



# MATURITY IN MOTION

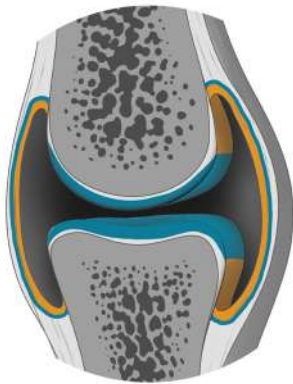
## JOINT HEALTH IN AGING PETS



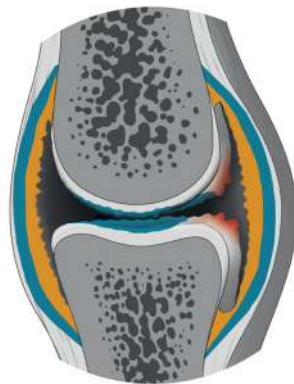
A healthy joint supports the body by providing a cushioning and shock-absorbing effect. Cartilage is a metabolically active tissue, maintaining a balance between anabolism (cartilage construction) and catabolism (cartilage destruction).

In a dysfunctional joint, a disruption of this balance can contribute to degenerative changes and osteoarthritis. This leads to loss of cartilage, narrowing of the joint space, thickening of the joint capsule and inflammation of the synovial membrane (synovitis), and eventually bone remodeling.

### OSTEOARTHRITIS (OA) is a disease of the entire joint – not just cartilage



Healthy Joint



Dysfunctional Joint

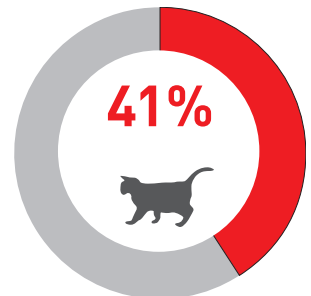
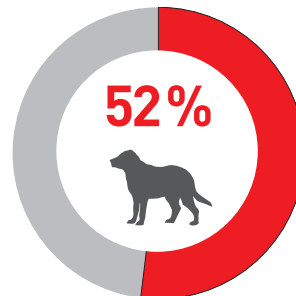
#### Risk factors:

- Age
- Breed/genetics
- Size
- Previous injury
- Obesity
- Muscle loss

### OBESITY is a frequent and important co-morbidity in both dogs and cats

#### The role of obesity in a vicious cycle

As inflammation in the joint leads to pain, mobility is reduced which increases the risk of weight gain and exacerbates muscle loss. Excess weight adds additional stress to joints, increasing inflammation and subsequently pain. Pets with OA are at risk of weight gain, regardless of body condition.



Proportion of dogs and cats with osteoarthritis that are overweight.

Banfield State of Pet Health 2019

**AN INDIVIDUALIZED WEIGHT MANAGEMENT PLAN IS ESSENTIAL FOR ALL AGING PETS AND FOR EVERY PATIENT WITH OSTEOARTHRITIS**



# NUTRITIONAL GOALS

## HOW CAN NUTRITION HELP?

In addition to weight management, preservation of lean muscle mass is important. Providing adequate levels of protein and specific amino acids help with this goal. In addition, active compounds in joint formulas typically use a blend of nutrients with four major effects:



Reduce inflammation



Reduce cartilage catabolism  
(breakdown/destruction)



Reduce free radicals



Promote cartilage  
anabolism  
(production/repair)

### CLASSIC COMPOUNDS

Frequently used and familiar joint support ingredients, best suited for chondroprotective effects (prevention) in healthy pets. Royal Canin formulas that use this combination: Health Nutrition formulas for Large and Giant dogs, Royal Canin Satiety Support formulas.



### OSTEOARTHRITIS IN CATS

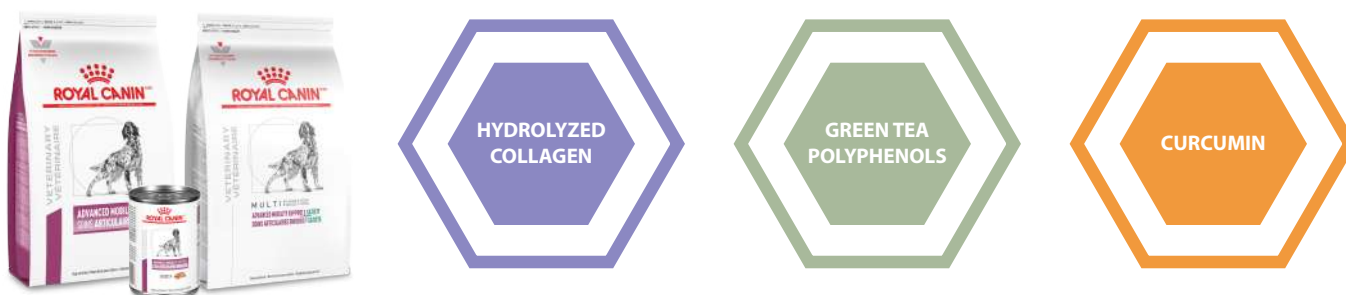
Cats frequently develop osteoarthritis in the lumbar spine, and as a result, clinical signs can be subtle and non-specific. Changes in behaviour (slowing down, vocalization), matted coat from lack of grooming and litter box issues can all be signs of osteoarthritis in cats.

In addition to the compounds above, green-lipped mussel powder provides additional glycosaminoglycans, antioxidants, and EPA+DHA. Found in: Royal Canin Mobility Support, Royal Canin Renal Support Early Consult (kibble).

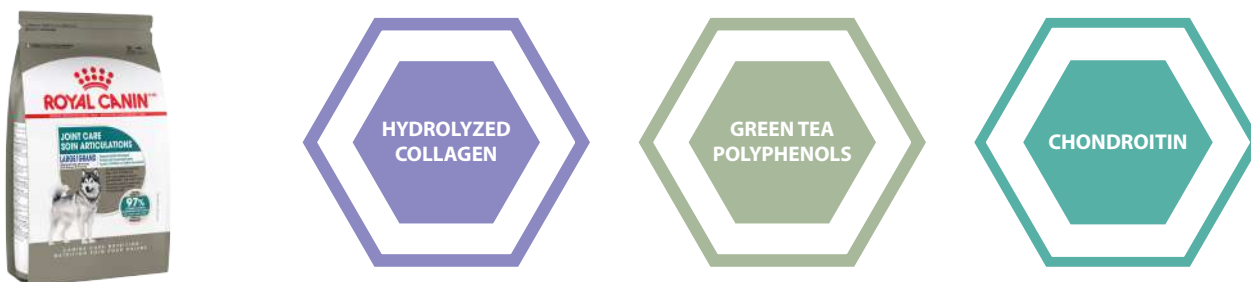


# THE NEXT GENERATION SYNERGISTIC COMPOUNDS

The effect of hydrolyzed collagen and green tea polyphenols were found to have a synergistic effect in vitro when used in combination with curcumin.<sup>1</sup> This combination can help when used as a part of multimodal therapy for dogs diagnosed with osteoarthritis.<sup>2,3</sup> **Royal Canin formulas that use this combination in addition to EPA+DHA and additional antioxidants: Royal Canin Advanced Mobility Support, Royal Canin Multifunction Advanced Mobility Support + Satiety**



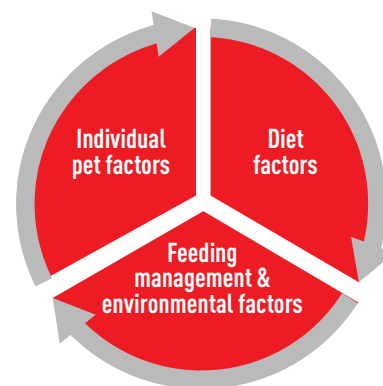
Hydrolyzed collagen and green tea polyphenols were also demonstrated in vitro to have a positive effect in combination with chondroitin, providing an alternative option for healthy dogs with a higher risk of developing osteoarthritis, or those with early signs of stiffness. **A Royal Canin formula that uses this combination in addition to EPA+DHA and additional antioxidants: Royal Canin Large Joint Care.**



## MAKING A NUTRITIONAL RECOMMENDATION

In all cases, the best diet for a given pet is based on a complete nutritional assessment of their individual needs. For example, is the goal prevention in a healthy but high-risk breed or is it a pet that is already being treated for osteoarthritis? What is the pet's body condition score? Does the pet have any other medical conditions to be considered? Individual needs change over time, so this assessment should occur at every visit to the veterinarian.

1. Comblain F, *et al.* Curcuminoids extract, hydrolyzed collagen and green tea extract synergistically inhibit inflammatory and catabolic mediator's synthesis by normal bovine and osteoarthritic human chondrocytes in monolayer. *PLoS One* 2015; 10(3): e0121654.
2. Comblain F, *et al.* Identification of targets of a new nutritional mixture for osteoarthritis management composed by curcuminoids extract, hydrolyzed collagen and green tea extract. *PLoS One* 2016; 11(6): e0156902.
3. Comblain F, *et al.* A randomized, double-blind, prospective placebo-controlled study of the efficacy of a diet supplemented with curcuminoids extract, hydrolyzed collagen and green tea extract in owner's dogs with osteoarthritis. *BMC Vet Res* 2017; 13(1): 395.



**NEED HELP?**  
CONTACT US AT [vet.royalcanin.ca](http://vet.royalcanin.ca)