

Report from the Kennel Club/
British Small Animal Veterinary Association
Scientific Committee

Summary results of the
Purebred Dog Health Survey
for Boxers

Warning: The results of this survey and particularly the breed-specific analyses should be interpreted with caution. The overall response rate was only 24% with breed-specific response rates from 4.5% to 64.7%.

Boxers

A total of 450 forms were sent out and 68 were returned, representing 249 live dogs. This breed had a 15.1 % response rate (68/450) and it represented 0.49% of all returns (68/13,741).

Mortality data

A total of 130 deaths were reported and this represents 0.82 % of all deaths reported in the survey (130/15,881). The median age at death for Boxers was 10 years and 3 months (min = 4 months, max = 15 years and 3 months) and this was lower than the overall median of 11 years and 3 months (Figure 1). Table 1 shows the causes of death for Boxers. Age at death is presented for the most common causes of death (Figure 2).

Table 1. Causes of death by organ system/category for Boxers.

Cause of death	N	%	Most common specific causes in descending order
1 Cancer	50	38.5	Brain tumour; lymphoma; unspecified
2 Old age	28	21.5	Old age
3 Cardiac	9	6.9	Heart failure; heart attack; heart disease unspecified
4 Gastrointestinal	9	6.9	GDV; megaoesophagus; pancreatitis
5 Combinations	6	4.6	Kidney & liver failure; multiple organ failure
6 Neurologic	6	4.6	IVDD
7 Cerebral vascular	4	3.1	Stroke or cerebral vascular accident
8 Trauma	3	2.3	Road traffic accident; Spinal injury; unspecified trauma
9 Unknown	3	2.3	
10 Hepatic	2	1.5	Liver failure acute; liver failure chronic or unspecified
11 Behaviour	1	0.8	Aggression
12 Collapse	1	0.8	
13 Died	1	0.8	
14 Endocrine	1	0.8	Cushings or hyperadrenocorticism
15 Musculoskeletal	1	0.8	Arthritis
16 Perioperative	1	0.8	Perioperative or anaesthetic related
17 Reproductive	1	0.8	Prostatic disease
18 Senility	1	0.8	
19 Sudden death	1	0.8	
20 Urologic	1	0.8	Chronic kidney failure chronic
Total	130	100.0	

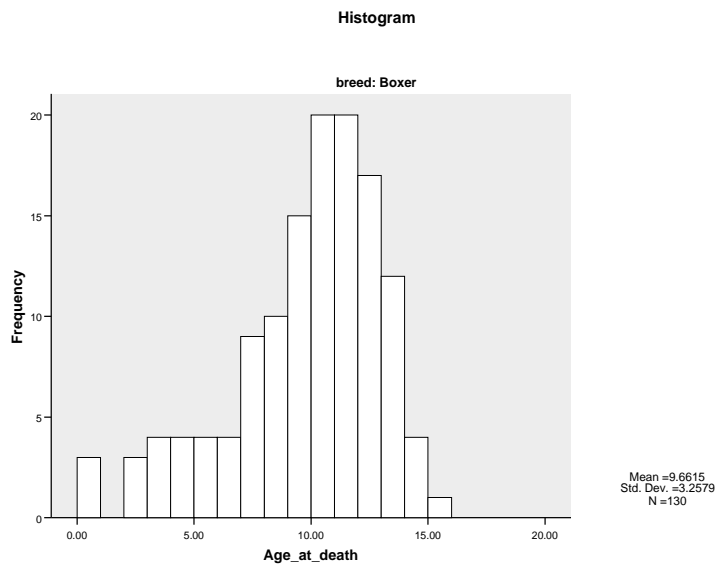


Figure 1. Histogram showing the frequency (as number of dogs) of age at death (in years) for the 130 Boxer deaths with age at death reported.

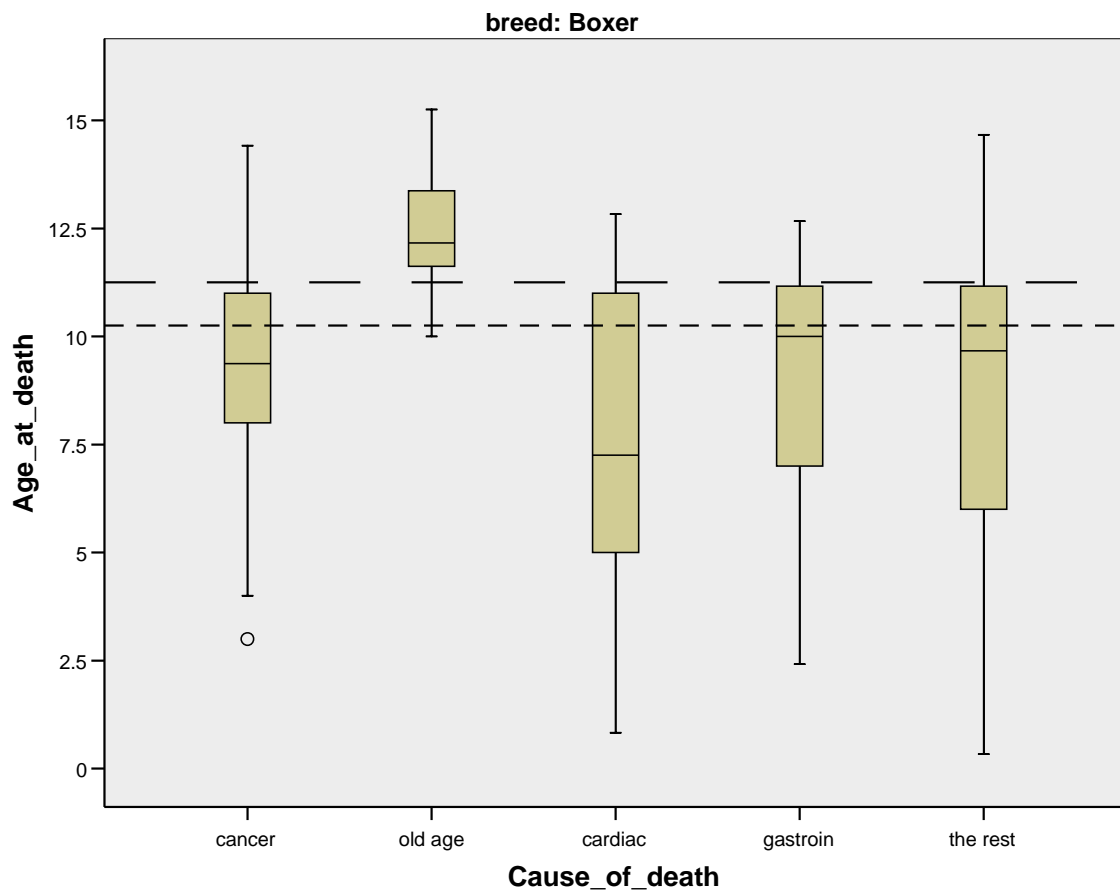


Figure 2. Box and whisker plot of age at death in years for the most common causes of death in Boxers (N=130). The dashed line (---) is the overall median age at death for all dogs in the survey and the dotted line (----) is the overall median age of death for Boxers. The solid line within each grey box represents the median age at death from the condition.

Morbidity data

The median current age of the 249 live dogs with a reported age was 4 years and 5 months (min=1 month, max=13 years and 1 month, Figure 3). Health information was reported for 249 live dogs of which 144 (58%) were healthy and 105 (42%) had at least one reported health condition, resulting in a total of 218 reported conditions with a median of 2 conditions/dog (min=1, max=7).

The median current age of all healthy dogs with a reported age (N=144) was 3 years (min=1 month, max=11 years and 4 months). The distribution of gender and neuter status is shown in Table 2.

The median current age of all dogs with one or more disease conditions and a reported age (N=105) was 6 years and 8 months (min=3 months, max=13 years and 1 month). The median age at diagnosis for all disease occurrences with a reported age at diagnosis (N=206) was 3 years (min= 2 months, max= 12 years and 10 months, Figure 4). Table 3 shows the disease conditions for Boxers. Age at diagnosis is presented for the most common disease conditions (Figure 5).

Table 2. Distribution of gender and neuter status for 249 Boxers with reported gender and neuter status.

Gender	Neuter status		Totals
	Intact	Neutered	
Female	109	38	147 (59%)
Male	85	17	102 (41%)
Totals	194 (78%)	55 (22%)	249 (100%)

There was no association between gender and neuter status (P=0.0858).

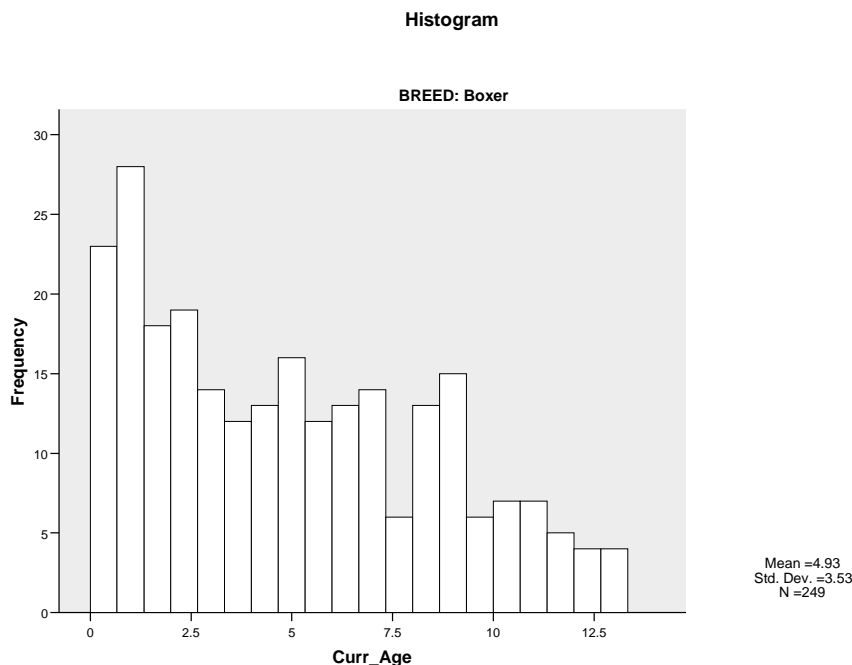


Figure 3. Histogram showing frequency of current age in years for the 249 live Boxers with age reported.

Histogram

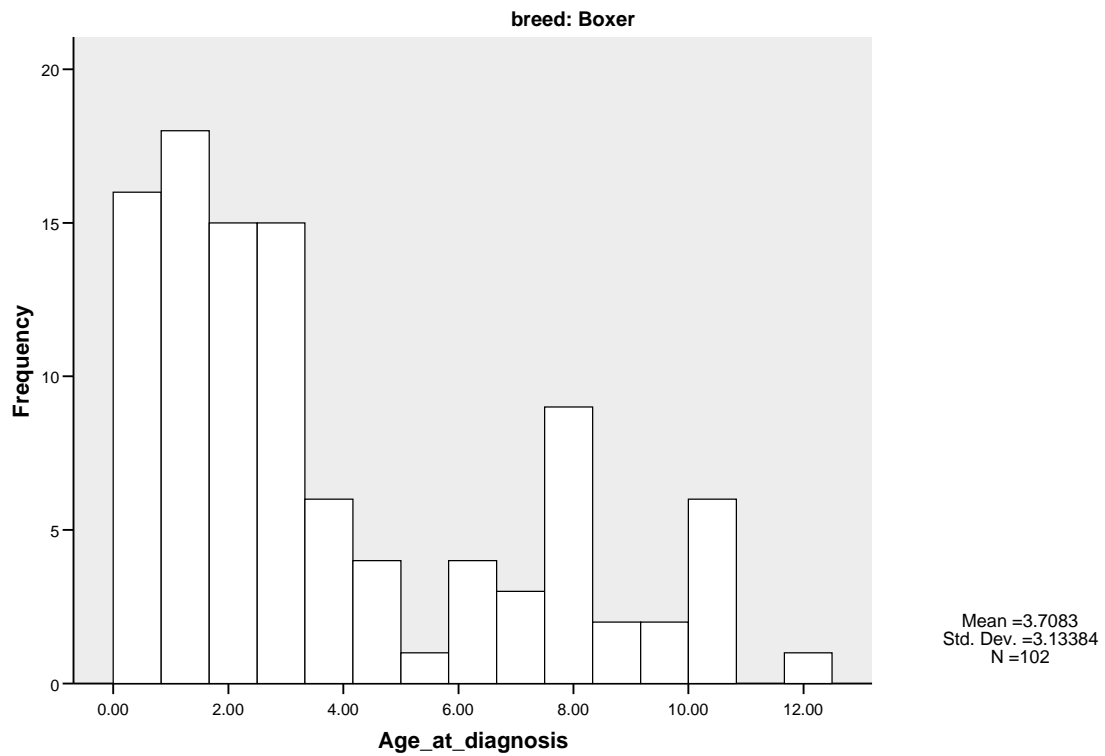


Figure 4. Histogram showing frequency of age at diagnosis for the 102 Boxers with one or more disease conditions, using the youngest age at which a disease condition was first reported for those dogs with more than one disease condition or episode.

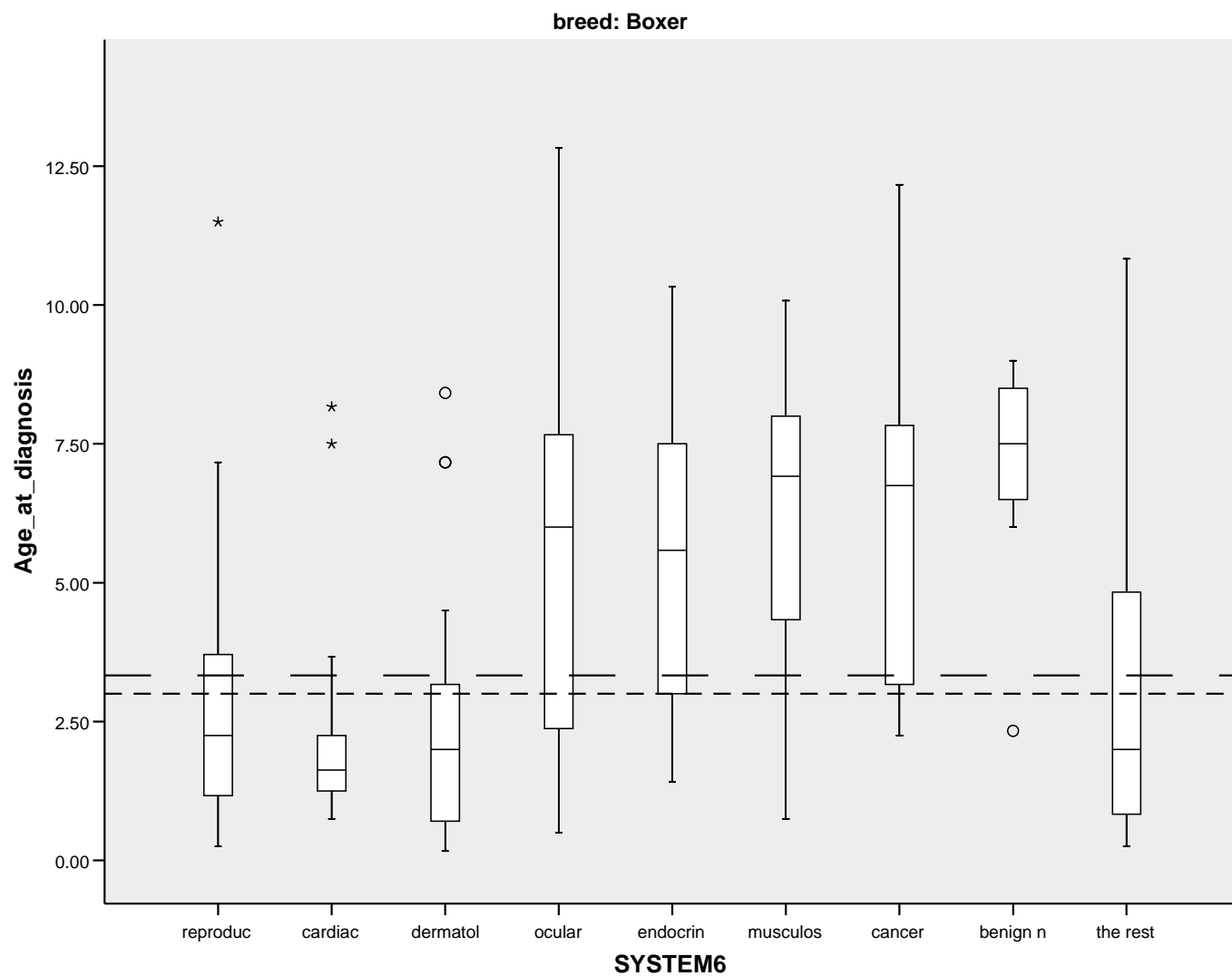


Figure 5. Box and whisker plot of age at diagnosis in years for the most common disease conditions in descending order for Boxers (N=105 dogs with 206 conditions with age reported). The dashed line (---) is the overall median age at diagnosis for all dogs in the survey and the dotted line (----) is the overall median age at diagnosis for Boxers. The solid line within each grey box represents the median age at diagnosis from the condition.

Table 3. Disease conditions by organ system/category for Boxers.

Disease condition	All conditions		Most common specific conditions in descending order
	N	%	
1 Reproductive	29	13.3	False pregnancy; cryptorchid; dystochia (uterine inertia > physical blockage); infertility
2 Cardiac	26	11.9	Heart murmur (grade 1 > grade 2 > unspecified > grade 4 > rest); aortic stenosis
3 Dermatologic	23	10.6	Mites (cheyletiella > demodex > sarcoptes); dermatitis
4 Ocular	20	9.2	Corneal ulcer; entropion; KCS; ectropion; eversion of the cartilage of the third eyelid
5 Respiratory	19	8.7	Kennel cough; noisy breathing
6 Endocrine	17	7.8	Hypothyroidism; Cushing's disease
7 Musculoskeletal	17	7.8	Arthritis (hindlimb > others); spondylitis; spondylosis; CLR
8 Gastrointestinal	14	6.4	Colitis; diarrhoea; foreign body obstruction; gastroenteritis; malabsorption; pancreatitis
9 Cancer	13	6.0	Unspecified (skin > mammary); carcinoma; sarcoma
10 Benign neoplasia	11	5.0	Lipoma; unspecified; histiocytoma
11 Immune mediated	8	3.7	Atopy; unspecified; food hypersensitivity
12 Urologic	6	2.8	Cystitis
13 Aural	5	2.3	Otitis externa
14 Neurologic	5	2.3	Seizures; IVDD; deafness
15 Dental	2	0.9	Dental deformity other than extra teeth; dental disease
16 Unknown	2	0.9	Undiagnosed illness
17 Anal gland	1	0.5	Anal sacculitis
Total	218	100.0	