

# The evidence supporting Preventive Care

## The Australian Veterinary Association

The Australian Veterinary Association has prepared these standards to support veterinarians in offering the highest standard of care to their patients. Regular health checks are one of the building blocks of companion animal practice and are an essential component of responsible pet ownership.

The Australian Veterinary Association believes that owners should be advised of the best available care as set out in these standards.

Available at [https://www.ava.com.au/sites/default/files/AVA\\_website/ASAVA/ASAVA\\_StandardsOfCare\\_Web.pdf](https://www.ava.com.au/sites/default/files/AVA_website/ASAVA/ASAVA_StandardsOfCare_Web.pdf)

	Juvenile		Adolescent		Adult		Senior		Geriatric	
	Cat	Dog	Cat	Dog	Cat	Dog	Cat	Dog	Cat	Dog
Physical examination	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temp pulse respiration	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Body condition score (1-9)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dental grade (0-4)			✓	✓	✓	✓	✓	✓	✓	✓
Pain assessment (0-10)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Diet discussion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Vaccination discussion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Blood pressure					✓	✓	✓	✓	✓	✓
Haematology and biochemistry			✓	✓	✓	✓	✓	✓	✓	✓
Urinalysis	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Thyroid levels					✓	✓	✓	✓	✓	✓
Faecal testing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Giardia testing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Flea control discussion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tick control discussion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Heartworm discussion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Git worm control	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pet insurance	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Breed predisposition discussion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Microchip testing / checking	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Behaviour discussion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

## Published Materials

**Australian VETERINARY JOURNAL**  
THE JOURNAL OF THE AUSTRALIAN VETERINARY ASSOCIATION LTD  
SMALL ANIMALS

**Prevalence of clinicopathological changes in healthy middle-aged dogs and cats presenting to veterinary practices for routine procedures**

Dell'Osà and Javerzik<sup>1</sup>

**Objective:** The objective of the present study was to investigate the frequency of abnormal clinicopathological parameters in a population of client-owned clinically healthy middle-aged dogs and cats.

**Materials and methods:** Biochemical and haematological profiles, urinalysis and total T4 were measured in clinically healthy middle-aged dogs (age, 5-9 years) and cats (age, 6-9 years) presenting to veterinary practices for routine procedures.

**Results:** Of the 406 dogs, only 55 had no abnormalities identified in the testing panel. Most changes were minor or considered artificial. However, changes that were diagnostic of significant disease or necessitating additional evaluation were identified in 25 dogs (6.2%). Of the 135 cats, only 20 had no abnormalities identified in the testing panel. Most changes were minor or considered artificial. However, changes diagnostic of significant disease or necessitating additional evaluation were identified in 25 cats (18.5%). Significant abnormalities included anaemia, inflammation and evidence of liver, kidney and pancreatic disease.

**Conclusion:** Biochemical and haematological testing as part of regular preventive health checks may facilitate early detection of disease before they present clinically, allowing earlier intervention and better health outcomes.

As animals age, degenerative diseases become more common, and often, they are difficult to recognise until they are advanced.

In this study of 'healthy' dogs (n=406) and cats (n=125), results revealed only 13.5% of dogs and 20% of cats had no changes, whereas 6.2% of dogs and 19.2% of cats had changes that were considered significant and warranted further investigation. Examples of significant changes include IRIS Stage 2 kidney disease, liver enzymes over five times the upper end of normal or neutropaenia.

Dell'Osà D et al, Australian Veterinary Journal (2016); 94: 317-323

**Journal of Veterinary Internal Medicine**  
Open Access  
Standard Article  
7 Feb Issues Mar 2017;31(3):8-12

**Results of Screening of Apparently Healthy Senior and Geriatric Dogs**

A. Willems, D. Paape, S. Marjanić, P. Smet, I. Van de Muele, P. Plevaet, L. Duchateau, and S. Damme

**Background:** There is a growing interest in health and wellness of elderly dogs.<sup>1-7</sup> Older pets represent 30-40% of patients in general practice and this proportion is likely to increase in the future as dogs live longer.<sup>8-11</sup> This age group has specific needs and it is more prone to develop chronic illness.<sup>12</sup> Often, initial clinical signs are vague and difficult to recognise for the owner,<sup>13</sup> or dismissed as not important or "normal for his age."<sup>14</sup> Veterinary healthcare guidelines for different life stages have been developed.<sup>15</sup> The goal of these programs is to improve

**Objective:** To describe metabolic, blood pressure (BP), and results of physical examination and laboratory tests in senior and geriatric dogs that were judged by the owner to be healthy.

**Animals:** Healthy client-owned dogs.

**Methods:** Dogs were prospectively recruited. Owners completed a questionnaire. BP measurement, physical, orthopedic and neurologic examination, direct fecalography and Schirmer tear test were performed. Complete blood count, serum biochemistry, and urinalysis were evaluated.

**Results:** Forty-two senior and 10 geriatric dogs were included. Mean SBP was 170 ± 30 mmHg, and 11 dogs had SBP > 160 mmHg. Thirty-two animals were overweight. A heart murmur was detected in 22, severe calculus in 23 and 3 or more malocclusions were seen in 16 dogs. Thyroidine dogs had increased serum creatinine, 29 hyperphosphatemia, 27 increased ALP, 27 increased ALT, and 23 leukopenia. Crystalluria, mostly ammonium crystals, was commonly detected (62%). Other metabolic and hematology parameters were abnormal in 37 and 88 of 97 dogs, respectively. Four dogs had a positive urine culture. Frequency of orthopedic problems, frequency of osteoarthritis lesions, and glaucoma onset were significantly higher in geriatric compared with senior dogs. Body temperature, hematocrit, white albumin, and serum total protein concentrations were significantly lower in geriatric compared with senior dogs.

**Conclusion and Clinical Importance:** Physical and laboratory abnormalities are common in apparently healthy elderly dogs. Veterinarians play a key role in implementing health screening and improving health care for elderly pets.

**Key words:** Appropriate reference interval, Blood pressure, Canine, Creatinine ratio, Elderly dogs, Urinary protein.

**Abbreviations:**  
ALP alkaline phosphatase  
ALT alanine aminotransferase  
BUN body-urea-nitrogen  
BW body weight  
CBC complete blood count  
Hb high hemoglobin  
MCV mean corpuscular volume  
PCV packed cell volume  
RBC red blood cells

In this study of 100 dogs (41 senior and 51 geriatric) that the owners perceived as healthy, a significant number of laboratory abnormalities were detected including azotaemia, elevated liver enzymes and proteinuria.

Willems A et al, Journal of Veterinary Internal Medicine (2017); 31: 81-92

**ORIGINAL ARTICLE**  
Journal of Feline Medicine and Surgery (2013) 15, 8-19

**ROUTINE HEALTH SCREENING Findings in apparently healthy middle-aged and old cats**

**Objective:** Veterinary practitioners often perform geriatric health screening in cats. Little is known, however, regarding central and laboratory abnormalities and normal blood pressure values in elderly cats in practice. This prospective study evaluated routine health screening tests in apparently healthy middle-aged and old cats.

**Animals:** One hundred cats of 8 years and older underwent blood pressure measurement, physical examination, blood and urine analyses, indirect ophthalmoscopy and ultrasonic echocardiography.

**Results:** Mean systolic blood pressure (SBP) was 133.6 ± 29.3 mmHg. Increased SBP (>160 mmHg) was observed in eight cats, subnormal heart rate (<60 bpm) in 12, heart murmur in 11, thyroid glands in 20, increased creatinine in 26, hyperphosphatemia in 28, increased total protein in 39, leukopenia in 49, leukocytosis in 29 and neutropenia in 16. Mean tear production was very similar for both eyes and none of the cats had ocular lesions secondary to hypertension.

**Clinical significance:** Old cats (>9 years) had significantly higher SBP, heart rate, murmur frequency, thrombocyte count, urea, creatinine, creatinine ratio and serum urea and protein concentrations, and significantly lower body condition score, hematocrit, albumin and total protein concentrations than middle-aged cats (8-10 years). The common occurrence of albuminuria and laboratory abnormalities in apparently healthy old cats underlines the need for regular health checks and the development of age-dependent laboratory reference intervals.

In the past few decades, the expected life span of pet cats in Europe and the United States has increased and the population of senior and geriatric cats has grown exponentially. Old cats are susceptible to many chronic diseases and similar care guidelines have been developed to improve early disease detection and promote longevity and quality of life.

In this study of 100 cats (56 middle aged and 44 old) that the owners perceived as healthy, a significant number of laboratory abnormalities were detected including azotaemia and proteinuria.

Paape D et al, Journal of Feline Medicine and Surgery (2013); 15: 8-19.



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