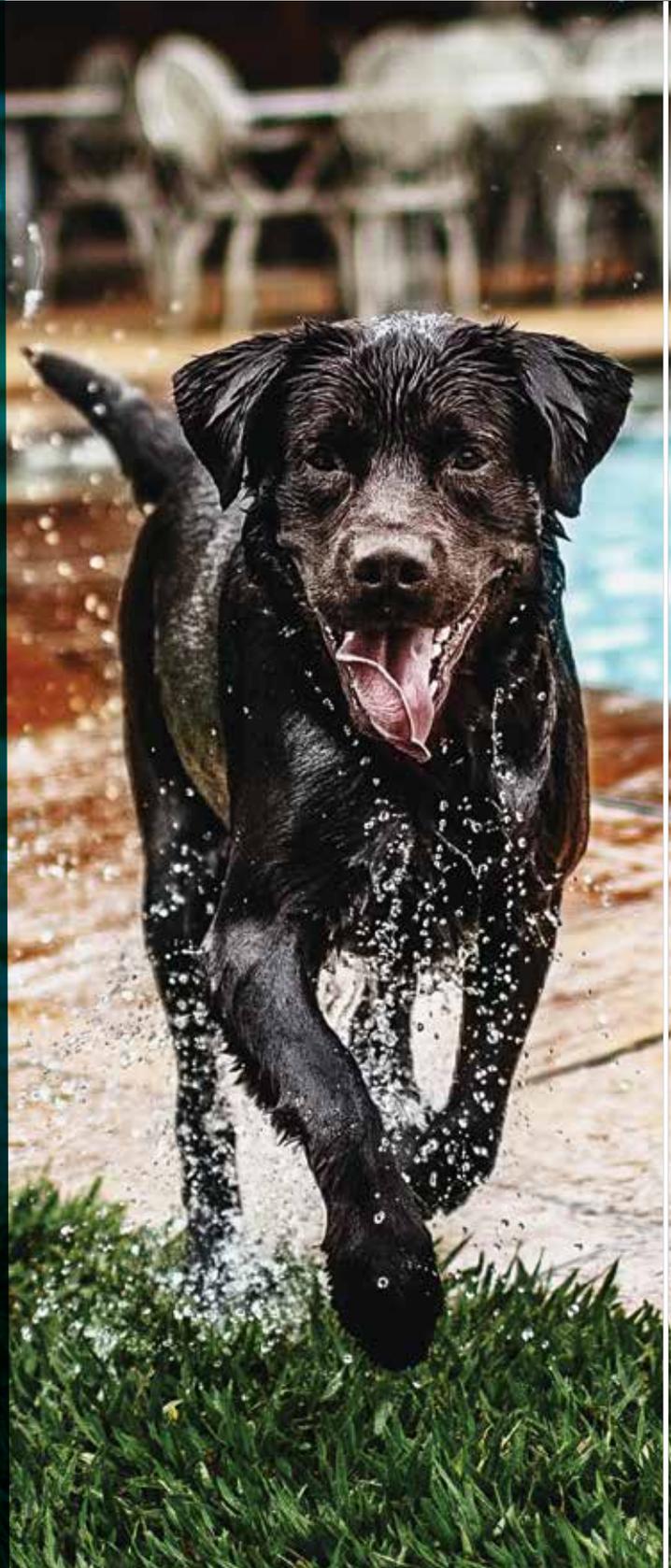


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# FOCUS ON EARLY DIAGNOSIS & INTERVENTION IN CANINE OA

Osteoarthritis (OA) is underdiagnosed in dogs, particularly in smaller and younger dogs as well as those in the early stages, when clinical signs might not be evident to owners.<sup>1</sup> Although veterinarians in general do a good job of identifying OA in the later stages of the disease, OA assessments aren't always a normal part of annual evaluations— young dogs with OA may remain undiagnosed until more prominent signs appear. But we know that we can change the course of these dogs' lives by identifying OA early, rather than waiting until OA progresses to the later stages, when there is less we can do. If we can diagnose and begin management of that disease process at a younger age, we can have a much more successful outcome for all parties involved: the pet, the pet owner, and the veterinarian.

One way to get the canine OA dialogue started earlier is by introducing the Canine OsteoArthritis Staging Tool (COAST) in practice.<sup>1</sup> The COAST tool may be a good start toward changing the paradigm of OA and helping dog owners and veterinarians appreciate the need to not only identify OA in younger dogs but also intervene early.



## EXPERT PANEL VIEWS ON CANINE OSTEOARTHRITIS:



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A variety of management options exist, including weight management, nutrition, physical therapy/rehabilitation, drug therapy, and nonpharmaceutical strategies. The addition of Adequan® Canine (polysulfated glycosaminoglycan) as a US Food and Drug Administration (FDA)-approved product is ideal in cases of early-stage OA in dogs. Backed by a strong scientific foundation, Adequan Canine can proactively treat OA, when diagnosed, to slow cartilage loss in a dog's synovial joints.<sup>2</sup> The specific mechanism of action of Adequan in canine joints is not known.<sup>2</sup>



## OA IS UNDERDIAGNOSED IN DOGS

Veterinarians in general practice tend to not be proactive in identifying OA, particularly in younger and smaller dogs. Many veterinarians often wait for owners to mention red flags or for clinical signs to become severe before making an OA diagnosis and initiating treatment. Although both pet owners and veterinarians still think of OA as an old dog disease, we need to move away from that misconception and start having the OA conversation sooner with pet owners of young dogs, especially the dog breeds with a higher potential to experience OA.



### VETERINARIANS AREN'T RECOGNIZING/DIAGNOSING OA SOON ENOUGH

*"We've come to recognize in our practice we're not finding osteoarthritis; it's finding us. We know that having a discussion with pet owners, especially [for] these high-risk breeds, at a much earlier age is vitally important."*

– Dr. Whit Cothorn

Recognizing OA in the early stages is a significant challenge in the primary care setting, mainly because veterinarians don't make OA assessments a part of annual evaluations due to a lack of time and resources. The diagnosis of canine OA currently depends largely on the dog owner noticing—and bringing to the veterinarian's attention—a general "slowdown" or a reduced ability to perform certain physical activities that affect the interaction between the dog and owner. This recognition by owners usually doesn't happen until changes are profoundly obvious, typically when the dog is older and in the later stages of disease.

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**OA CAN START VERY YOUNG; IT IS A LONG-LASTING DISEASE, ESSENTIALLY FOR A LIFETIME.**



**SMALLER DOGS ARE MORE UNDERDIAGNOSED**

*“Osteoarthritis is still severely underdiagnosed at its early stages. It’s particularly underdiagnosed in smaller dogs because we still have different expectations about under diagnosing in smaller dogs than in bigger dogs. We still have a long way to go in diagnosing osteoarthritis.”*

– Dr. Denis Marcellin-Little

Both owners and veterinarians may have different standards for what we expect from small dogs. We may exercise differently with them, or maybe they don’t exercise as much outside the house, so owners are less likely to notice changes in mobility and fitness. In addition, the way veterinarians think about pain in small dogs might differ from how they regard pain in big dogs. Veterinarians need to become much more proactive and more sensitive to the pain perceived by dogs, both large and small, who have OA. We need to detect it earlier and manage it more comprehensively.



**THERE IS A MISCONCEPTION THAT OA IS A DISEASE OF OLDER DOGS**

*“When we miss identifying or diagnosing young dogs with osteoarthritis, we’ve really missed a number of years in this dog’s life where we could have been intervening.”*

– Dr. Kristin Kirkby Shaw

Most people—both veterinarians and pet owners—have a perception of canine OA as being an old dog disease.

In people, OA is an age-related disease: The older you get, the more likely you are to have OA. Quite possibly by association, the historic approach to OA in the veterinary industry has been to only begin management if a patient is symptomatic, at which point the disease is often quite advanced and the dog is older.

OA can start very young; it is a long-lasting disease, essentially for a lifetime. Unlike the disease in humans, OA in dogs is driven primarily by developmental disease, which means that pathophysiology is beginning as puppies are developing. So in many respects, OA is not just an old dog disease. This is why it is incumbent to diagnose early, and perhaps even more important to start the conversation with pet owners before making a diagnosis is even in consideration.



**THE IMPORTANCE OF THE OA CONVERSATION WITH PET OWNERS AND HOW TO FRAME IT**

*“We need to have these conversations earlier in the life of these higher-risk breeds. Pet owners need to know what potentially can occur down the road. We have to let these pet owners know that it’s okay if their young dog is diagnosed with osteoarthritis. In fact, it’s much better for all parties involved that we find it sooner rather than later.”*

– Dr. Whit Cothorn

Identifying OA in a young dog tends to make veterinarians uncomfortable. After all, who wants to tell the excited, proud owner of a new puppy that the dog is at risk of developing OA or is already showing early signs of disease? It can be challenging to have these conversations because most pet owners think of osteoarthritis or arthritis as a scary word.



## BARRIERS TO BEGIN DIAGNOSING EARLY-STAGE OA IN DOGS

- 1** IMPROVE CLINICAL SKILLS
- 2** NEED FOR MORE EVIDENCE-BASED TOOLS
- 3** MAINTAIN PRACTICE REVENUE
- 4** OVERCOME PSYCHOLOGICAL BARRIERS

However, having the OA conversation with clients early on is essential in helping early detection and allowing for early intervention. By beginning this dialogue with dog owners and letting them know it is better to identify the disease early, we can help them overcome their fear and start treatment. We as veterinarians must remember we are advocates for these dogs.



## OA IS NOT READILY DIAGNOSED IN EARLY-STAGE OA DOGS

A big gap in veterinary medicine is the ability to diagnose developmental orthopedic disease in young dogs. Historically, veterinarians have treated OA patients when they are older and have clinical signs. We need to overcome barriers to early diagnosis so we can implement treatment early in the disease course and potentially alter the progression of OA. To do this, the industry needs more training, evidence-based tools, and guidance to give owners answers and to help identify and start treating dogs with OA earlier, when we can make more of an impact in their lives.



### BARRIERS TO EARLY DIAGNOSIS

*“Our understanding [of OA] and how we encounter it in [dogs] has remained somewhat stagnant up until very recently, but it’s accelerating. It has become very clear that we collectively as veterinarians need to radically accept that there needs to be a different way of thinking about osteoarthritis, rethinking how we recognize it, assess it, and manage it.”*

– Dr. Mark Epstein

There are a few concerns regarding barriers to early diagnosis of OA. Each of these issues will need to be addressed to begin diagnosing early-stage OA in dogs.

#### 1. IMPROVE CLINICAL SKILLS

In some cases, clinicians have not been trained or are not comfortable with the clinical skills and tests needed to make an early OA diagnosis. If the opportunity to diagnose the developmental orthopedic diseases in young dogs is missed, it could eventually lead to OA or the progression of OA later in life.

#### 2. NEED FOR MORE EVIDENCE-BASED TOOLS

Veterinarians lack evidence-based tools to identify canine patients with early-stage OA. There are no successful biomarkers for the physiology or pain of OA. Clinical metrology instruments (CMI), such as the Canine Orthopedic Index (COI) and the Canine Brief Pain Index (CBPI), are used for symptomatic patients but do not help with the problem of early OA identification. In addition, there is a large, unmet need for a staging system for OA, similar to the one created by the International Renal Interest Society (IRIS) for chronic kidney disease, that provides evidence-based treatment recommendations.

#### 3. MAINTAIN PRACTICE REVENUE

It is important for veterinarians to get in the habit of making the OA exam part of the annual pet visit. If there is a presumptive diagnosis of OA, there can be some reluctance to refer to a specialist early in the dog’s life, based on a perception of the potential loss of revenue.

## WE NEED TO CHANGE THE WAY WE IDENTIFY OA PATIENTS, IDENTIFYING THEM AS EARLY AS POSSIBLE SO WE CAN START THERAPY TO HELP EXTEND THE LONGEVITY OF THOSE JOINTS AND IMPROVE THE DOG'S COMFORT AND OVERALL QUALITY OF LIFE.

Even if the visit can be monetized through dispensing of medication, the lack of independent advice regarding OA diagnosis, combined with the time constraints of a wellness exam in general practice, results in a prioritization of discussion about conditions with evidence-based solutions which can be monetized (e.g., dental care).

### 4. OVERCOME PSYCHOLOGICAL BARRIERS

There are also psychological barriers to having the OA conversation in primary care—for both the veterinarian and owner. Beyond the time constraints of a wellness exam, veterinarians don't want to deliver the "bad news" of an OA diagnosis for a young dog, and owners don't want to have a conversation about their bouncy 7-month-old Golden Retriever potentially having OA, especially if they've just paid a breeder a lot of money.



### A PREDICTABLE DISEASE

*"Osteoarthritis is actually a very predictable disease, and this is because in dogs, it's almost always secondary to an underlying disorder of the joint. If we can identify [conditions that show up in young dogs] early, we can predict the dogs that are going to go on to develop osteoarthritis."*

– Dr. Kristin Kirkby Shaw

OA in dogs frequently develops secondary to an underlying joint disorder, such as a fracture of the joint, cranial cruciate ligament disease, or developmental orthopedic disease, which develops in young dogs. We can predict the dogs that are going to develop OA by identifying dogs with risk factors for OA, but we need evidence-based tools to do so.

Initially, the pain of OA is mild or intermittent, and dogs can function. Veterinarians tend to ignore these short-term or mild problems, waiting for clinical signs to become more severe, and owners may not notice them. We really start paying attention when the changes are more pronounced or the secondary changes from OA cause loss of the ability to go on a walk, get into a car, or climb a set of stairs. We make our task of managing OA much more difficult by waiting for the signs to be more profound.



### BENEFITS TO EARLY DIAGNOSIS

*"One of the huge benefits about being able to identify something like osteoarthritis early is we really improve our chances of maintaining quality of life, maintaining joint function, maintaining the dog's ability to do the things that they love to do for as long as possible. And that really is something that we should all strive to do."*

– Dr. Bryan Torres

Veterinarians can have an impact on the disease in its early stages, including in growing dogs. If we start treating very late in the disease, then we're really just trying to play catch-up. We need to change the way we identify OA patients, identifying them as early as possible so we can start therapy to help extend the longevity of those joints and improve the dog's comfort and overall quality of life. We can change the whole course of a dog's life by identifying OA early.



### A RELUCTANCE TO DIAGNOSE OA EARLY

*"With the young dog, part of the reluctance is we haven't had a great toolbox of simple or easy answers to give them. When we diagnose in a young dog, you tell the people who have the puppy that now they're going to go see a surgeon when they just bought the expensive Golden Retriever, and they start to get a little shell-shocked."*

– Dr. Anne Dagner

Some reluctance to diagnose early-stage OA in dogs stems from a dearth of evidence-based tools to offer answers to owners of young dogs. Although some management tools are available, no proven protocols, evidence-based data, or independent advice exists for the profession (such as IRIS scoring in veterinary medicine or the Osteoarthritis

# USING A TOOL LIKE COAST HELPS DEVELOP A PARTNERSHIP WITH OWNERS THAT ENCOURAGES EARLY IDENTIFICATION OF PRECLINICAL DOGS WITH OA RISK FACTORS AS WELL AS OWNER EDUCATION AND ENGAGEMENT.



Research Society International [OARSI] initiative in human medicine). We need tools to fill our veterinary OA toolbox and to provide owners with answers, both before and after diagnosis of early-stage canine OA.



## THE COAST TOOL

The Canine OsteoArthritis Staging Tool (COAST) offers a way to begin to bridge that gap in diagnosing and evaluating young dogs with OA.<sup>1</sup> It can be used to screen pets, as well as open up a conversation with owners about both symptomatic and asymptomatic pets.



### FOLLOW-UP VISITS ARE MORE LIKELY WHEN SUPPORTED BY NUMERIC DATA

*"I think what we're talking about here is a checklist. For me, that's the first thing: Get a screening checklist, a catch-all to open up a conversation."*

– Dr. Duncan Lascelles

Veterinarians face challenges in getting dog owners to return for a more thorough OA exam and return visits. Owners are more likely to follow up when numeric data are available that indicate a potential problem (such as the IDEXX symmetric dimethylarginine [SDMA] test for renal disease). A tool providing numeric data can be tracked over time and can help veterinarians develop a partnership with owners and encourage early identification of OA.



### INTRODUCING THE COAST TOOL

*"I think with the development of the COAST metric, [although] it's such a new metric, it is also a very valid piece of the puzzle that's been missing to help with early identification for those patients where we need to start that educational aspect with the client."*

– Dr. David Dycus

The Canine OsteoArthritis Staging Tool allows the primary care clinician to recognize these very early OA dogs in particular and advance the discussion about management prospects much earlier in the disease course than previously imagined.<sup>1</sup> COAST is used by both dog owners and veterinarians to grade the impact of OA on the dog:



- The owner completes a CMI (questionnaire) as well as his or her perception of the dog's degree of discomfort.



- The veterinarian evaluates the dog's mobility and posture and then assesses the dog's joints.



Using a tool like COAST helps develop a partnership with owners that encourages early identification of preclinical dogs with OA risk factors as well as owner education and engagement. The COAST tool is unique in that it can and should be used as a baseline for all dogs prior to any indications of OA. By promoting a team approach that incorporates the veterinarian, nurses/technicians, and reception staff, the COAST tool can provide more opportunities to increase owner understanding of OA and the treatment plan, as well as maximize efficiency of information gathering and alleviate time constraints for the veterinarian. Go to [www.adequancanine.com/resource-library](http://www.adequancanine.com/resource-library) to download or print a COAST form and pet owner questionnaire.



## SHIFTING THE GOAL OF OA TREATMENT

Detecting and treating OA early may be simpler, cheaper, and smarter than waiting for a dog to become severely affected by the disease. Similarly, determining a dog's baseline can help clinicians address flare-ups. Fortunately, once we have identified dogs with early-stage OA, we can employ a variety of OA management options to help change the outcome and have a lasting impact on these patients.

Go to [www.adequancanine.com/resource-library](http://www.adequancanine.com/resource-library) to download a COAST form and pet owner questionnaire.



### COAST IS FOR BOTH ASYMPTOMATIC AND SYMPTOMATIC PATIENTS

*"The COAST tool also encompasses the idea of screening all dogs and being able to identify dogs that are preclinical but have risk factors for the development of osteoarthritis."*

– Dr. Duncan Lascelles



### THE NEED TO SHIFT FOCUS TO EARLY INTERVENTION

*"My biggest change has gone from identifying those patients that are at the moment painful and then in a flare-up of some degree versus those patients that I consider to be at their baseline or status quo."*

– Dr. David Dycus

Although the main value of COAST may lie in identifying preclinical dogs that have risk factors for OA, this diagnostic aid can also be used to assess patients already showing signs of OA and should be used as a baseline measurement tool for all dogs. It can be applied universally to asymptomatic ("normal") and symptomatic dogs, so it will work for young dogs, overweight middle-aged dogs not showing any signs on exam or at home, and dogs with obvious gait abnormalities or are favoring a limb.



### COAST AS A COLLABORATIVE EFFORT

*"COAST is a collaborative effort between the veterinarian and his or her team at the clinic and the owner. COAST involves the owners filling out some information so they'll pick up some of the things that are happening at home that we would not be aware of."*

– Dr. Mark Epstein

By identifying dogs in the early stages of OA and then being more proactive with weight management, nutrition, disease-modifying osteoarthritis drugs (DMOADs), and rehabilitation discussions earlier in the disease course, veterinarians can help delay the onset of clinical signs of OA, slow the progression of the disease, and extend the nonpainful years for these dogs, ultimately perhaps even postponing euthanasia.

With early intervention, the following is helpful to pet owners:

- Being able to delay the need for prescribing pain medications
- Education about signs of OA pain and progression to look for
- A follow-up visit with some form of evaluation

Focusing on early intervention allows veterinarians to create an environment in which dog owners are aware of the risk factors and goals of OA management. This includes setting dogs up for maintenance of a lean body mass, keeping them active through daily exercise, and defining what will help keep these dogs comfortable, such as lifestyle and activity changes. Veterinarians can also use this opportunity to discuss with owners when dogs start to have changes away from their baseline and how to get flare-ups under control using multimodal management to address pain and discomfort.



### A VARIETY OF OA MANAGEMENT OPTIONS ARE AVAILABLE

*"I think there's a misconception among dog owners and veterinarians that dogs with osteoarthritis shouldn't be active. And really it's quite the opposite. We need to keep those joints moving, whether it's through manual therapy with a physical therapist or a rehab vet or it's just having the dog do a series of exercises at home."*

– Dr. Kristin Kirkby Shaw

Veterinarians have a number of options, including weight management, nutrition, and physical therapy/rehabilitation, that can be implemented earlier in the course of OA, when they'll be much more effective. Protecting strength, joints, joint motion, and fitness in a dog is better than trying to recover all of those elements after they're lost.

In a young dog that's been diagnosed with developmental orthopedic disease or OA, veterinarians need to provide the right exercise recommendations to the owner, whether it's taking the dog to a rehabilitation facility or just giving the client basic exercises for the dog to do at home, as well as reinforcing the foundation of taking the dog for a walk every day.

**Adequan® Canine** brand of polysulfated glycosaminoglycan (PSGAG).

**INDICATION** Adequan® Canine is recommended for intramuscular injection for the control of signs associated with non-infectious degenerative and/or traumatic arthritis of canine synovial joints.

**IMPORTANT SAFETY INFORMATION** Adequan® Canine should not be used in dogs who are hypersensitive to PSGAG or who have a known or suspected bleeding disorder. It should be used with caution in dogs with renal or hepatic impairment. Adverse reactions in clinical studies (transient pain at injection site, transient diarrhea, and abnormal bleeding) were mild and self-limiting. In post approval experience, death has been reported in some cases; vomiting, anorexia, depression/lethargy and diarrhea have also been reported. The safe use of PSGAG in breeding, pregnant or lactating dogs has not been evaluated. **Caution:** Federal law restricts this drug to use by or on the order of a licensed veterinarian. For additional safety information, please see Full Prescribing Information on the last page or at [adequancanine.com](http://adequancanine.com).



### THE ROLE OF REHAB SPECIALISTS IN OA MANAGEMENT

*"In the primary care setting, it's often very difficult to have enough time to have a good discussion about osteoarthritis and why it's important to intervene, especially early. And so you can always partner with a rehabilitation veterinarian, [who] will have more time devoted to the appointment to be able to explain things and to bring the clients on board with multimodal management."*

– Dr. Julia Tomlinson

If the general practitioner suspects early OA but is uncomfortable making a diagnosis, partnering with a rehabilitation specialist is a positive option. Rehabilitation specialists can spend the time needed to thoroughly evaluate the patient and have a comprehensive discussion with the owner. A specialist can further educate the owner about the disease state and OA progression, the importance of early intervention, and the benefits of various OA management options. Along with prescribing a drug or treatment, they can take time to explain the reasons behind the recommendations and provide owners with detailed guidance on activity modification and at-home, low-impact exercises to help the dog stay active or regain function.



### ADEQUAN® CANINE (polysulfated glycosaminoglycan)

Adequan® Canine (polysulfated glycosaminoglycan) is approved by the FDA to slow cartilage loss in a dog's synovial joints.<sup>2</sup> Backed by scientific evidence, Adequan Canine proactively treats the disease, unlike other products, which are used retroactively. The specific mechanism of action of Adequan in canine joints is not known.<sup>2</sup> Adequan Canine can help keep clients coming back to the practice and can be ideal for use in dogs with early-stage OA.



**ADEQUAN® CANINE**  
(polysulfated glycosaminoglycan)  
**HAS A STRONG SCIENTIFIC FOUNDATION**

*“Adequan Canine is the only [product] that has been proven to positively impact the course of joint disease over time.”*

– Dr. Denis Marcellin-Little

The original histologic studies done on Adequan Canine demonstrated physiologic changes in the cartilage, providing a strong scientific foundation for the use of this product. Evidence from the early studies indicates dogs receiving Adequan Canine during early joint degeneration do much better than dogs not receiving it.<sup>3</sup> Many products that veterinarians use in managing OA don't have that level of evidence backing their use for protecting cartilage in dogs, which ultimately can have a functional impact on these dogs and how mobile they are at home.



**THE USE OF AN FDA-APPROVED PRODUCT SUCH AS ADEQUAN CANINE OVER A NUTRACEUTICAL IS PREFERRED**

*“Adequan Canine is FDA approved. It's not treated like a traditional oral nutraceutical that potentially doesn't have some oversight body.”*

– Dr. Bryan Torres

Adequan Canine is the only FDA-approved disease-modifying osteoarthritis drug (DMOAD) that inhibits cartilage loss in a dog's synovial joints. It empowers veterinarians to proactively treat the disease, not just the signs of canine OA. Experts agree among COAST stage 2 and 3 patients, they would support the recommendation of Adequan Canine over a nutraceutical. In addition, the fact that Adequan Canine is FDA approved and has an efficacy study backing its use makes it a preferable direction.



**ADEQUAN CANINE KEEPS BUSINESS WITHIN THE PRACTICE**

*“It's not only that it's an injectable that the client is coming in for us to administer, but it's also a product that allows you to reestablish yourself as the expert, as the trusted resource for the pet owner. Adequan Canine provides you the opportunity to have these discussions about osteoarthritis.”*

– Dr. Whit Cothorn

Adequan Canine gives veterinarians a unique opportunity to better control the management of OA progression with the dog owner. Because veterinarians administer this injectable in-clinic, it helps prevent owners from using potentially unreliable products.

Adequan Canine is the only FDA-approved disease-modifying osteoarthritis drug (DMOAD) that inhibits cartilage loss in a dog's synovial joints.



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General practitioners can again be the trusted valuable resource to pet owners, where they want to come to you to discuss OA and disease progression in their pet.



**ADEQUAN® CANINE** (polysulfated glycosaminoglycan) **IS SUITABLE FOR DOGS IN WHICH JOINT DISEASE IS DIAGNOSED EARLY**

*"In my practice, I talk about Adequan Canine with almost every patient because I feel like it's such an important component of a comprehensive osteoarthritis plan. There's really nothing else out there quite like it. So, I'm going to talk about weight management, I'm going to talk about activity recommendations, and then I'm almost always going to talk about Adequan Canine, especially in young dogs that may not be severely symptomatic. We have the opportunity to give what I describe to owners as an "insurance policy" for their dog's cartilage, and by starting it early on, we're going to potentially change the course of the OA disease."*

– Dr. Kristin Kirkby Shaw

As veterinarians are starting to move into the process of slowing down and minimizing progression of arthritic changes in these early-stage patients, that's a very good avenue of timing for when Adequan Canine should be introduced, as opposed to waiting until the patient comes back with severe radiographic signs, severe periarticular fibrosis, and a loss of range of motion.

**Discover if Adequan Canine is the right choice for your OA diagnosed patients.**



**WHY USE ADEQUAN CANINE?**

*"Adequan Canine is remarkable because of its ability to protect the cartilage of dogs that are developing osteoarthritis. It's able to protect cartilage from degeneration, and we don't have that type of information about other things that we use in managing osteoarthritis in dogs."*

– Dr. Denis Marcellin-Little

The main goals when using Adequan Canine are to slow the progression of OA and reduce joint inflammation. In some cases, owners may not yet appreciate their dog's discomfort in everyday movements, or their dog may only have mild changes in activity. By starting Adequan Canine early after an OA diagnosis, veterinarians may be able to delay or deter the use of traditional pain medications.



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