

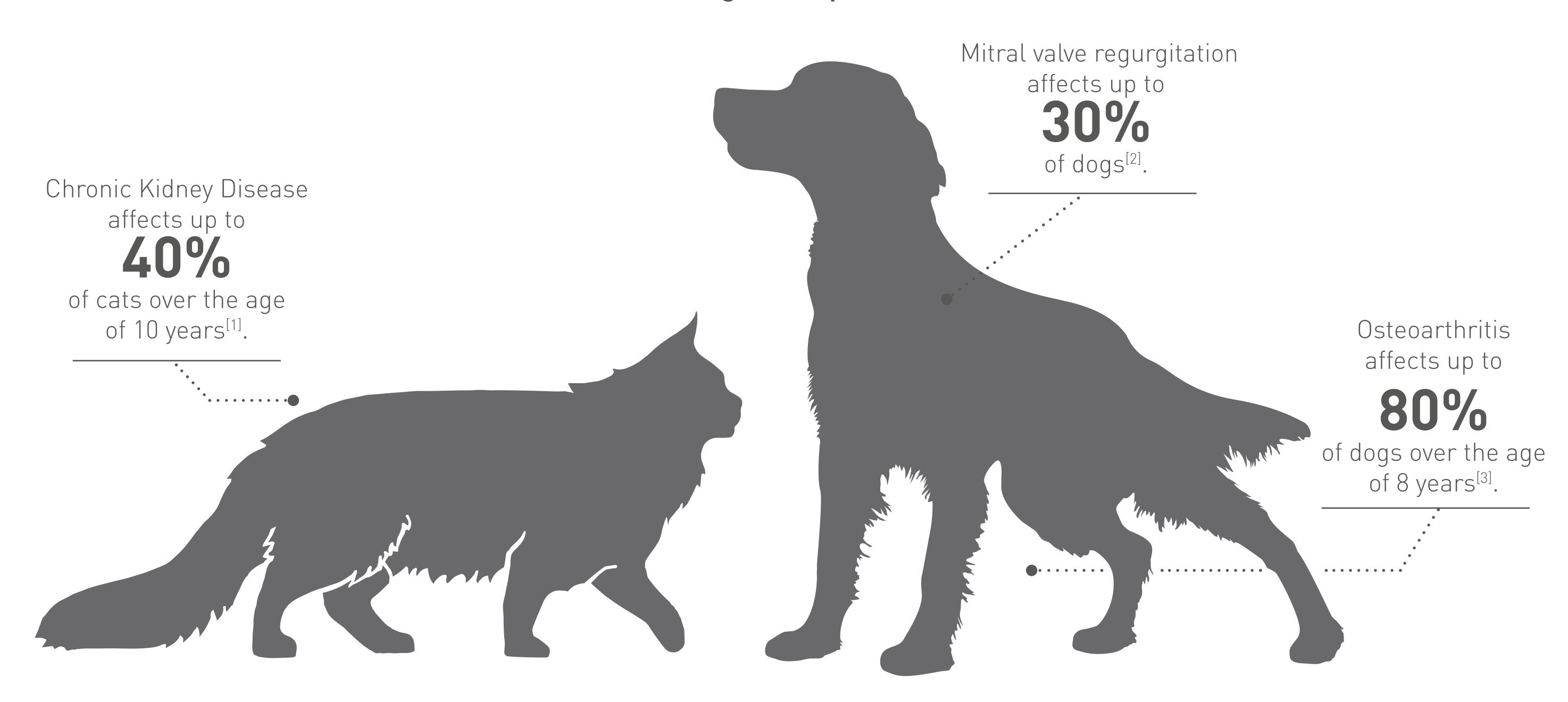


VITAL SUPPORT. GET A HEAD START.

Tailored nutritional solutions to help support pets' renal, mobility and heart function.

WE KNOW PETS ARE LIVING LONGER

Due to the increased lifespan of our pets, age associated disorders are becoming more prevalent



PET OWNERS WANT TO SEE THEIR PET GROWING OLD IN GOOD SHAPE

They look to vets for expert advice on all aspects of their pet's care



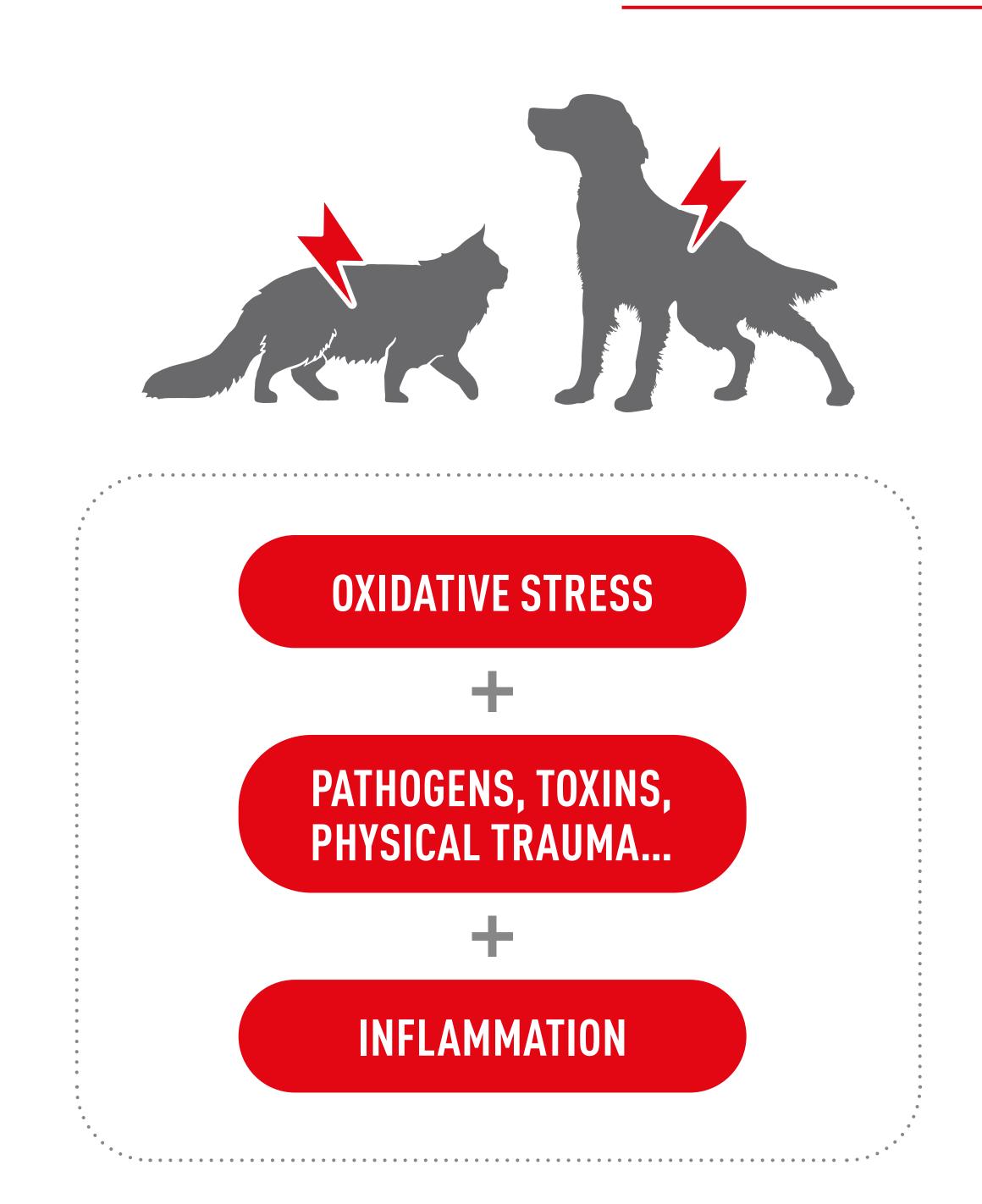
Pet owners care deeply about their pets' health and have access to an overwhelming amount of information on the best way to care for their pet^[4].

What they are really looking for is for their veterinarian to tell them how to provide the best care^[4].

Veterinarians continue to rank high as voices pet owners trust^[4].



THE AGEING PROCESS CAN LEAD TO METABOLIC AND PHYSIOLOGICAL CHANGES





EARLY DIAGNOSIS, MANAGEMENT, AND CLOSE FOLLOW-UP ARE KEY FOR GETTING A HEAD START ON SUPPORTING THESE PATIENTS

VITAL SUPPORT. GET A HEAD START

Tailored nutritional solutions to help support pets' renal, mobility and heart function





Tailored nutritional solutions to support cats and dogs with kidney disorders.

CHRONIC KIDNEY DISEASE

Chronic Kidney Disease (CKD) is progressive and permanent therefore early diagnosis is critical



Serum Creatinine rises above normal when approximately 75% of renal function

has been lost^[5].



43% of cats with CKD have an abnormal appetite^[6].

(anorexia, hyporexia or alterations in food preferences).

More than 1 in 10

dogs will **develop kidney disease** over a lifetime⁽⁸⁾.

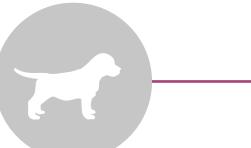


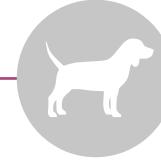
1st cause of mortality in cats over 5 years of age^[7].



Chronic Kidney Disease affects up to 40%

of cats over the age of 10 years^[1].



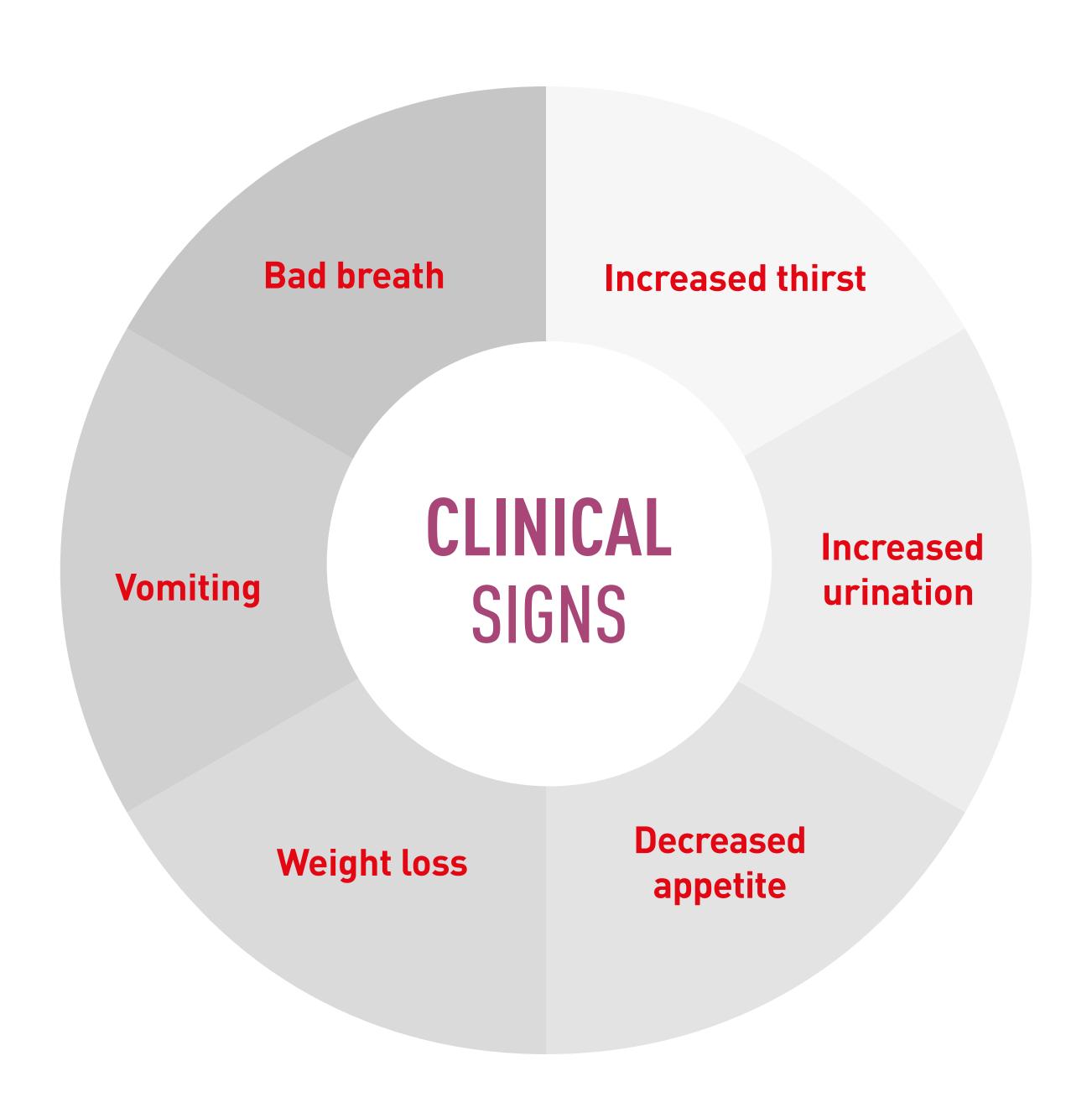




The prevalence for chronic kidney disease (CKD) in dogs varies widely (0.05-3.74%)⁽⁹⁾.

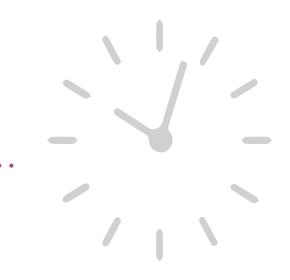
CLINICAL SIGNS

There are a number of clinical signs associated with CKD including:



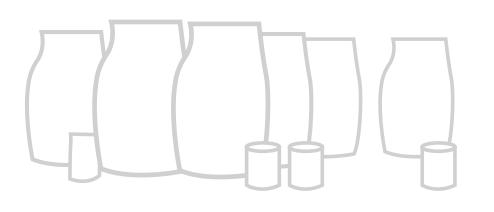


EARLY DIAGNOSIS TOGETHER WITH APPROPRIATE MANAGEMENT AND NUTRITION ARE KEY



DETECT CKD EARLIER

There are no clear first signs of kidney disease so an early senior assessment is essential to diagnose and effectively support CKD.



PROVIDE EFFECTIVE NUTRITIONAL SOLUTIONS

Nutritional adaptations have been proven to be beneficial in supporting pets diagnosed with CKD, and where reduced appetite is common^[11].

Our range of nutritional solutions, with different aromatic profiles and textures, are adapted to support either early or more advanced stages of CKD.

THE EARLIER CKD IS DIAGNOSED, THE MORE TIME YOU HAVE FOR INTERVENTION

For many pets, diagnosis occurs only after the onset of symptoms visible to the owner when kidneys have lost more than 75% of their function^[13,14]





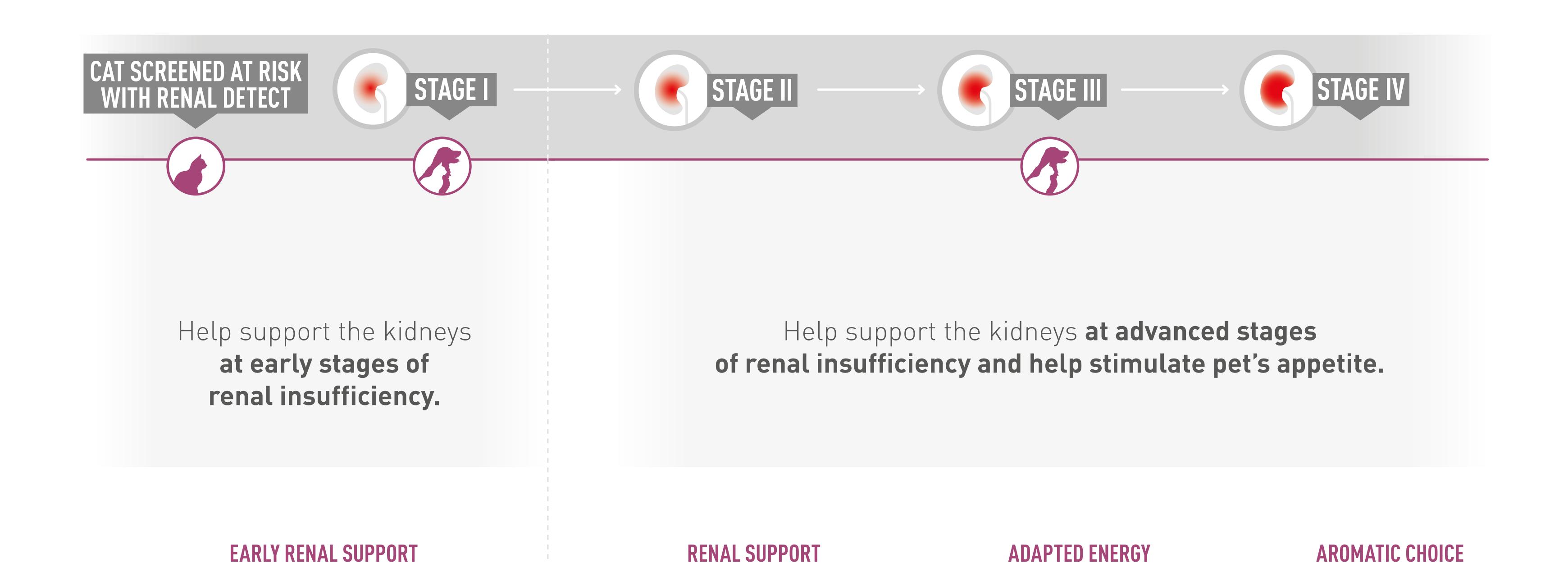
SDMA

SDMA biomarker allows
early detection for cats and dogs
when only 25%
of the kidney is lost^[12,13].



Recent breakthroughs in research and harnessing the power of data now enables Royal Canin to provide a service that detects if cats are at risk of developing CKD within 1 year.







SUPPORT PETS IN THE EARLY STAGES OF CKD

(IRIS Stage 1 without Proteinuria and senior cats over 7 years of age detected at risk of developing CKD)



EARLY RENAL









SUPPORT CATS IN THE ADVANCED STAGES OF CKD

(IRIS Stage 2,3,4 and/or Proteinuria)



MULTIPLE CONDITIONS

IN CASES OF TUBE-FEEDING





Different aromatic profiles and textures to support your pet's appetite



SUPPORT DOGS IN THE ADVANCED STAGES OF CKD

(IRIS Stage 2,3,4 and/or Proteinuria)



MULTIPLE CONDITIONS

IN CASES OF TUBE-FEEDING





Different aromatic profiles and textures to support your pet's appetite



ADDRESS FOOD AVERSION AND LOSS OF APPETITE

With a wide range of renal diets, including several aromatic profiles along with kibble texture, shape and size adaptations, that can help stimulate decreased appetites and deliver optimum food acceptance and compliance

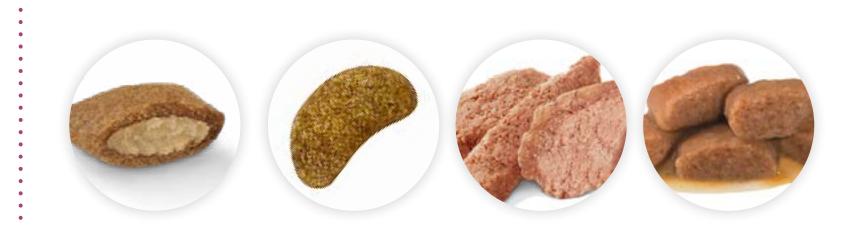
DIFFERENT AROMATIC PROFILE

As an animal's first impression of a diet is formed by their nose,

the RENAL diets have been developed to each have a unique aromatic profile.



DIFFERENT TEXTURE AND KIBBLE SHAPE & SIZE



With the same nutritional performance.





Each RENAL diet can be fed independently, or wet and dry foods can be combined

for a total of 19 mixed-texture feeding options.

HIGHLY PALATABLE DIETS WITH 91% SATISFACTION^[20]

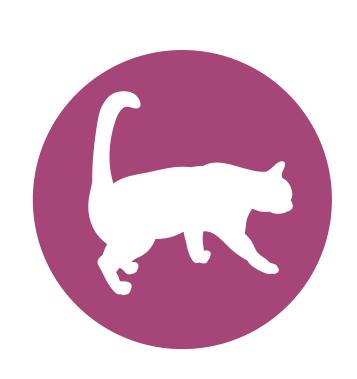


MOBILITY SUPPORT. GET A HEAD START.

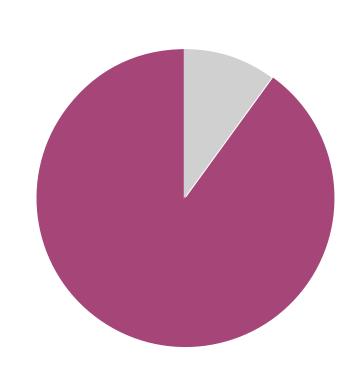
Tailored nutrition to help support healthy joint function for cats and dogs.

PREVALENCE OF MOBILITY DISORDERS





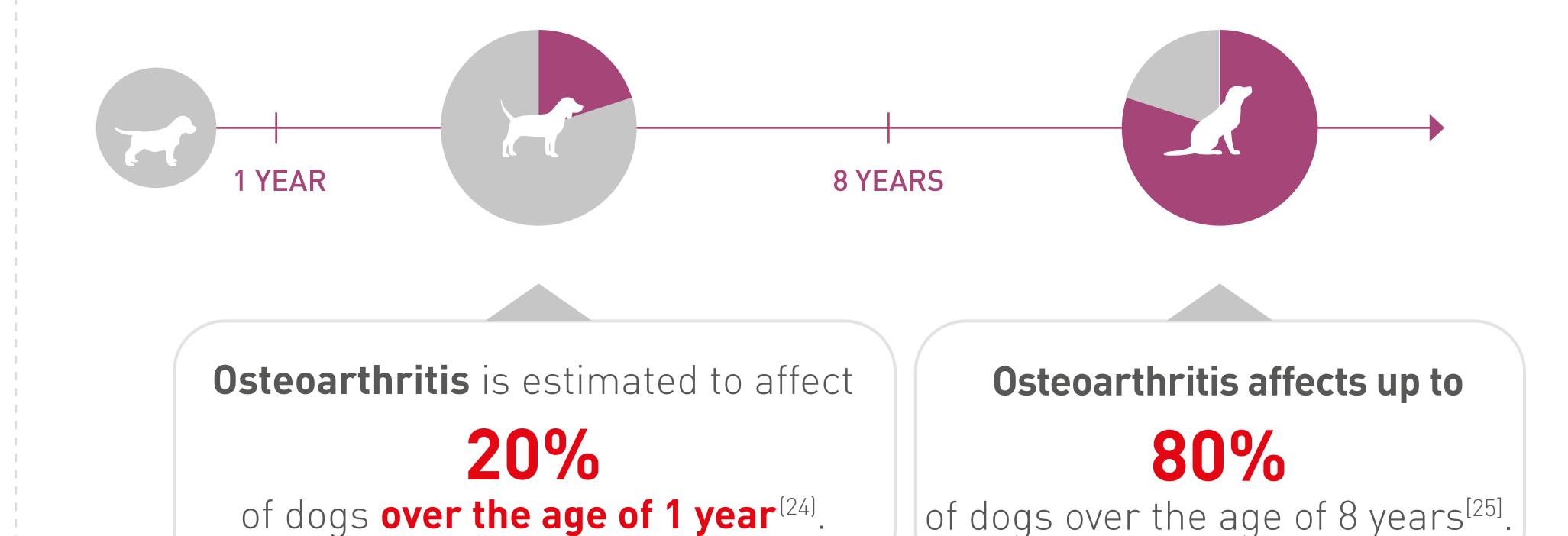
Lameness is rarely exhibited by cats with osteoarthritis [21].



Up to 90% of cats over the age of 12 show radiological signs of osteoarthritis [22].



Osteoarticular issues is the 2nd 2nd affected system after dermatology for large breed dogs of 10 years or older [23].



MOBILITY ISSUES

Joint deterioration is a vicious cycle and signs of arthritis vary greatly from cats to dogs

CLINICAL SIGNS



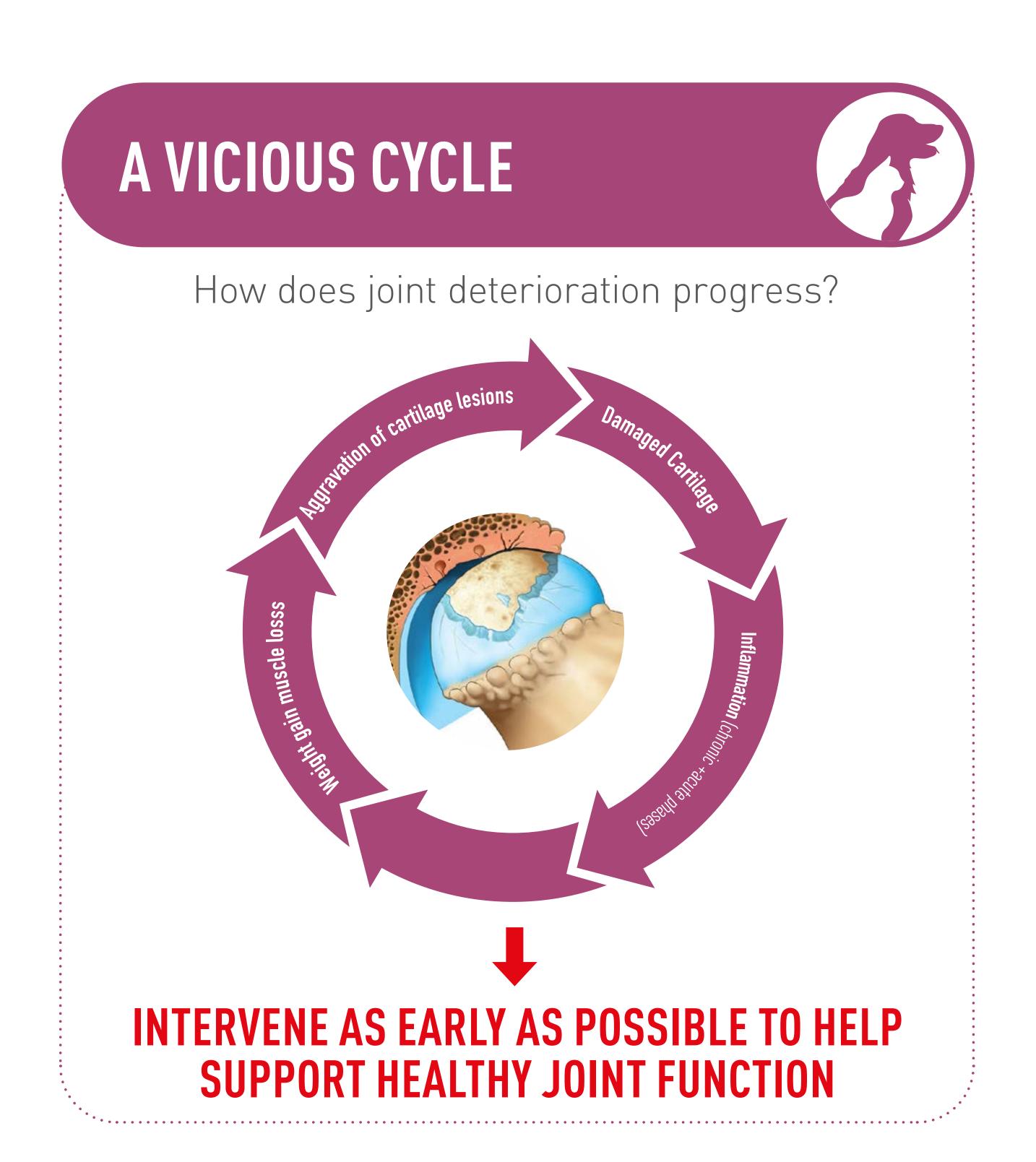
Cats can often hide signs of arthritis or show more subtle signs such as decreased activity, difficulty grooming or changes in normal behaviour.

CLINICAL SIGNS



The most common signs of arthritis in dogs include:

- mild decrease in activity level
- stiffness when standing up
- limping
- muscle loss
- abnormal gait
- reluctance to jump or climb stairs



EARLY INTERVENTION

Identify those who may be prone to joint sensitivities and intervene early by recommending a nutritional solution to help support healthy joint function

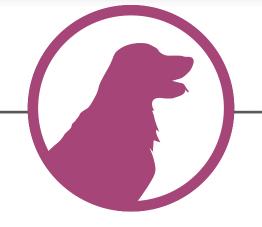
JOINT SENSITIVITIES



Pets which may be more prone to joint sensitivities include:

- Very active pets
- Ageing pets
- Large breeds
- Overweight pets
- Breeds more prone to joint sensitivities



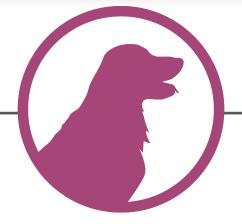


A UNIQUE COMBINATION OF NUTRIENTS

Help support healthy cartilage and joint function







NUTRITIONAL SOLUTIONS

MOBILITY SUPPORT





JOINT COMPLEX OMEGA-3 MODERATE CALORIE

NUTRIENT COMBINATION

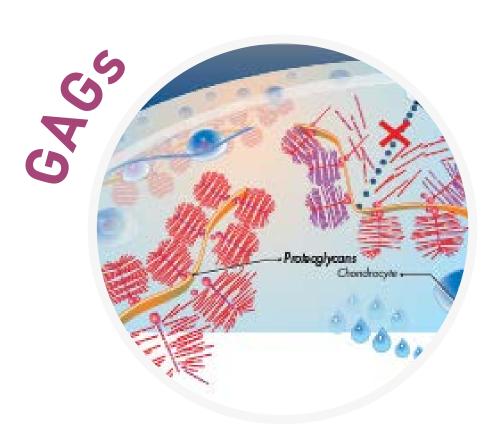


A UNIQUE COMBINATION OF NUTRIENTS

Help support healthy cartilage and joint function







SCIENTIFICALLY PROVEN

A study published in 2010*
shows the synergistic effect of the three compounds in supporting mobility in cats.

Lascelles BDX, DePuy V, Thomson A, Hansen B, Marcellin-Little DJ, Biourge V, Bauer JE.
 Evaluation of a therapeutic diet for feline degenerative joint disease. J Vet Int Medicine 2010, 24, 487-495..



NUTRITIONAL SOLUTIONS

MOBILITY





MOBILITY SUPPORT

JOINT COMPLEX

ANTIOXIDANT COMPLEX

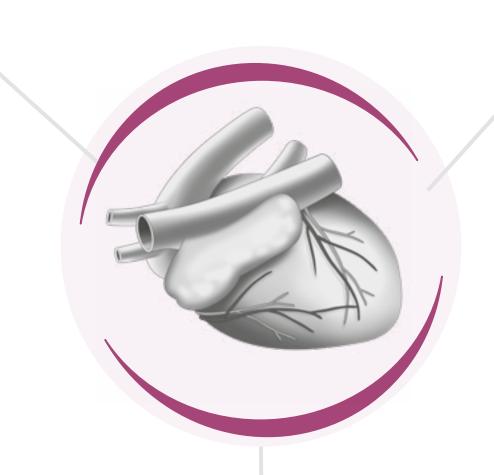


CARDIAC SUPPORT. GET A HEAD START.

Tailored nutritional solutions to support dogs heart function.

HEART FAILURE

Mitral valve regurgitation affects up to 30% of dogs⁽²⁾.



75%

of heart disease developed are associated with

valvular conditions[32].



There are a number of clinical signs of heart disease in dogs including:

- fatigue
- difficulty breathing
 (especially during play or exercise)
- coughing
- fainting
- weight loss
- dental disease

Heart conditions affect 11%

of the dog population, when all ages combined⁽²⁾.



Nearly 4 in 5 dog owners are not aware that vomiting, dental disease or weight loss can be associated with heart disease and almost half (49%) of dog owners are not aware that ageing can also be associated with heart disease^[10].

NUTRITIONAL SOLUTION











- Support cardiac function
- Help to reduce the workload on the heart
- Help maintain ideal bodyweight

CARDIAC SUPPORT

EPA + DHA

LOW SODIUM

VET FOCUS: ONLINE EXPERT CONTENT

The worldwide journal for the companion animal veterinarian



PRESENTATION

ARTICLES

ISSUES

THE AUTHORS

E-LEARNING

VIDEOS

Home

Latest articles



Issue 30.1 - July 2020

Front line ultrasound imaging of the feline kidney

Vital Support

r: Gregory Lisciandro

nd machine, using it for selected imaging of ases; in this paper Greg Lisciandro discusses actured approach to abdominal scanning can be clinician's first-line physical exam, and tes how this can help rapid identification of malities and related problems.



Issue 30.1 - July 2020

Protein restriction for cats with chronic kidney disease

Vital Support

Authors: Nick Cave, Meredith J. Wall

Feeding protein-restricted diets to cats with kidney disease has been a mainstay of the therapeutic approach to such cases for many decades, but controversies still remain; Meredith Wall and Nick Cave review the current state of knowledge and offer some advice for the clinician.

Most read articles

Grain-free diets - good or bad?

Issue 28.3 - November 2018

The water requirements and drinking habits of cats

Issue 28.3 - November 2018

Feeding behavior in cats

Issue 28.3 - November 2018

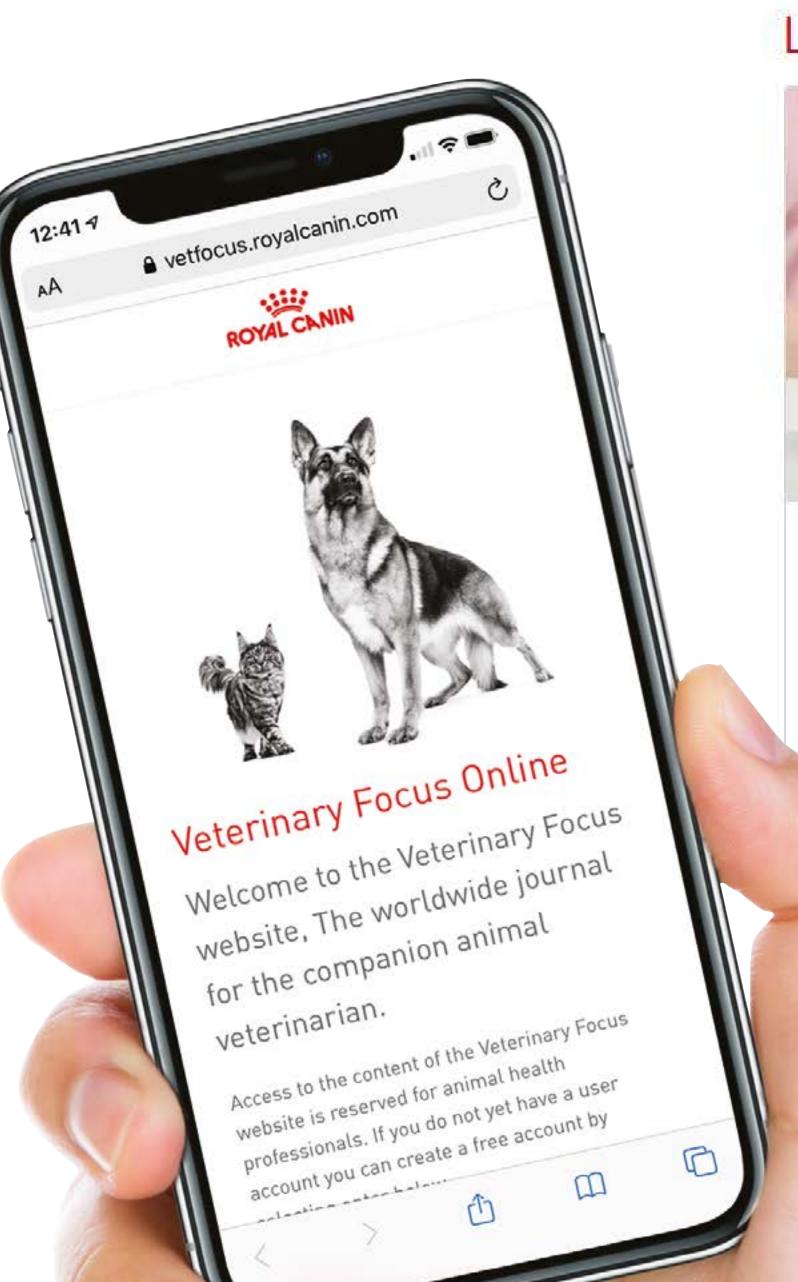
Emergency care for kittens

Issue 29.1 - March 2019

Feline feeding toys

Issue 29.1 - March 2019

Feline infectious peritonitis



VITAL SUPPORT. GET A HEAD START.



References

- 1. Sparkes AH & al. ISFM Consensus Guidelines on the Diagnosis and Management of Feline Chronic Kidney Disease. J Feline Med Surg. 2016 Mar; 18(3): 219-39.
- 2. Buchanan JW. Prevalence of cardiovascular disorders In: Fox PR, editor; Sisson D, editor; Moise NS, editor. eds. Textbook of Canine and Feline Cardiology. Philadelphia: Saunders, W.B.; 1999:457–470.
- 3. Lascelles, BDX and al Journal of Veterinary Internal Medicine 2007; 21: 410-6.
- 4. Survey commissioned by IDEXX Laboratories, Inc., and conducted by Wakefield Research in May 2019 with 1,019 U.S. and 500 Canadian pet owners who brought their pet to the veterinarian for a wellness visit within the last year. Data on file at IDEXX Laboratories, Inc., and conducted by Wakefield Research in May 2019 with 1,019 U.S. and 500 Canadian pet owners who brought their pet to the veterinarian for a wellness visit within the last year. Data on file at IDEXX Laboratories, Inc., and conducted by Wakefield Research in May 2019 with 1,019 U.S. and 500 Canadian pet owners who brought their pet to the veterinarian for a wellness visit within the last year.
- 5. Ghys, L., Paepe, D., Lefebvre, H., Delenghe, J., Daminet, S. (2014). Cystatin C: A New Renal Marker and Its Potential Use in Small Animal Medicine. Journal of Veterinary Internal Medicine, 28(4): 1152 1164.
- 6. Markovich JE & al. Survey of dietary and medication practices of owners of cats with chronic kidney disease. J Feline Med Surg. 2015 Dec; 17(12): 979-83.
- 7. O'Neill DG & al. Longevity and mortality of cats attending primary care veterinary practices in England. J Feline Med Surg 2015; 17: 125–133.
- 8. Brown SA. Renal dysfunction in small animals. The Merck Veterinary Manual website. Updated October 2013
- 9. O'Neill DG, Elliott J, Church DB, McGreevy PD, Thomson PC, Brodbelt DC. Chronic kidney disease in dogs in UK veterinary practices: prevalence, risk factors, and survival. J Vet Intern Med. 2013 Jul-Aug;27(4):814-21
- 10. Banfield Pet HospitalTM, State of Pet Health Report 2012
- 11. Elliott, J., et al. (2000). Survival of cats with naturally occurring chronic renal failure: effect of dietary management. J Small Anim Pract 41(6): 235-242
- 12. Nabity, M.B., Lees, G.E., Boggess, M.M., Yerramilli, M., Obare, E., Yerramilli, M., Obare, E., Yerramilli, M., Rakitin, A., Aguiar, J., Relford, R. (2015). Symmetric Dimethylarginine Assay Validation, Satability, and Evaluation as a Marker for the Early Detection of Chronic Kidney Disease in Dogs. Journal of Veterinary Internal National Na
- 13. Hall JA, Yerramilli M, Obare E, Yerramilli M, Jewell DE. Comparison of serum concentrations of symmetric dimethylarginine and creatinine as kidney function biomarkers in cats with chronic kidney disease. J Vet Intern Med. 2014; 28(6): 1676–1683.
- 14. Hall JA, Yerramilli M, Obare E, Yerramilli M, Almes K, Jewell DE. Serum concentrations of symmetric dimethylarginine and creatinine in dogs with naturally occurring chronic kidney disease. J Vet Intern Med. 2016; 30(3):794–802.
- 15. Hall JA, Yerramilli M, Obare E, Yerramilli M, Yu S, Jewell DE. Comparison of symmetric dimethylarginine and creatinine as kidney function biomarkers in healthy geriatric cats fed reduced protein foods enriched with fish oil, L-carnitine, and medium-chain triglyce-rides. Vet J. 2014; 202(3): 588–596. Hall JA, Yerramilli M, Obare E, Yerramilli M, Melendez LD, Jewell DE. Relationship between lean body mass and serum renal biomarkers in healthy dogs. J Vet Intern Med. 2015;29(3):808–814.
- 16. Nabity MB, Lees GE, Boggess M, et al. Symmetric dimethylarginine assay validation, stability, and evaluation as a marker for early detection of chronic kidney disease in dogs. J Vet Intern Med. 2015; 29(4): 1036–1044.
- 17. Hall JA, Yerramilli M, Obare E, Yerramilli M, Yu S, Jewell DE. Comparison of serum concentrations of symmetric dimethylarginine and creatinine as kidney function biomarkers in cats with chronic kidney disease. J Vet Intern Med. 2014; 28(6): 1676-1683.
- 18. An artificial neural network-based model to predict chronic kidney disease in aged cats; Biourge V. et al.; submitted JVIM.
- 19. Royal Canin internal study.
- 20. Sagols E. et al, The phenomena of food disinterest and aversion in cats with CKD: CLINICAL EVALUATION OF ROYAL CANIN RENAL OFFER, 2014.
- 21. Bennett D, Zainal Ariffin SM, Johnston P. Osteoarthritis in the cat: 1. how common is it and how easy to recognise? J Feline Med Surg. 2012 Jan;14(1):65-75.
- 22. Hardie, EM and al. Journal of the American Veterinary Medical Association 2002; 220: 628-32.
- 23. Banfield Pet HospitalTM, State of Pet Health Report 2014.
- 24. Johnston SA (1997) Osteoarthritis Joint anatomy, physiology and pathobiology. Vet clin North Am small anim Pract 27: 699-723.
- 25. Anderson KL, O'Neill DG, Brodbelt DC, Church DB, Meeson RL, Sargan D, Summers JF, Zulch H & Collins LM. Prevalence, duration and risk factors for appendicular osteoarthritis in a UK dog population under primary veterinary care. Sci Rep. 2018; 8: 5641.
- 26. Henrotin Y et al. Biological actions of curcumin on articular chondrocytes. Osteoarthritis and Cartilage; 19 (2011); 1-21. / Strimpakos and Sharma, 2008. / Gupta et al. Therapeutic roles of curcumin: lessons learned from clinical trials. AAPS J. 2013 Jan; 15(1): 195-198. / Prasad et al. Therapeutic roles of curcumin: lessons learned from clinical trials.
- 27. Walrand S, Chiotelli E et al. Consumption of a functional fermented milk containing collagen hydrolysate [...]. J Agric Food Chem. 2008; 56 (17): 7790-5. / Ohara H, Iida H et al. Effects of Pro-Hyp, a collagen-hydrolysate-derived peptide, [...]. Biosci Biotechnol Biochem. 2010; 74 (10): 2096-9. / A.C. Beynen, 2 H.W. Van Geene, 2 H.V. Grim, 2 P. Jacobs and 2 T. Van der Vlerk Oral Administration of Gelatin Hydrolysate Reduces Clinical Signs of Canine Osteoarthritis in a Double-Blind, Placebo-Controlled Trial American Journal of Animal and Veterinary Sciences 5 (2): 102-106, 2010.
- 28. Comblain, F., Barthélémy, N., Lefèbvre, M., Schwartz, C., Lesponne, I., Serisier, S., Feugier, A., Balligand, M., Henrotin, Y. (2017). 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 Veterinary Research, 13: 395.
- 29. Flanagan J et al. Success of a weight loss plan for overweight dogs: the results of an international weight loss study. PLoS One 2017; 12(9): e0184199.
- 30. Bauer, John E. 2011. "Therapeutic Use of Fish Oils in Companion Animals." Journal of the American Veterinary Medical Association 239 (11) (December 1): 1441–1451.
- 31. Lascelles, B.D.X., DePuy, V., Thomson, A., Hansen, B., Marcellin-Little, D.J., Biourge, V., Bauer, J.E. (2010). Evaluation of a therapeutic diet for feline degenerative joint disease. Journal of Vet Int Medicine, 24 (3): 487-495.
- 32. Keene, BW, Atkins, CE, Bonagura, JD, et al. ACVIM consensus guidelines for the diagnosis and treatment of myxomatous mitral valve disease in dogs. J Vet Intern Med. 2019; 33: 1127–1140.