

VETERINARY CARE NUTRITION™

# PET HEALTH

Review

DEDICATED TO CANADIAN VETERINARY PRACTICES



  
**ROYAL CANIN**

# INTRODUCING VETERINARY CARE NUTRITION™/MC

MATURE CONSULT™/MC, MATURE CONSULT MODERATE CALORIE™/MC, AND SENIOR CONSULT™/MC

*The most innovative and precise approach to health  
nutrition for your mature cat or dog.*



  
**ROYAL CANIN**

  
VETERINARY  
EXCLUSIVE





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# How do I Know if My Pet is Mature?

With advances in nutrition and veterinary medicine, dogs and cats are living longer. Many cats spend 50% or more of their life as seniors. The average life span of a cat is 15 years<sup>1</sup>, however many cats live into their late teens and early 20's. The oldest reported cat was Crème Puff, who lived to be 38!<sup>2</sup> A dog's life span varies according to its size, with smaller dogs often living into their teens. Bluey, an Australian Cattle Dog, is the oldest reported dog on record, living to 29.5 years!<sup>3</sup>

Dogs and cats age more quickly than people. Cats are considered adult at approximately one year. Dogs are considered adult when they are finished growing and are structurally mature,<sup>5</sup> meaning even the largest breeds of dog are adult at two years of age, while people are not defined as adult until 18-21 years.

There are many different definitions of when a pet is considered senior. Each dog or cat is an individual, and recommendations for veterinary care, exercise, and nutrition should be tailored to the unique needs of your pet. According to the American Association of Feline Practitioners, an older cat is mature or middle aged at 7-10 years, senior between 11-14 years, and geriatric at 15+ years.<sup>4</sup> The American Animal Hospital Association defines a dog as mature from middle age to about the last 25% of their expected life span. This

PET'S AGE IN YEARS	PET'S WEIGHT			
	0-9 kg	9-23 kg	23-41 kg	41+ kg
	0-20 lb	21-50 lb	51-90 lb	90+ lb
5	36	37	40	42
6	40	42	45	49
7	44	47	50	56
8	48	51	55	64
9	52	56	61	71
10	56	60	66	78
11	60	65	72	86
12	64	69	77	93
13	68	74	82	101
14	72	78	88	108
15	76	83	93	115
16	80	87	99	123
17	84	92	104	
18	88	96	109	
19	92	101	115	
20	96	105	120	

ADULT MATURE

will differ among breeds and sizes of dogs. Dogs are considered senior for the last 25% of their expected life span and geriatric as they move into the end of their life span.<sup>5</sup>

## WHY DO WE DEFINE LIFESTAGES?

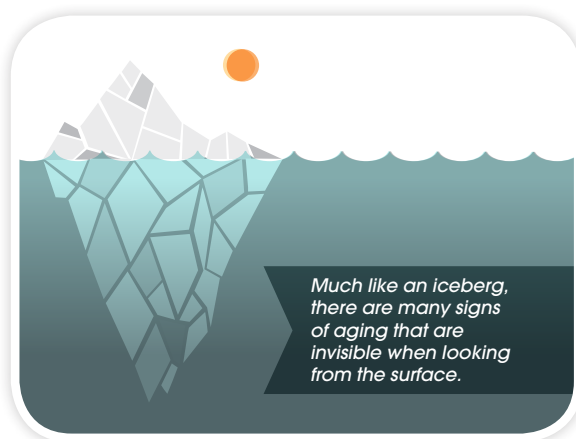
Age is not a disease, but there are inevitable biological changes associated with aging including an increase in incidence of certain conditions such as arthritis, dental disease, heart disease, kidney disease, and cancer.<sup>4</sup> There are different disease risks at different stages of life, for example mature cats are at a higher risk for obesity while geriatric cats are often

underweight. Defining different life stages gives a framework for creating a tailored plan for each cat and dog.<sup>5</sup>

People are considered middle aged at around 42 years. At this time, many doctors will recommend regular laboratory work to determine both a baseline - learning what is normal for each individual-as well as to screen for underlying disease - existing disease conditions with no obvious symptoms. Determining a baseline for your dog or cat allows your veterinarian to establish trends more specific to your pet.<sup>5</sup> Middle age would equate to approximately 7-8 years of age for most dogs and cats, with large and giant breed dogs reaching middle age as early as 5 years.<sup>4</sup>

### SIGNS OF AGING

Ultraviolet light, stress, pollution, illness, etc. can result in the creation of unstable atoms and molecules in the body known as free radicals. Each cell is subjected to attacks by free radicals every day. Free radicals left unchecked in the body can react with other atoms causing cumulative cell damage and contribute to many clinical conditions we associate with aging such as cataracts, arthritis, dental disease, and cancer.



There are visible signs of aging that we can identify in our mature dogs and cats, for example, greying coat, decreases in mobility, changes in weight, more time spent sleeping, less time spent playing, and an increase in dental disease. In a survey of over 900 owners of dogs 8 years and older, more than 35% noticed a decrease in the amount of time spent active and 25% saw a decrease in the time spent playing.<sup>6</sup>

There are also invisible signs of aging that are happening within our pets' bodies. In the early stages of many disease conditions there will be no noticeable signs. The earlier your veterinarian diagnoses an underlying condition in your dog or cat, the more options there will be to treat or manage the disease. A study looking at early disease detection laboratory work in dogs over 9 years of age identified at least one previously undiagnosed problem in 80% of the dogs. None of the dogs had any visible signs of disease.<sup>7</sup>

## THE IMPORTANCE OF VETERINARY CARE AND EARLY DISEASE DETECTION

These invisible signs of aging are why a health care program for your mature dog or cat, including early disease detection laboratory work, can have a powerful impact on maintaining health and maximizing longevity. Preventive health care programs are a practical approach to early disease detection and management.<sup>1</sup>



Early disease detection laboratory work gives your veterinary team the information necessary for early diagnosis and intervention, to relieve pain, identify risk factors and problems that require ongoing monitoring, and to provide management that improves the quality of life, delays onset of clinical signs, and prolongs life.<sup>7</sup> “Early detection of disease often results in easier disease management and better quality of life; it is less costly and more successful than crisis management.”<sup>4</sup>

## TARGETED NUTRITION FOR MATURE PETS

Mature pets, like people, can experience an increase in oral health problems. The dual action of the Royal Canin Dental formulas promotes oral health while decreasing plaque and tartar accumulation.

Many mature pets will experience muscle loss

(sarcopenia) as they age. One of the keys to management of muscle loss is to recognize it in its early stages. Targeted nutrition can support muscle health.

Glucosamine and chondroitin and the omega 3 fatty acids EPA and DHA support the joints. Green Lipped Mussel Powder has anti-inflammatory properties and supports joint health.

Nutrition can also play a role in managing renal disease which is a common clinical issue with senior dogs and cats.

Older cats and dogs can suffer a decline in cognitive function (brain aging). You may notice disrupted sleep wake cycles, appetite disorders, and behavior changes. Royal Canin’s targeted nutrition can improve cognitive function and support brain health.

Mature pets have a higher prevalence of cardiac issues. Nutrition can play a significant role in optimum cardiac health.

*Your veterinary team is your best resource for recommendations for the entire circle of health with your mature pet!*



# Common Disease Conditions in MATURE AND SENIOR DOGS AND CATS

As dogs and cats age, like people, they are susceptible to more disease conditions.

Some conditions that are particularly important in mature and senior pets: <sup>9</sup>

- **Weight changes**
  - Weight loss
    - especially in cats
  - Weight gain or obesity
- **Orthopedic disorders**
  - Osteoarthritis
- **Gastrointestinal disorders**
  - Inflammatory bowel disease
  - Constipation – cats
- **Dental disease**
- **Endocrine (hormone) disorders**
  - Hyperthyroidism – cats
  - Hypothyroidism – dogs
  - Hyperadrenocorticism
  - Diabetes mellitus
- **Neurological and behavioural disorders**
  - Behaviour changes
  - Cognitive dysfunction
  - Incontinence
  - Spinal cord disease
  - Seizures
- **Eyes**
  - Cataracts
  - Retinal disease
  - Keratoconjunctivitis sicca (dry eye)
- **Ears**
  - Deafness
- **Urogenital disorders**
  - Renal disease/failure
  - Urinary tract infections
  - Urolithiasis (urinary crystals and stones)
  - Uterine disease
  - Prostatic disease
- **Cardiac disease**
- **Skin disease**
  - Masses and tumors
- **Respiratory disorders**



1) Rodan, I., Editorial for AAHP Senior Guidelines Journal of Feline Medicine and Surgery 2005;7, 1-2  
2) "Cat World Records," <http://www.cat-world.com.au/cat-world-records>  
3) "Worlds Oldest Pets", <http://www.readersdigest.ca/pets/fun-facts/worlds-oldest-pets>  
4) Pittari, J., Rodan, I., Beekman, G., et al AAHP Senior Care Guidelines Journal of Feline Medicine and Surgery 2009; 11: 763-778  
5) Bartges, J., Boynton, B., Hoyumpa Vogt, A., et al AAHA Canine Life Stage Guidelines Journal of American Animal Hospital Association 2012;48: 1-11  
6) Salvin, H. E., McGreevy, P. D., Sachdev, P. S., et al Growing old gracefully –

Behavioural changes associated with "successful aging" in the dog, Canis familiaris Journal of Veterinary Behaviour 2011;6, 313-320  
7) Davies, M Geriatric screening in first opinion practice – results from 45 dogs Journal of Small Animal Practice 2012;53, 507-513  
8) Little, S Therapeutic Considerations in Senior and Geriatric Cats The Cat: Clinical Medicine and Management  
9) Epstein, M., Kuehn, N. F., Landsberg, G., et al AAHA Senior Care Guidelines for Dogs and Cats Journal of the American Animal Hospital Association 2005;41:81-91



# HOW TO CARE FOR MATURE DOGS & CATS

Minor modifications in your home and routine can make a significant impact on the quality of life for your mature dog or cat. For dogs and cats that have developed arthritis or stiff joints, it can be uncomfortable to lower their heads to their food and water bowls. Raised bowls can relieve stress on the spine and neck, making it more comfortable to eat and drink. Cats love to perch up high and view their world, but as their mobility decreases they may have difficulty reaching their favourite resting areas. Ramps or stairs can keep these vantage points accessible. For arthritic dogs, a ramp for the car or stairs up to a bed can help them maintain their regular routine in comfort.



**HEAT AND COLD INTOLERANCE** Aging dogs and cats become less tolerant of heat and cold changes and extremes. They may be more sensitive to the cold and more prone to heat exhaustion in the warmth. Ensure your dog or cat is kept warm in the winter and cool in the summer to increase their comfort and prevent health problems.



**LOSS OF SENSE OF SMELL** The sense of smell drives palatability in our pets. A decrease in their sense of smell can mean a decrease in appetite. Adding an appropriate canned formula or slightly warming the food may increase the tasty smell of the formula and entice mature pets to eat.



## VETERINARY CARE

The first step to determining appropriate veterinary care for your mature dog or cat is a physical exam. This thorough exam will include a review of temperature, pulse, respiration, pain, and a nutritional assessment.<sup>5</sup> Your veterinarian will assess body condition score, skin and coat quality, muscle condition, examine the ears, eyes, and teeth, palpate the abdomen, and examine joints for any signs of pain or discomfort.

Your veterinary team can recommend the appropriate early disease detection laboratory work for your mature dog or cat. The physical exam and laboratory work may identify a need for further diagnostics, for example x-rays, ultrasound, or additional bloodwork.



**VISION** Just like people, dogs and cats can experience eye changes as they age, often beginning around 7-8 years of life. Eye changes can also be a sign of other underlying disease. Your dog or cat's eyes should be examined by your veterinary team annually, and more frequently based on your veterinarian's recommendation. Many health concerns can be treated if diagnosed early. When changes in vision occur that are not correctable, you can help your dog or cat by keeping their environment as stable and unchanged as possible. Baby gates to block stairs and other places where falls may occur will keep them safe indoors; keeping your dog on leash when outside of the house will help keep them safe.



**HEARING** Much like people, hearing loss tends to be gradual as pets age. Notify guests to your home not to startle your mature dog or cat, particularly if they are asleep.





**EXERCISE** Dogs and cats of any age benefit from appropriate exercise. As your pet ages, you may need to modify their exercise routine. High impact activities, like jogging or jumping, may not be appropriate for a senior dog with osteoarthritis. Low impact activities, like walking or swimming, can be substituted to allow your dog to continue to be active. Arthritic cats may need modifications in the house to allow them to continue to reach their favourite spots with ease.



**NUTRITION** Nutrition is the foundation of health for every dog and cat. Dietary prescriptions must be precise and targeted to the needs of your individual dog or cat. Your veterinary team may advise a change in their nutritional prescription based on the findings of your pet's wellness profile and physical exam. Nutrition can play a role in managing disease as well as helping to prevent problems before they start. Feeding small meals will increase digestive availability, your mature dog or cat may benefit from multiple small meals throughout the day. Ensuring adequate water intake is important, older cats and dogs are more susceptible to dehydration.<sup>4</sup> Since many cats like running water, using a fountain or another type of running water source can help entice your cat to drink. Offering an appropriate canned food will increase water intake, which is essential with many disease conditions including renal/kidney disease, or constipation.



**OMEGA FATTY ACIDS** All Royal Canin Veterinary formulas are supplemented with omega 3 and 6 fatty acids. Omega 3 fatty acids, specifically EPA and DHA, are anti-inflammatory agents which have a positive impact on skin and coat health, improve brain oxygenation, and increase renal/kidney health. Omega 6 fatty acids help to improve the skin barrier and positively impact skin and coat health.



**DIGESTIVE HEALTH** Royal Canin Veterinary formulas are produced to promote digestive health. The use of L.I.P. (low indigestible protein) provides protein digestibility greater than 90%. This helps reduce stool odour and contributes to optimal stool quality. The addition of prebiotics, FOS (fructooligosaccharides), and MOS (mannanoligosaccharides), contribute to the health of the digestive system. The digestive tract makes up a significant portion of the body's immune system. Zeolites are inert clays that can absorb up to 50% of their volume in water and decrease the incidence of soft stools and diarrhea.



**ANTIOXIDANTS** Antioxidants help the body fight the destructive effects of free radicals and are important at all stages of life. Free radical damage is cumulative, so antioxidants are essential in any formula for mature pets. The unique CELT blend (vitamin C, vitamin E, lutein, and taurine) in Royal Canin formulas provides the antioxidant support that mature pets need.



**SKIN AND COAT HEALTH** The skin and coat of the dog and cat have many important roles including protection from the external environment and maintenance of the internal environment. Specific skin and coat ingredients in Royal Canin Veterinary formulas help to create and maintain a healthy skin barrier.



# Cognitive Dysfunction | BRAIN AGING

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Innovations in veterinary medicine and nutrition mean that dogs and cats are living longer. With a growing geriatric pet population, cognitive dysfunction (or brain aging) is becoming more prevalent. One study showed that one quarter of cats between 11 and 14 years develop at least one behavioural problem related to age, and this increases to more than half of cats that are over 15 years of age.<sup>1</sup> More than one quarter of 11-12 year old dogs, and more than 65% of dogs over 15 years, have at least one behaviour change associated with cognitive dysfunction.<sup>2</sup>

**What are the signs of brain aging?** The early signs of cognitive dysfunction can be easy to miss as they may just seem like your dog or cat is “getting older”. Canine cognitive dysfunction (CCD) or feline cognitive dysfunction syndrome (CDS) present with very similar clinical signs including: <sup>1</sup>

- Spatial disorientation or confusion, for example, getting trapped in corners or forgetting the location of the litter box (house-soiling is the most common reason for referral of old cats to behaviourists)
- Altered social relationships with owners or other pets in the household, i.e. increased attention seeking or aggression
- Altered behaviour, i.e. increased irritability or anxiety
- Changes in sleep-wake patterns
- Inappropriate vocalization, such as loud crying or “yowling” at night
- Altered learning and memory, i.e. forgetting commands or house training
- Changes in activity, either aimless wandering or pacing, or reduced activity
- Altered interest in food, sometimes increased or, more typically, decreased
- Decreased grooming
- Temporal disorientation, for example, forgetting that they have just been fed

Dysfunction associated with brain aging is common to many mammals; in fact canine cognitive dysfunction has been studied to better understand cognitive dysfunction in humans<sup>3</sup>, and early studies used cats as models for human seizure activity and brain damage or lesions.<sup>1</sup>

**What can be done?** Studies in dogs identified oxidative damage as a primary factor in development of CCD. Most exciting was a significant improvement in the ability of mature dogs to learn difficult tasks when supplemented with antioxidants.<sup>3</sup> Nutrition can have a significant impact on brain health when diet is supported with antioxidants.

Dogs and cats with cognitive dysfunction benefit immensely from increased mental stimulation. Keeping your pet's brain active helps to keep it functioning well. Short, frequent, positive training sessions can help keep your dog's brain agile and responsive. Environmental enrichment for your cat can lead to an increase in cognitive function. "The combination of environmental stimulation (for example, toys, company,

interaction, and food-hunting games) and a nutritional formula enriched with antioxidants is believed to have a synergistic action in improving cognitive function."<sup>1</sup>

Royal Canin Veterinary Care Nutrition™/MC Feline Mature and Senior Consult and Canine Mature Consult formulas have targeted nutrition to address cognitive dysfunction.

Phosphatidylserine improves cognitive function and supports brain health. Vitamin C, vitamin E, lutein, taurine, and lycopene scavenge free radicals. Omega fatty acids increase brain oxygenation. L-tryptophan helps improve cognitive function, supports brain health, and is a precursor to serotonin. Serotonin is a neurotransmitter that inhibits anxiety, and helps with sleep regulation.

*By addressing all aspects of the circle of health; veterinary care, exercise, and nutrition, dogs and cats with cognitive dysfunction can continue to enjoy their golden years.*



1) Gunn-Moore, D., Moffat, K., Christie, L.-A., Head, E. Cognitive dysfunction and the neurobiology of ageing in cats Journal of Small Animal Practice 2007; 48: 10

2) Neilson, J.C., Hart, B.L., Cliff, K.D., Ruehl, W.W., Prevalence of behavioral changes associated with age-related cognitive impairment in dogs Journal of the American Veterinary Medical Association; 2001;218:11

3) Cotman, C. W., Head, E., Muggenburg, B.A., et al Brain aging in the canine: a diet enriched in antioxidants reduces cognitive dysfunction Neurobiology of Aging 2002; 23: 5



# Dental Health WITH YOUR Mature Pet

**More than 85% of dogs and cats seen for a mature exam are diagnosed with dental disease.**

Dental disease can be painful and pose a risk to the overall health of your dog or cat. With appropriate care and treatment, oral and dental disease can be prevented or minimized. Although a preliminary examination can be done while your dog or cat is awake, a comprehensive oral exam can only be completed with your pet anaesthetized.<sup>1</sup> Regular dental cleanings are important to maintain oral health and reduce the risk of systemic infection. A home dental care program, including proper nutrition, is also essential. Royal Canin Veterinary Care Nutrition<sup>TM/MC</sup> Canine and Feline Dental are the only dual action dental formulations

**Just like with your own teeth, it is very important that your dog or cat's teeth are taken care of by a trained professional.**

available. The formulas' kibble size, shape, and structure and unique plaque reducing nutrients fight plaque, while a calcium binding agent reduces accumulation of tartar. Royal Canin canine Medi-Chews<sup>TM/</sup><sup>MC</sup> are a delicious treat that reduce accumulation of plaque and tartar, and improve bad breath. Their exclusive tapioca starch base makes for a very appealing texture while ensuring safety of ingestion.

**Dental disease can result in serious health problems including heart and kidney disease.**

If your veterinary team finds signs of dental disease in your dog or cat they may recommend a dental cleaning. Just like with your own teeth, it is very important that your dog or cat's teeth are taken care of by a trained professional. Your veterinary team is trained in diagnostics to be able to accurately determine the extent of the oral disease. They can clean your pet's teeth carefully ensuring they clean all tooth surfaces, between the teeth, and under the gum-line. If your dog or cat requires any teeth to be extracted, or any further dental procedures, your veterinary team will ensure they receive the greatest quality of care.

Improved oral health care can reduce the discomfort and medical problems that accompany dental disease including foul breath (halitosis), inflamed/swollen gums, pain, drooling, difficulty chewing, anorexia, loss of weight and muscle mass, inactivity, and less interaction with the family. Dogs and cats may show few obvious signs of the discomfort and pain they are feeling. By ensuring daily dental care and regular check-ups by your veterinary team, you can improve the quality of your pet's life!

1) Bartges J, Boynton B, Hoyumpa Vogt A, et al. AAHA Canine Life Stage Guidelines. Journal of American Animal Hospital Association 2012; 48: 1-11.



# *Does Your Pet Have Dental Disease?*

Greater than 85% of dogs and cats over the age of 1 year have signs of dental disease.\* Talk to your veterinary team about dental health.

\*Verhaert, Wetter (2004), Kyllar, Witter (2005)



  
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# OSTEOARTHRITIS in my cat or dog?

One of the most common concerns in mature pets is osteoarthritis (OA). This condition is also known as degenerative joint disease (DJD), and causes chronic pain and discomfort. OA is a progressive disease which is caused by the inflammation and gradual breakdown of joint cartilage, soft tissue, and bone within the joint. When the cartilage in the joint begins to break down, it causes friction (“rubbing”) between the bones which leads to increased pain and inflammation, and a decrease in mobility.<sup>1</sup>

## SIGNS OF AGING

OA is seen primarily in older pets, as a result of the wear and tear of aging, but it can be seen in dogs and cats of all ages. Other factors that contribute to the development of OA are repeated trauma or injury to the joints, activity level, and weight. Active, athletic, and working dogs are more likely to develop arthritis due to the strain placed on their joints as a result of their lifestyle. Dogs and cats that are overweight are also at a greater risk for developing arthritis; extra body weight means extra stress on the joints!

## FREQUENCY OF OSTEOARTHRITIS

OA is recognized as a common condition in dogs. It is also very common in cats, but is under-recognized.<sup>2</sup> In one study of 100 randomly selected cats, 91% had signs of DJD.<sup>3</sup>

In a study of 803 dogs, more than 55% of large dogs, 50% of medium dogs, and 30% of small dogs were affected with arthritis.<sup>4</sup>

## SIGNS OF OSTEOARTHRITIS

The signs of OA can range from mild to very severe depending on the level of disease, how long pets have been affected, and which joints are involved. Dogs with arthritis tend to be less active than normal; they may hold a leg up

or limp, or show signs of ‘slowing down’. Other changes can include difficulty with routine activities like getting up, climbing stairs, jumping, getting onto furniture or into cars.

Chances are, by the time you notice signs, it has been a problem for your dog or cat for some time already.

Other signs include stiffness, visible pain, muscle wasting, a crackling sound when the joint is moved, and, in some cases, excessive grooming (licking and biting) of the affected area. The symptoms of OA in cats are even more subtle. The most common symptoms in a cat are behaviour changes and lifestyle alterations; a decline in the level of activity, a





decrease in the ability to jump, and constipation or failure to use the litter-box. Owners frequently report alterations in jumping up, jumping down, height of the jump, general movement, 'grumpiness' on handling and seeking seclusion.<sup>3</sup>

When the signs of OA start to appear, especially with mature dogs or cats, an examination by your veterinary team is essential so that a diagnosis and treatment plan can be made that best suits you and your pet's needs. Dogs and cats are very good at hiding the signs of pain. Chances are, by the time you notice symptoms, it has been a problem for your dog or cat for some time already.

## DIAGNOSIS

Diagnosing OA is done through a combination of tests. This may include physical examination (where your veterinarian will assess your dog or cat's range of motion, any lameness or changes in gait), and radiographs (xrays) to look at the severity of changes in the joints and bones.

## TREATMENT

There are many treatment options available for dogs and cats with osteoarthritis. The key to any treatment plan involves reducing pain and inflammation, improving mobility and joint function, and, if possible, slowing down the arthritic process and progression of the disease. Treatment plans should make the most of non-drug therapy, such as nutrition, incorporating drug therapy as appropriate.<sup>3</sup> Your veterinarian can prescribe medications to manage pain and

inflammation. Nutraceuticals and supplements containing glucosamine and/or chondroitin, as well as omega 3 fatty acids (DHA and EPA), may also be effective in slowing cartilage deterioration, boosting cartilage regeneration, reducing inflammation, and improving joint function. Green Lipped Mussel powder contains many of these components (and more) and has been extensively researched and proven to be an effective ingredient in helping pets with arthritis feel better and act younger.



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For many pet owners, medicating and treating their pets can be challenging. Nutrition can be a simple and effective way to manage OA. Royal Canin Medi-Cal Mobility Support is a therapeutic formula for management of OA formulated with Green Lipped Mussel Powder that can be an excellent addition to the treatment plan for pets suffering from arthritis. This formulation has been proven to be highly effective at reducing the signs of arthritis. The Royal Canin canine and feline Veterinary Care Nutrition™/MC Mature and Senior Consult formulas are designed to address joint health while also providing optimum nutrition precisely targeted to mature dogs and cats. Your veterinary team can make the right nutritional prescription for your dog or cat.

Physiotherapy, rehabilitation, and massage have become increasingly popular options for many owners of pets suffering with arthritis. These exercises are designed to help the pet by reducing the inflammation, keeping the joints moving with as little stress as possible, and stimulating muscle strength (preventing atrophy). Underwater treadmills, passive range of motion exercises, and exercises designed to make the dog or cat use their muscles, all help

to build strength, increase muscle mass, and improve mobility. Warm compresses, chiropractic treatment, acupuncture, and laser therapies all may be beneficial in relieving pain and improving motion. Keeping your dog or cat in ideal body condition is also extremely important to maintaining good joint health.<sup>6</sup>

*A multi-modal approach to treating patients with OA, including the use of nutrition, pain management, and a treatment plan that includes weight management, exercise, rehabilitation, and veterinary care, can help your dog or cat live a more active and pain free life.*



- 1) Tilley L P, Smith F W.K. Arthritis In: Blackwell's Five-Minute Veterinary Consult: Canine and Feline 2011; 110-111
- 2) Pittari J, Rodan I, Beekman G et al. Senior Care Guidelines. Journal of Feline Medicine and Surgery 2009; 11: 763-778.
- 3) Lascelles D and Robertson S. DJD-Associated Pain in Cats. Journal of Feline Medicine and Surgery 2010; 12, 200-212.
- 4) Salvin H E, McGreevy PD, Sachdev PS et al. The effect of breed on age-related changes in behaviour and disease prevalence in cognitively normal older community

- dogs, Canis lupus familiaris. Journal of Veterinary Behaviour, Clinical Applications and Research 2012; 7: 61-69.
- 5) Gunn-Moore D. Considering older cats. Journal of Small Animal Practice 2006;47.
- 6) Bockstahler B, Levine D, Millis D. Essential Facts of Physiotherapy in dogs and cats: rehabilitation and Pain Management 2006; pp 99-100, 213.





*Keep the spring in their step!*

86% of dogs  
showed significant  
improvement  
in total arthritis  
scores after 42 days on  
Mobility Support™\*

\*Veterinary Therapeutics (2001)

90% of cats  
over 12 years old  
show signs of  
Osteoarthritis\*

\*Gunn-Moore, D. (2003)



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# CHARLIE'S *Story*

12 years old this year, Charlie is considered geriatric. He has been very active, competing in flyball, agility, obedience, rally, and high jumping. He went to his veterinarian for a physical exam and early disease detection appointment.

## WHAT IS AN EARLY DISEASE DETECTION APPOINTMENT FOR MY PET?

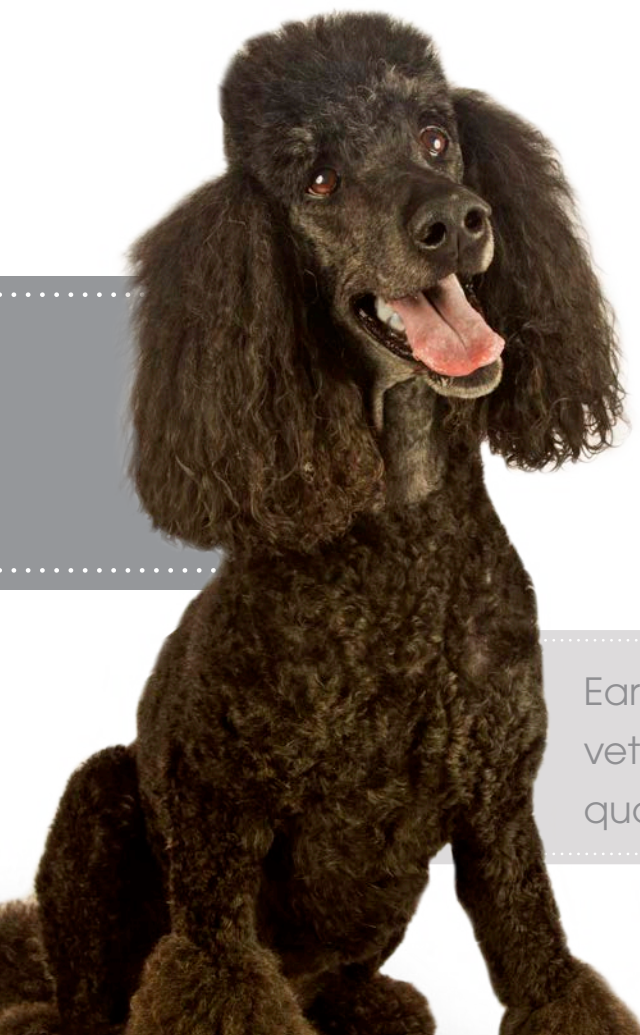
Recognition of the unique needs of your mature dog or cat allows you and your veterinarian to help your pet achieve optimal health. Regular physical examinations that include early disease detection blood and urine tests are essential to identify problems early. This type of testing is sometimes referred to as “wellness testing” by veterinarians. Early detection of disease and appropriate veterinary care can significantly improve quality of life and longevity. Your veterinary team is your best resource for recommendations on veterinary care, exercise, and nutrition.

### PHYSICAL EXAM AND HISTORY

The physical exam is a very important component of veterinary care for any pet. This gives your veterinarian the opportunity to closely examine everything from heart rate,

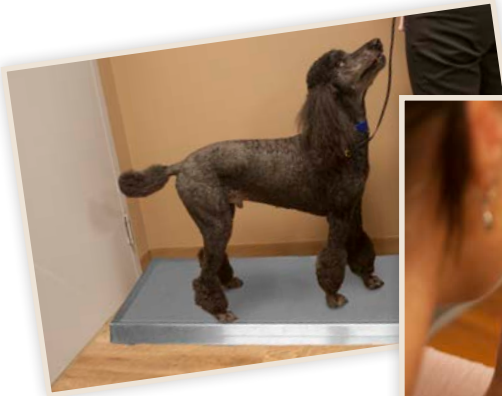
to joint health, vision, hearing changes, dental health, weight, skin and coat, and overall body condition. Taking a history involved asking Charlie’s owner a series of questions regarding his behavior and lifestyle habits...since of course Charlie cannot speak!

The veterinarian began by weighing Charlie to identify whether he has lost or gained weight since his last visit. A change in weight could be a sign of undiagnosed disease or it might have led to a conversation regarding appropriate nutrition type and amount for Charlie. Charlie’s veterinarian collected a detailed history from his owner -including whether there had been any changes in behavior, mobility, drinking, urination, or appetite. This information



Early detection of disease and appropriate veterinary care can significantly improve quality of life and longevity.



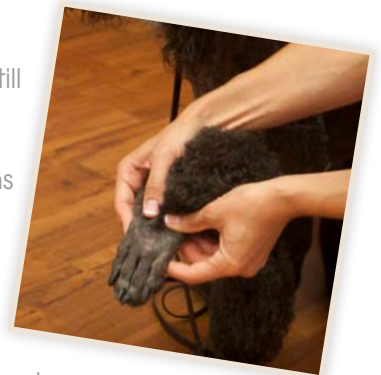


might target an underlying problem or may have highlighted a need for changes that may have improved Charlie's comfort.

Charlie's veterinarian examined him, looking for any changes in his skin and coat, and any bad breath, or odour from his ears or skin. She listened to his heart and breathing. She also examined Charlie's eyes and ears. She asked whether Charlie has had any lameness, or difficulty with stairs, whether he was spending more time lying down, or has had any other changes in his mobility. She asked questions that helped her evaluate Charlie's digestion, for example whether he had any vomiting, diarrhea, or constipation. Charlie's behaviour could also be a sign of underlying problems, so she asked if there had been any change in his interaction with the family, behaviour on walks, or around other animals.

### PHYSICAL EXAM FINDINGS

Charlie has always been a very active dog. He has competed in many dog sports and regularly runs with his owner. Over the last year, Charlie's owner noticed a gradual change in how he recovered from strenuous activity. He is still eager to go for walks or go running, but he seems quite stiff and sore the next day. In the last two months Charlie has had difficulty going up and down stairs, often stumbling or tripping.



When Charlie's veterinarian manipulated his left shoulder, she noted it seemed to be tender, and Charlie resisted the movement. These findings could be consistent with osteoarthritis, and she recommended radiographs (x-ray) to



further evaluate any arthritic changes. There was no evidence of injury or arthritis in his knees, hips, or elbows, which is great news for Charlie.

Charlie goes to a groomer every 6 weeks. Neither the groomer, nor his owner, had noticed any changes in his coat, other than progressively getting greyer! The groomer had found several small growths which Charlie's owner pointed out to his veterinarian. She examined the growths and recommended a fine needle aspirate (FNA). This is a simple non-painful procedure that involves taking a small sample of the material from the growths and sending it to the laboratory for analysis under the microscope by a specialist.

#### EARLY DISEASE DETECTION LABORATORY ANALYSIS

The veterinary team collected a urine sample from Charlie, and also took a blood sample to be analyzed. Charlie looks like a healthy dog; however just like in humans there are medical conditions that can be undetectable without laboratory analysis (typically blood and urine testing). Early disease detection assessment allows Charlie's veterinarian to determine underlying disease, early, which means that Charlie will have the very best options for treatment and management.



## CIRCLE OF HEALTH RECOMMENDATIONS FOR CHARLIE

### *Veterinary Care*

Charlie's bloodwork tells us that he is as healthy inside as he looks outside. His Complete Blood Count (CBC) showed that his blood and immune system cells are functioning normally. Abnormalities in the CBC can indicate infections, cancer, and other diseases, so a normal CBC is great news!

The Biochemical Profile helps his veterinarian assess his liver and kidneys, and also identify abnormalities in his blood sugar and electrolytes. Charlie's biochemistry profile revealed two abnormalities. Charlie's Blood Urea Nitrogen (BUN) was outside of the normal reference range. BUN and Creatinine levels are used by veterinarians, together with interpretation of a urine sample, as an indicator of renal health. Charlie's Creatinine is normal and his urinalysis shows excellent urine concentration. The most likely reason for the mild elevation in his BUN is that he was very mildly dehydrated- which may occur on the way to the clinic when dogs are excited and panting. There was a slight elevation in his Alanine Transaminase (ALT). This is an enzyme that is found in hepatocytes (liver cells) and becomes elevated when there is inflammation or damage in the liver. This elevation of his liver enzyme was



very slight and his other liver enzyme parameters were normal. His veterinarian recommended repeating his blood work in one month to see if the elevation is persistent and an indicator of change in his liver function that may require therapy or additional diagnostic testing. This is very important information for Charlie's owner to know early as it will allow her to monitor Charlie's liver for any disease. Charlie's veterinarian also recommended a thyroid hormone level be run, and this was normal.

The FNA samples from the growths on Charlie's skin were consistent with sebaceous cysts, which are benign masses that occur when glands in the skin get clogged and swell. There is no need for concern at this time, however monitoring of skin growths to check for changes in size, shape, and appearance is recommended, as in humans, to ensure that skin cancer is not overlooked.

### *Exercise*

Charlie's veterinary team was glad to see that he has maintained the same weight and continues to be in ideal body condition.

Charlie has remained energetic in his golden years. His owner discussed that Charlie has been slowing down and seeming stiff and sore after running. With this information, and also from the physical exam and the laboratory work results,

the veterinary team recommended that Charlie continue to enjoy low impact activities such as walks and swimming, but stop high impact activities like running which may increase the strain on his painful shoulder.

### *Nutrition*

To help manage the pain and inflammation in his shoulder, Charlie should be fed a formula that is enhanced with the anti-inflammatory omega-3 fatty acids EPA/DHA, as well as glucosamine and chondroitin to provide the building blocks for cartilage regeneration. Charlie's veterinarian prescribed Royal Canin Mature Consult Large Dog. The high levels of the anti-inflammatory omega 3 fatty acids will help to decrease pain and inflammation in his joints, and added glucosamine/chondroitin will help to prevent cartilage degeneration, and provide the building blocks for cartilage renewal in painful joints. Charlie is in perfect body condition and doesn't always finish his meals, so it's important he consumes enough calories to maintain his weight.

Charlie's veterinarian prescribed a medication for pain management. Early disease detection testing is also crucial when prescribing medication; the results help the veterinarian choose the most appropriate medication and provide a base to monitor any impact a pain medication may have on Charlie's kidneys or

liver. Charlie will be on pain medication until he no longer shows signs of being painful. The long term goal will be to manage his osteoarthritis through diet and lifestyle alterations.

Charlie is a very important part of his owner's life. She is delighted to know that he is as healthy as he looks, and she now has a "baseline" of lab work for him. Her veterinarian can compare future results to today's in order to recognize minor changes and detect any disease early. She knows the best nutritional formula to support Charlie at this stage in his life and she also has a better understanding of what exercise and activities are appropriate.



**The veterinarian's recommendations will help keep Charlie healthy, happy, and a part of his owner's life for as long as possible!**



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