joint to take your dog’s weight off of the damaged part of the elbow. • Reattaching or removing a UAP to the medial joint compartment (if the cause is UAP). • Surgically correcting the joint. • Replacing the joint completely. <p>If your vet doesn’t think that your dog needs surgery, there are other things that you can do to treat and manage your dog’s pain:</p> <ul style="list-style-type: none"> • Weight control: Symptoms will worsen if your dog becomes overweight. Keeping your dog at a healthy weight will avoid putting excess pressure on their joints. • Exercise: Even if your dog isn’t excited to exercise, they need to keep fit to stay healthy. Regular, short walks without too much running or jumping will help. • Medication: Your vet may give your dog anti-inflammatory medication to manage the pain. • Rest: Make sure your dog gets proper rest, especially after exercising. • Physiotherapy and hydrotherapy: These are great ways for your dog to get exercise and are both easy on the joints. <p>Non-Surgical Therapies - <i>ACVS</i></p> <p>Therapies include:</p> <ul style="list-style-type: none"> • Weight management: Simply getting your dog to their normal weight may decrease their pain dramatically. • Exercise: Moderate exercise moves the joint and builds cushion. Be sure to use proper warm-up and cool-down periods. <ul style="list-style-type: none"> ○ For example, if your dog loves to play ball, a 10-minute walk will help loosen their joints so that they can move more freely. • Physical therapy: Massage and hydrotherapy, like underwater treadmills and swimming, are typically done after elbow dysplasia surgery, but they also can be used to help the joint in cases where surgery isn’t possible. <ul style="list-style-type: none"> ○ Laser treatments, TENS (transcutaneous electrical nerve stimulation), ice therapy and acupuncture may be worth trying. • Pain medications: Your veterinarian may recommend a non-steroidal anti-inflammatory drug (NSAID), such as carprofen, to help keep your dog comfortable. • Joint supplements: Ingredients like glucosamine, hyaluronic acid and chondroitin encourage healthy cartilage and increased joint fluid, which help act as cushions. <ul style="list-style-type: none"> ○ The choices on the market are plentiful, but they aren’t all effective. Work with your veterinarian to choose the best supplement for your dog.
---	--

<p>Therapies</p> <p><i>Continued</i></p> <p>Non-Surgical Therapies ACVS</p>	<ul style="list-style-type: none"> • Injectables: Adequan is another injectable drug that could help with the accompanying osteoarthritis and pain. While it can help alleviate some pain, it won't help the elbow dysplasia itself. <ul style="list-style-type: none"> ○ Injecting platelet-rich plasma (PRP) into the joint has also been used with some success in canine elbow dysplasia. ○ Synovetin OA is a new, injectable medication that uses electron therapy to target macrophages and synoviocytes in the painful elbow. It must be injected directly into the affected joint. • Braces: Although you'll find braces for elbow dysplasia on the market, they're more suited for luxations (dislocations), hygromas (fluid buildup around joints) and ligament tears — not loose pieces of cartilage or bone. <ul style="list-style-type: none"> ○ If you're going to try a brace, proper fit is critical to it being effective, so be sure to involve your veterinarian or a veterinary rehab specialist in your decision-making process.
<p>Surgeries, Treatment & Aftercare</p> <p>Surgical Treatment / Aftercare ACVS</p>	<p>Treatment Options- ACVS</p> <p>Treatment depends on the severity of the disease in the elbow.</p> <ul style="list-style-type: none"> • In most cases surgery is recommended, but your veterinarian may recommend medical management if the problem is very mild or so severe that the joint may not likely benefit from routine surgery. • Treatment will depend on the primary cause of the elbow dysplasia. • Often surgery is best performed arthroscopically, but conventional open surgery can also be done. <p>Depending on the individual dog's elbow problem surgery may involve:</p> <ul style="list-style-type: none"> • Removal of any coronoid fragments and removal of loose cartilage (FCP). • Surgical alteration of the elbow joint to shift weight away from damaged areas. • Reattachment or removal of an united anconeal process (UAP) of the medial joint compartment. • Correction of joint step/incongruity; this is usually done by cutting the ulna to re-establish elbow congruence. • Joint replacement if the elbow is severely diseased <p>Aftercare and Outcome</p> <p>Surgery aftercare will depend on the type of surgery performed, and your veterinarian will advise you of exactly what is required.</p> <ul style="list-style-type: none"> • In general, your dog will need to be quiet and confined for a period of time, usually from 2–6 weeks or more. • The outcome will vary between dogs, but in general the more mild the disease, and the earlier it is treated, the better the long-term outcome. • Most dogs will benefit from surgical treatment even if disease is more advanced, but unfortunately once arthritis is established it will slowly progress regardless of any treatment. • On average, with treatment 85% of cases will show some degree of improvement in lameness and comfort despite progression of arthritis on x-rays. • The aim of treatment is to slow the progression of arthritis and prolong the patients' use of the elbow. • Unfortunately elbow dysplasia cannot be cured but it can be well managed and our patients can have a good long-term prognosis and outcome with a combination of surgical and medical management.

<p>Prevention</p> <p>Prevention of Canine Elbow Dysplasia AKC</p> <p>Prevention College of Veterinary Medicine</p>	<p>Prevention of Canine Elbow Dysplasia - AKC</p> <p>The OFA strongly recommends that dogs from at-risk breeds who are being considered for a breeding program, as well as their siblings, be radiographed to determine their elbow status.</p> <ul style="list-style-type: none"> • This information should be an important and carefully considered part of breeding decisions. “Elbow dysplasia can be extremely debilitating ... This makes it increasingly important to reduce the incidence of the disease through selective breeding, which has been shown to reduce its incidence.” • “The best way for breeders to prevent hereditary causes of elbow dysplasia is to screen their breeding dogs for this condition,” says Dr. Klein. “OFA health testing can help breeders determine the condition of their dog’s elbows.” <p>Joint supplements are another way to help prevent elbow dysplasia.</p> <ul style="list-style-type: none"> • These can help improve joint function, reduce inflammation, and slow the progression of joint damage. • Glucosamine and chondroitin are two common joint supplement ingredients that are used in both humans and dogs. <ul style="list-style-type: none"> ○ These supplements work by reducing inflammation, promoting healing, and increasing water retention in the cartilage, which provides more cushioning for the joint. • Green-lipped mussel (GLM) is another proven joint supplement ingredient for both humans and dogs and contains beneficial nutrients such as omega-3 fatty acids, glycosaminoglycans, and antioxidants. GLM is a powerful anti-inflammatory that can help decrease pain and preserve joint function. • Joint supplements are often used as an early intervention and throughout the progression of osteoarthritis because they’re safe for long-term use in most patients. <p>Prevention - College of Veterinary Medicine</p> <p>For any puppy, but especially ones with a greater risk for any orthopedic defect, keeping the puppy trim as they grow is important.</p> <ul style="list-style-type: none"> • You don’t want to scrimp on essential nutrients, but you don’t want a chubby puppy either. Your veterinarian may recommend some joint supplements right from a young age, even for normal pups, and they will encourage moderate exercise. • “Jump down” injuries can lead to a variety of front leg problems for dogs. This is when your dog repetitively jumps down off the bed, off the couch, out of your car and other similar movements. <ul style="list-style-type: none"> ○ Going down long flights of stairs frequently can also add trauma. ○ Many breeders recommend that puppies avoid more than 2 or 3 stairs until 6 months of age or older since the potential for damage is worse for puppies than for adult dogs. • Rigorous use of screenings for breeding animals (with full public information) is currently the best bet for decreasing cases of elbow dysplasia. <ul style="list-style-type: none"> ○ Normal parents may produce elbow problems, but the incidence is much lower than if one or both parents have bad elbows themselves. ○ “A registry system to reduce the number of dysplastic puppies produced would be the most important strategy to effectively decrease the number of cases of elbow dysplasia”.
---	---

References	<p>ACVS – American College of Veterinary Surgeons - Canine Elbow Dysplasia https://www.acvs.org/small-animal/canine-elbow-dysplasia/</p> <p>AKC – American Kennel Club - Elbow Dysplasia in Dogs: Signs, Symptoms, Treatment By Harriet Meyers Updated: Mar 26, 2024 https://www.akc.org/expert-advice/health/elbow-dysplasia-in-dogs/</p> <p>College of Veterinary Medicine - Canine Elbow Dysplasia <i>Elbow lameness: In a young dog, a deformed elbow may be the problem</i> Cornell University College of Veterinary Medicine’s DogWatch newsletter, published by Belvoir Media Group. https://www.vet.cornell.edu/departments-centers-and-institutes/riney-canine-health-center/canine-health-information/elbow-dysplasia</p> <p>Merck Veterinary Manual (Professional Version) - Elbow Dysplasia in Dogs By Joseph Harari, MS, DVM, DACVS, Veterinary Surgical Specialists, Spokane, WA Reviewed/Revised Nov 2020 Modified Oct 2024 https://www.merckvetmanual.com/musculoskeletal-system/arthropathies-and-related-disorders-in-small-animals/elbow-dysplasia-in-dogs#Ununited-Anconea-Process_v3286239</p> <p>PetMD - Elbow Dysplasia in Dogs: Symptoms, Causes, and Treatment Michael Kearley, DVM By Michael Kearley, DVM. Reviewed by Brittany Kleszynski, DVM Updated Jul. 2, 2024 https://www.petmd.com/dog/conditions/musculoskeletal/elbow-dysplasia-in-dogs</p> <p>WebMD - What Is Elbow Dysplasia in Dogs? Written by Christine Loconti Medically Reviewed by Amy Flowers, DVM on September 03, 2024 https://www.webmd.com/pets/dogs/what-is-elbow-dysplasia-in-dogs</p>
-------------------	--