Large Munsterlander Health Survey 2022
Overall Summary

The top five categories of diagnosis for health conditions reported in the survey were 'muscle, bone or joint' (26.3%), 'skin and/or coat' (19.4%), 'digestive' (15.6%), 'cancer or a mass/lump' (15.2%), and 'ear' (14.3%).

Table 1: Top five categories of diagnosis for health conditions reported in the survey

Body system	Number affected	Total dogs	Prevalence
Muscle, bone or joint	173	657	26.3%
Skin and/or coat	118	608	19.4%
Digestive	97	623	15.6%
Cancer or a mass/lump	95	624	15.2%
Ear	89	622	14.3%

The most frequently reported specific conditions were 'environmental allergies' (52 cases), 'arthritis' (45 cases), 'infrequent ear infections' (41 cases), 'elbow dysplasia' (27 cases), 'food allergies/ intolerance' (27 cases), 'sensitive stomach' (27 cases), 'dermatitis' (26 cases), 'frequent ear infections' (25 cases), 'dietary allergies' (24 cases), 'lipoma' (23 cases), and 'unknown allergies' (23 cases).

Table 2: Top specific health conditions reported in the survey

Specific condition	Number affected
Allergies (environmental)	52
Arthritis	45
Ear infections (infrequent)	41
Elbow dysplasia	27
Food allergies/ intolerance	27
Sensitive stomach	27
Dermatitis	26
Ear infections (frequent)	25
Allergies (dietary)	24
Lipoma	23
Allergies (unknown)	23

Large Munsterlander Health Survey 2022

The Large Munsterlander Health Survey ran from 21/01/22 to 15/07/22. After removing all unusable responses (for example, two respondents did not consent to the Large Munsterlander Club and The Kennel Club using the data for research purposes and 42 respondents left all their answers blank) a total of 774 individual responses remained.

After removing deceased Large Munsterlanders, of 603 known ages, the median age was five years and 6 months (min = zero months, max = 18 years and one month). Figure 1 shows a full breakdown of the dogs' known ages in years.
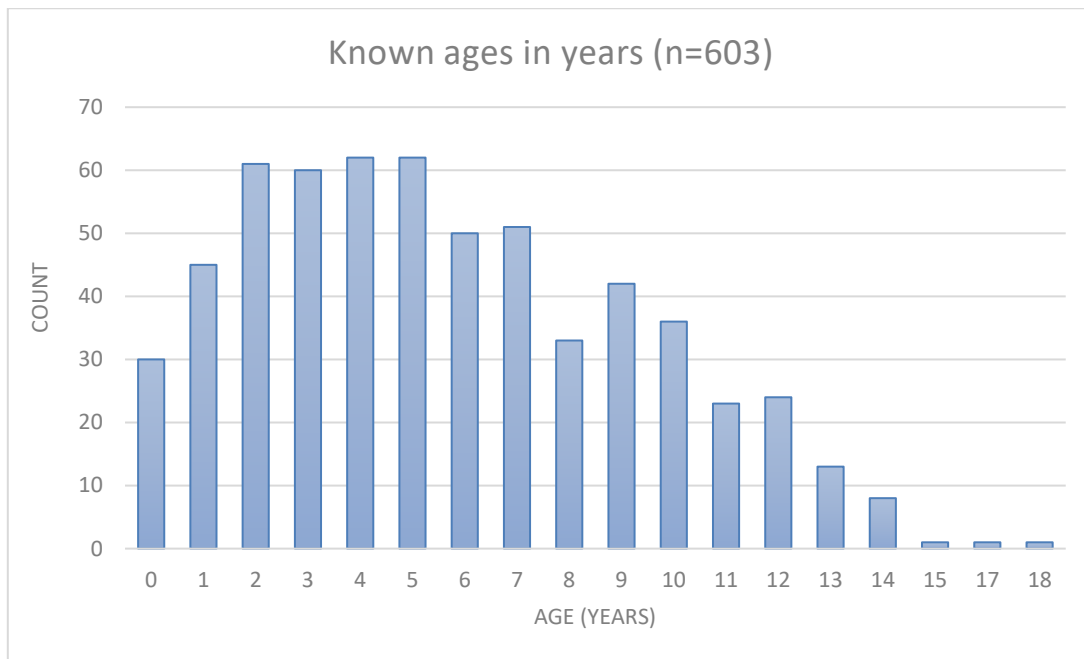

Figure 1: Age of the dogs included in the survey (excluding those reported to be deceased)

When asked the sex of their dog, out of 737 dogs, 399 (54.1%) were male and 338 (45.9%) were female. When asked the neutered status of their dog, out of 719 dogs, 310 (43.1%) were entire and 409 (56.9%) were neutered. Results are shown in Table 3.

**Table 3**: Sex and neutered status of the dogs included in the survey

Sex	Neutered Status			Total
	Entire	Neutered	Not known	
Male	199 (49.9%)	189 (47.4%)	11	399
Female	111 (32.8%)	220 (65.1%)	7	338
Total	310	409	18	737

Of all the dogs included in the survey, the most common colour was black & white (76.8%, 566 of 737). A full breakdown of responses by colour are shown in Figure 2.
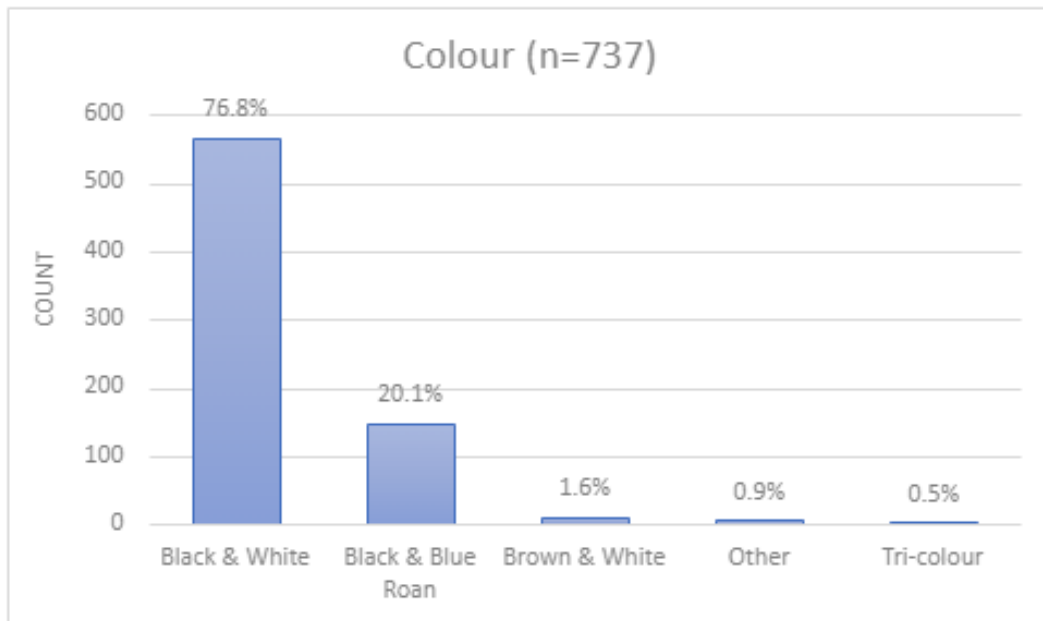
Figure 2: Colour of Large Munsterlanders included in the survey, as reported by their owners

Figure 3 shows where the owners got their Large Munsterlander from, with the majority being from a breeder (89.5%, 693 of 774).
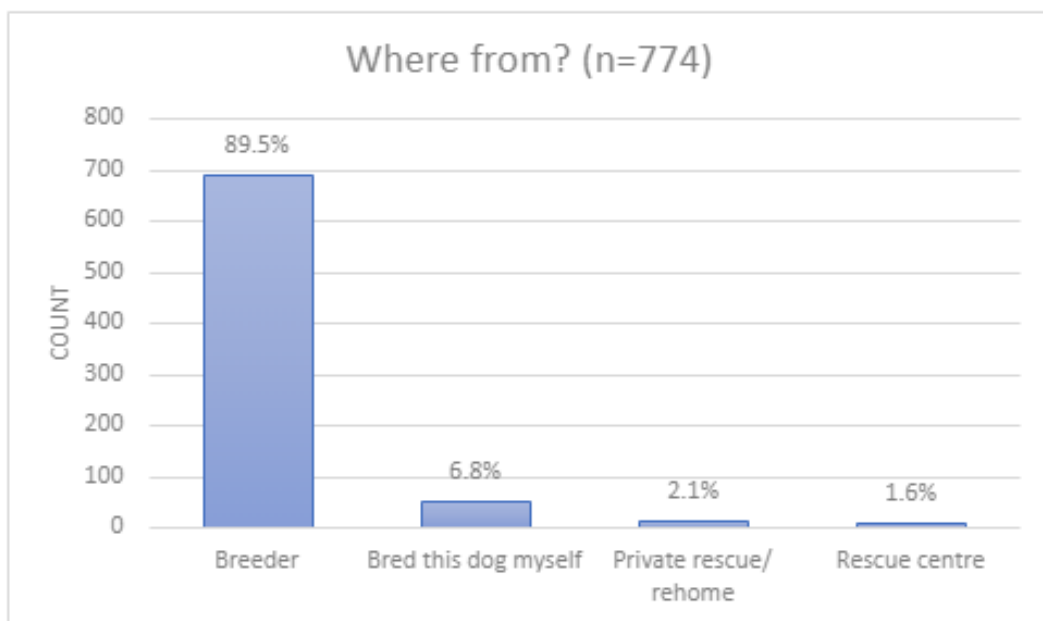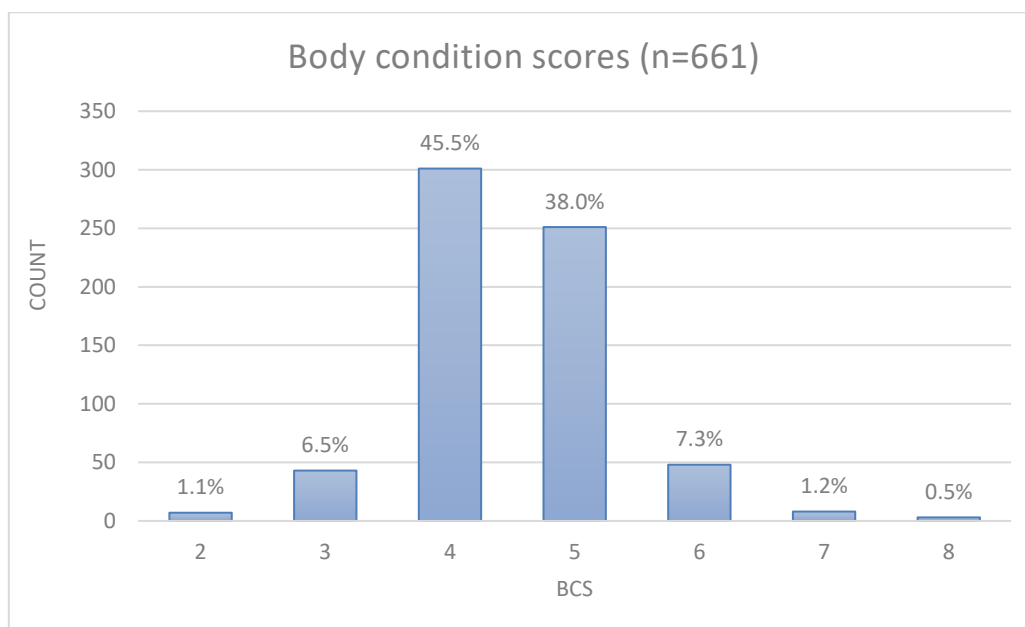

Figure 3: Where the Large Munsterlanders included in the survey were from, as reported in the survey

Of 723 dogs, 666 (92.1%) were Kennel Club (KC) registered and 57 (7.9%) were not KC registered. Of the KC registered dogs, 644 (96.7%) were born in the UK and 22 (3.3%) were imported.

Lifestyle

Of the dogs included in the survey, their median weight was 30kg (range 16kg - 40kg). Of 645 responses, 580 (89.9%) owners reported that their dog's weight was consistent whereas 65 (10.1%) owners reported that their dog's weight fluctuated. Of the dogs included in the survey, the median body condition score (BCS) was 4 (range 2-8), as reported by their owners. Figure 4 shows a breakdown of BCS.

Figure 4: BCS of the dogs included in this survey, as reported by their owners

Table 4 shows how active the Large Munsterlanders included in this survey were considered to be, with the majority considered to be moderately active (47.2%, 324 of 686).

Table 4: Activity levels of Large Munsterlanders included in the survey, as perceived by their owners

| Activity	Number of dogs	Percentage
Highly active	318	46.4%
Moderately active	324	47.2%
Mildly active	41	6.0%
Not at all	3	0.4%
Total	**686**	

When asked if their dog participates in any form of high intensity exercise, out of the 686 responses, 263 (38.3%) answered "Yes" and 423 (61.7%) answered "No". The most frequently reported exercise was hunting (n=124), swimming (n=84), Canicross (n=32), gundog training (n=31), and agility (n=25).

Behavioural issues

When asked if their dog has ever shown signs of a behavioural issue(s), out of the 686 responses, 189 (27.6%) answered "Yes" and 497 (72.4%) answered "No".

For dogs that experienced a sudden change of behaviour, the median age that these dogs had this sudden change in behaviour was 10 years and one month (min: less than one year, max: 14 years). Of 169 dogs, 37 (21.9%) required veterinary intervention. The most frequently reported form of veterinary intervention was a behaviourist referral (n=8) and neutering (n=4).

The total number of individual behavioural issues reported was 333. Of these, the most commonly reported issue was separation anxiety (26.7%, 89 of 333). This was followed by general anxiousness (15.3%), nervousness/ fearfulness (14.7%), aggression (14.1%), and hyperactivity (9.6%). Figure 5 shows a breakdown of reported behavioural issues.
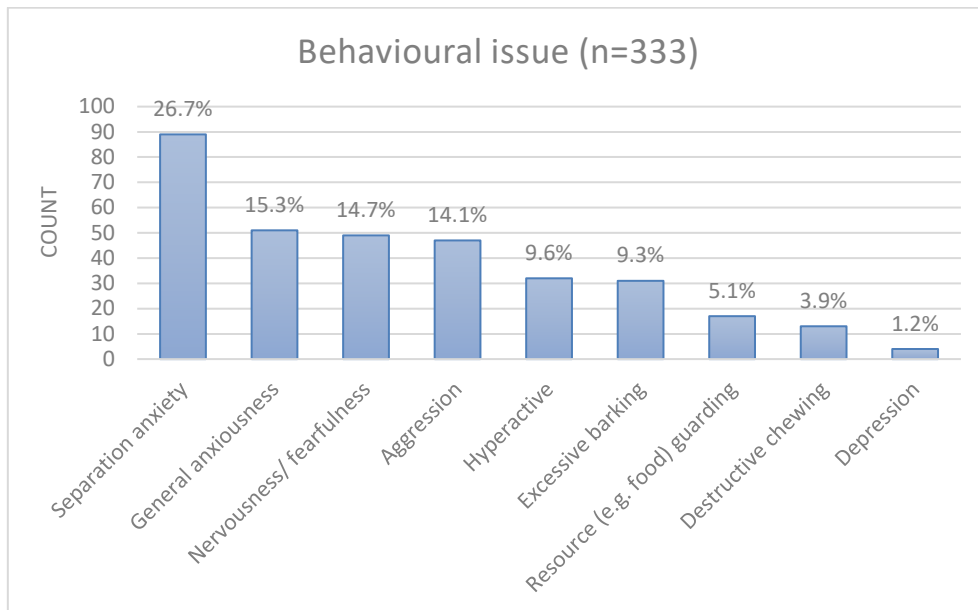
Figure 5: Most frequent behavioural issues, as reported in the survey

The most common answers to "other" for behavioural issues not already listed in the survey were: protective of owners/ home (n=5), aggressive/ reactive towards other dogs (n=4), aggressive/ reactive towards strangers/ children (n=2), dominance (n=2), hysterical/ overstimulated (n=2), and insecurity (n=2).

Health

The survey investigated the number of dogs affected by specific conditions within different categories: 'Breathing', 'Cancer or a Mass/Lump', 'Dental', 'Digestive', 'Ear', 'Eye', 'Haematological', 'Heart', 'Hepatic', 'Hormonal', 'Immunological', 'Kidney and/or Bladder', 'Muscle, Bone or Joint', 'Neurological and/or Spinal', 'Reproductive', and 'Skin and/or Coat'. Within each of these categories, the respondents were given a choice of specific conditions, the choices of "not known" and "other" were also given.

The data collected for Table 5 represents the total number of conditions selected by respondents about their dog. One dog might be affected by more than one condition (e.g., one dog may be affected by both food and environmental allergies) therefore the data often shows more conditions reported per category than number of affected dogs in that category.

The total number of specific conditions reported in this survey was 1,062. Out of the 1,062 specific conditions reported 16.8% were for 'skin and/or coat', 15.9% were for 'muscle, bone or joint', 14.8% were for 'digestive', 10.8% were for 'cancer or a mass/lump', and 10.5% were for 'ear'. The results for each category are given in Table 5.

Table 5: Overall summary of health conditions by body system/ category, as reported in the survey

Body system	Number of dogs affected/ Total number of dogs	Prevalence	Number of specific conditions reported
Muscle, bone or joint	173/ 657	26.3%	169
Skin and/or coat	118/ 608	19.4%	178
Digestive	97/ 623	15.6%	157
Cancer or a mass/lump	95/ 624	15.2%	115
Ear	89/ 622	14.3%	111
Eye	62/ 621	10.0%	60
Neurological and/or spinal	50/ 626	8.0%	62
Reproductive	40/ 609	6.6%	41
Kidney and/or bladder	40/ 624	6.4%	46
Heart	27/ 615	4.4%	36
Dental	24/ 605	4.0%	29
Immunological	18/ 611	2.9%	19
Hormonal	18/ 614	2.9%	17
Breathing	14/ 605	2.3%	13
Haematological	6/ 605	1.0%	6
Hepatic	3/ 605	0.5%	3

Muscle, Bone or Joint Conditions

When asked if their dog has ever suffered from a muscle, bone or joint condition(s), out of the 657 responses, 173 (26.3%) answered "Yes" and 484 (73.7%) answered "No".

The median age that affected dogs started to experience the clinical signs associated with their muscle, bone or joint condition(s) was five years of age (min: less than one year, max: 13 years).

In terms of lifestyle factors, dogs with fluctuated weights had a significantly higher risk of muscle, bone or joint conditions then dogs with consistent weights (OR = 2.16, 95% CI 1.25 – 3.7, p<0.01) as well as dogs that were considered to be mildly active compared to highly active (OR = 8.04, 95% 3.93 – 16.43, p<0.001). This finding is unsurprising given that dogs affected by muscle, bone or joint conditions are likely to be less active due to the associated clinical signs, however the survey did not look at how active these dogs were prior to their diagnosis. *Please be aware that whilst statistical analyses certainly indicate increased odds in the areas analysed, it should be noted that the odds ratio values from this survey are relatively low.*

The total number of individual muscle, bone or joint conditions reported was 169. Of these, the most commonly reported condition was other, which affected 27.2% of the study sample (46 of 169). This was followed by arthritis (26.6%), elbow dysplasia (16.0%), cruciate ligament disease/ cruciate ligament rupture (10.1%), and hip dysplasia (8.3%). Table 6 shows the total number and percentage of dogs affected by each reported muscle, bone or joint condition in descending order.

Table 6: Number and percentage of Large Munsterlanders affected by each specific muscle, bone or joint condition, as reported in the survey

Specific condition	Number affected	Percentage
Other	46	27.2%
Arthritis	45	26.6%
Elbow dysplasia	27	16.0%
Cruciate ligament disease/ cruciate ligament rupture	17	10.1%
Hip dysplasia	14	8.3%
Chronic lameness	8	4.7%
Not known	7	4.1%
Fracture of hindlimb	2	1.2%
Patellar luxation	2	1.2%
Fracture (other)	1	0.6%
Total	**169**	

The most common answers to "other" for muscle, bone or joint conditions not already listed in the survey were: osteochondritis dissecans of the shoulder (n=3) and sprain (n=3).

When asked if they were aware of a particular incident (e.g., fall or injury) that triggered their dog's muscle, bone or joint condition(s), out of the 162 responses, 33 (20.4%) answered "Yes" and 129 (79.6%) answered "No". Figure 6 shows whether the muscle, bone or joint condition(s) symptoms were consistent, intermittent or a one-off.
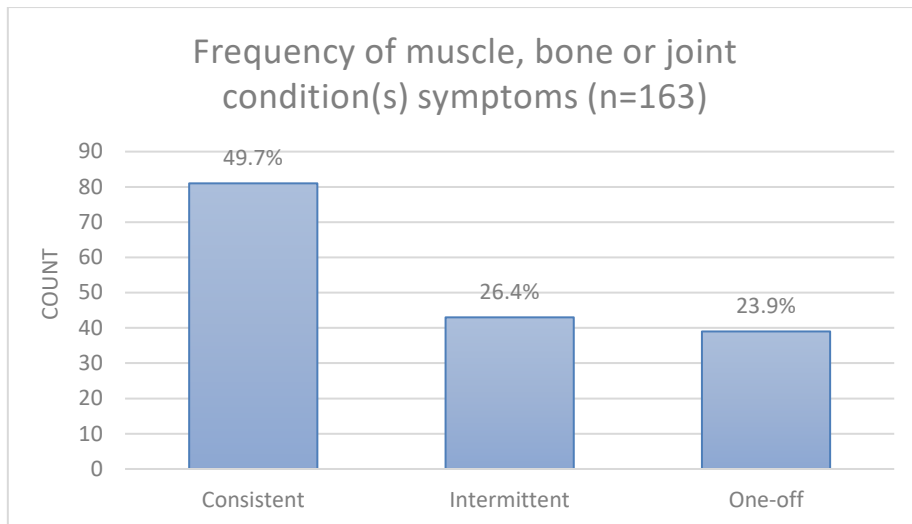
Figure 6: Frequency of muscle, bone or joint condition(s) symptoms, as reported in the survey

The mean age that dogs suffering from arthritis started to experience the clinical signs associated with the condition was 8.4 years of age (min: two years, max: 13 years). Figure 7 shows a breakdown of ages.
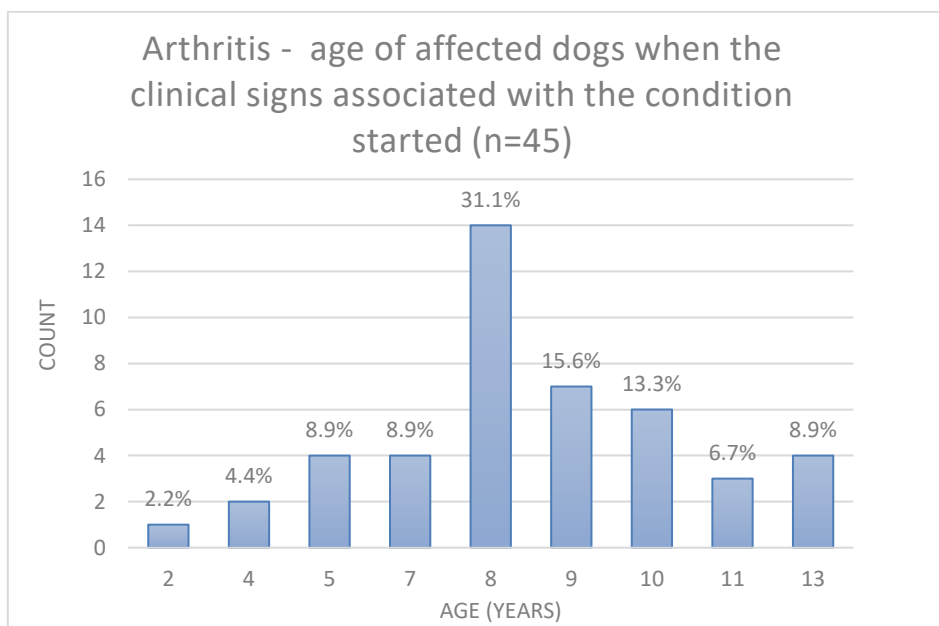
Figure 7: Dog's age when the clinical signs associated with arthritis started, as reported in the survey
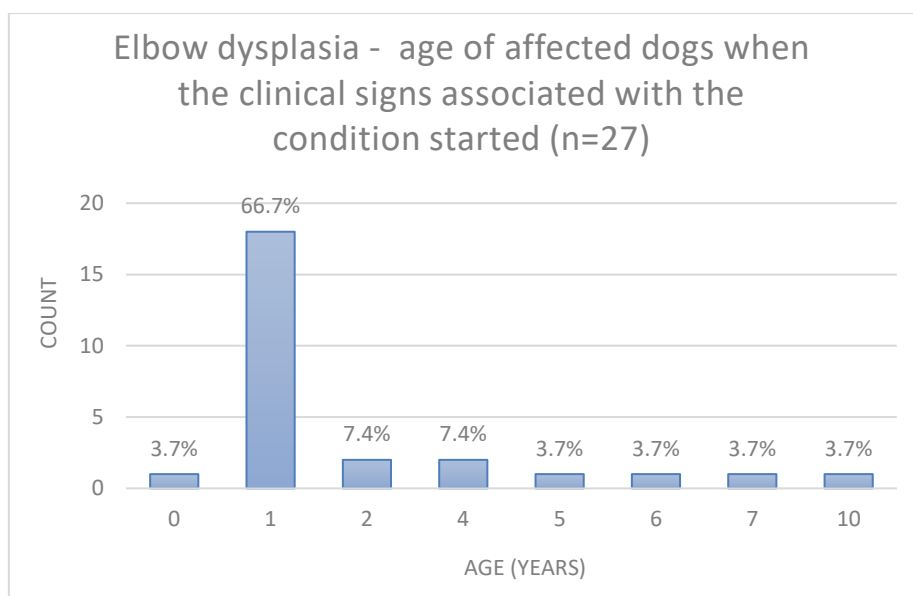
The mean age that dogs suffering from elbow dysplasia started to experience the clinical signs associated with the condition was 2.15 years of age (min: less than one year, max: 10 years). Figure 8 shows a breakdown of ages.

Figure 8: Dog's age when the clinical signs associated with elbow dysplasia started, as reported in the survey

Skin and/or Coat Conditions

When asked if their dog has ever suffered from a skin and/or coat condition(s), out of the 608 responses, 118 (19.4%) answered "Yes" and 490 (80.6%) answered "No".

The median age that affected dogs started to experience the clinical signs associated with their skin and/or coat condition(s) was two years of age (min: less than one year, max: 13 years).

The total number of individual skin and/or coat conditions reported was 178. Of these, the most commonly reported condition was environmental allergies, which affected 29.2% of the study sample (52 of 178). This was followed by dermatitis (14.6%), dietary allergies (13.5%), and unknown allergies (12.9%). Table 7 shows the total number and percentage of dogs affected by each reported skin and/or coat condition in descending order.

Table 7: Number and percentage of Large Munsterlanders affected by each specific skin and/or coat condition, as reported in the survey

Specific condition	Number affected	Percentage
Allergies (environmental)	52	29.2%
Dermatitis	26	14.6%
Allergies (dietary)	24	13.5%
Allergies (unknown)	23	12.9%
Allergies (fleas/ mites)	12	6.7%
Other	12	6.7%
Not known	8	4.5%
Pyoderma	6	3.4%
Hair loss	5	2.8%
Pyotraumatic dermatitis	5	2.8%
Skin cysts	4	2.2%
Demodectic/ sarcoptic mange	1	0.6%
Total	**178**	

The most common answers to "other" for skin and/ or coat conditions not already listed in the survey were: skin infection (n=2), eczema/ skin inflammation (n=2), shedding of coat (n=2), and smelly fungal condition (n=2).

Digestive Conditions

When asked if their dog has ever suffered from a digestive condition(s), out of the 623 responses, 97 (15.6%) answered "Yes" and 526 (84.4%) answered "No".

The total number of individual digestive conditions reported was 157. Of these, the most commonly reported conditions were food allergies/ intolerance and sensitive stomach, which each affected 17.2% of the study sample (27 of 157). These were followed by other (10.2%), chronic diarrhoea (8.9%), and flatulence (8.9%). Table 8 shows the total number and percentage of dogs affected by each reported digestive condition in descending order.

Table 8: Number and percentage of Large Munsterlanders affected by each specific digestive condition, as reported in the survey

Specific condition	Number affected	Percentage
Food allergies/ intolerance	27	17.2%
Sensitive stomach	27	17.2%
Other	16	10.2%
Chronic diarrhoea	14	8.9%
Flatulence	14	8.9%
Chronic vomiting	11	7.0%
Pancreatitis	9	5.7%
Gastroenteritis	8	5.1%
Colitis	7	4.5%
Anal gland/ sac impaction/ blockage	6	3.8%
Regurgitation	6	3.8%
Inflammatory bowel disease (IBD)	5	3.2%
Anorexia	3	1.9%
Not known	3	1.9%
Acute haemorrhagic diarrhoea syndrome	1	0.6%
Total	**157**	

The most common answers to "other" for digestive conditions not already listed in the survey were: bloat (n=5), giardia/ campylobacter (n=4), and gastric dilatation volvulus (GDV) (n=2).

When asked if their dog's digestive condition(s) required ongoing management, out of the 142 responses, 93 (65.5%) answered "Yes" and 49 (34.5%) answered "No". Figure 9 shows whether the digestive condition(s) symptoms were consistent, intermittent or a one-off.
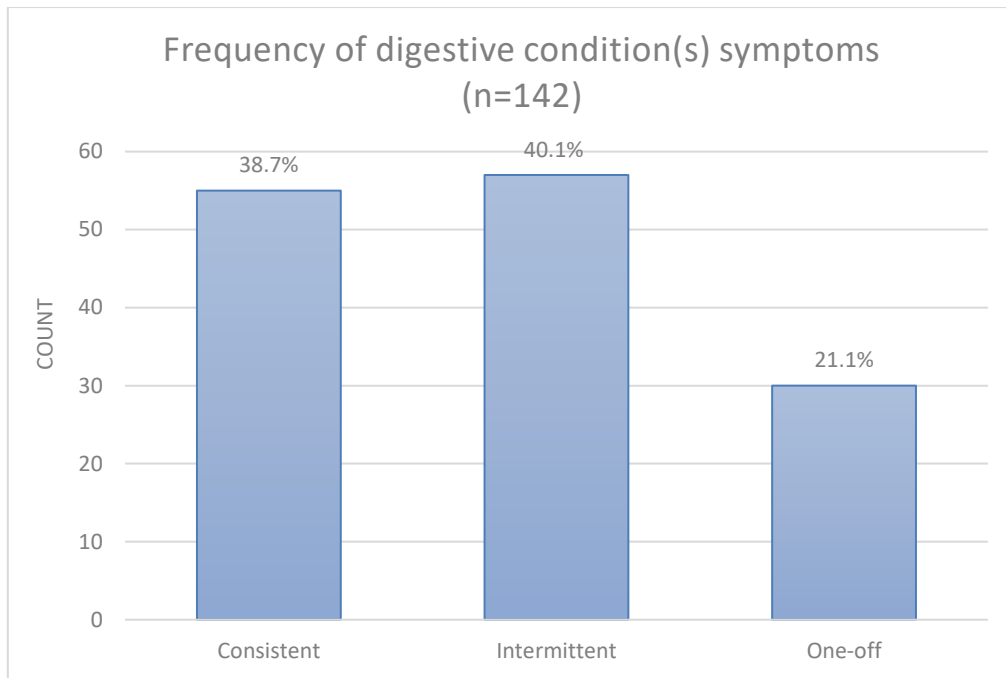
Figure 9: Frequency of digestive condition(s) symptoms, as reported in the survey

Cancer or a mass/lump

When asked if their dog has ever suffered from cancer or a mass/lump, out of the 624 responses, 95 (15.2%) answered "Yes" and 529 (84.8%) answered "No". In this study sample, neutered dogs were significantly more likely to be affected by cancer or a mass/lump (OR = 2.89, 95% CI 1.75 – 4.76, p<0.001).

The median age that affected dogs started to experience the clinical signs associated with their cancer or a mass/lump(s) was eight years of age (min: less than one year, max: 14 years).

The total number of individual cancers or mass/lumps reported was 115. Of these, the most commonly reported condition was other, which each affected 24.3% of the study sample (28 of 115). This was followed by lipoma (20.0%), not known (7.8%), and splenic tumour (7.0%). Table 9 shows the total number and percentage of dogs affected by each reported cancer or mass/lump in descending order.

Table 9: Number and percentage of Large Munsterlanders affected by each specific cancer or mass/lump, as reported in the survey

Specific condition	Number affected	Percentage
Other	28	24.3%
Lipoma	23	20.0%
Not known	9	7.8%
Splenic tumour	8	7.0%
Lymphoma	7	6.1%
Mast cell tumour	7	6.1%
Osteosarcoma	7	6.1%
Mammary tumour	5	4.3%
Brain tumour	4	3.5%
Liver tumour	4	3.5%
Melanoma	4	3.5%
Vascular/ blood tumour	3	2.6%
Lung tumour	2	1.7%
Anal sac tumour	1	0.9%
Kidney tumour	1	0.9%
Testicular tumour	1	0.9%
Thyroid tumour	1	0.9%
Total	**115**	

The most common answers to "other" for cancers or mass/lumps not already listed in the survey were: sarcoma (n=3), dermoid cyst/ follicular cyst/ cyst (n=3) and gastric adenocarcinoma/ gastrointestinal tumour (n=3).

When asked if their dog's cancer or mass/lump was definitively diagnosed through laboratory testing, out of the 94 responses, 71 (75.5%) answered "Yes" and 23 (24.5%) answered "No". When asked if their dog's cancer or mass/lump resulted in their death, out of the 94 responses, 42 (44.7%) answered "Yes" and 52 (55.3%) answered "No".

Ear Conditions

When asked if their dog has ever suffered from an ear condition(s), out of the 622 responses, 89 (14.3%) answered "Yes" and 533 (85.7%) answered "No".

The total number of individual ear conditions reported was 111. Of these, the most commonly reported condition was infrequent ear infections, which affected 36.9% of the study sample (41 of 111). This was followed by frequent ear infections (22.5%), excessive ear wax (12.6%), otitis externa (9.9%), and otitis media (9.0%). Table 10 shows the total number and percentage of dogs affected by each reported ear condition in descending order.

Table 10: Number and percentage of Large Munsterlanders affected by each specific ear condition, as reported in the survey

Specific condition	Number affected	Percentage
Ear infections (infrequent)	41	36.9%
Ear infections (frequent)	25	22.5%
Excessive ear wax	14	12.6%
Otitis externa	11	9.9%
Otitis media	10	9.0%
Other	4	3.6%
Haematoma	3	2.7%
Deafness	2	1.8%
Not known	1	0.9%
Total	**111**	

The most common answer to "other" for ear conditions not already listed in the survey was: dark discharge (n=2).

Eye Conditions

When asked if their dog has ever suffered from an eye condition(s), out of the 621 responses, 62 (10.0%) answered "Yes" and 559 (90.0%) answered "No".

The median age that affected dogs started to experience the clinical signs associated with their eye condition(s) was four years of age (min: less than one year, max: 13 years).

The total number of individual eye conditions reported was 60. Of these, the most commonly reported condition was other, which affected 40.0% of the study sample (24 of 60). This was followed by cataract (15.0%), not known (13.3%), blocked tear duct (8.3%), and corneal ulcer (5.0%). Table 11 shows the total number and percentage of dogs affected by each reported eye condition in descending order.

Table 11: Number and percentage of Large Munsterlanders affected by each specific eye condition, as reported in the survey

Specific condition	Number affected	Percentage
Other	24	40.0%
Cataract	9	15.0%
Not known	8	13.3%
Blocked tear duct	5	8.3%
Corneal ulcer	3	5.0%
Distichiasis	2	3.3%
Epiphora	2	3.3%
Excessive tearing	2	3.3%
Loss of vision	2	3.3%
Pigmentary keratitis	2	3.3%
Prolapsed gland	1	1.7%
Total	**60**	

The most common answers to "other" for eye conditions not already listed in the survey were: conjunctivitis/ eye infection (n=9), discharge/ sticky eyes/ weepy eyes (n=5), and injury/ scratch (n=4).

Neurological and/or Spinal Conditions

When asked if their dog has ever suffered from a neurological and/or spinal condition(s), out of the 626 responses, 50 (8.0%) answered "Yes" and 576 (92.0%) answered "No".

The median age that affected dogs started to experience the clinical signs associated with their neurological and/or spinal condition(s) was eight years of age (min: less than one year, max: 16 years).

The total number of individual neurological and/or spinal conditions reported was 62. Of these, the most commonly reported condition was other, which affected 19.4% of the study sample (12 of 62). This was followed by spondylosis (16.1%), epilepsy (14.5%), and seizures/ fitting (11.3%). Table 12 shows the total number and percentage of dogs affected by each reported neurological and/or spinal condition in descending order.

Table 12: Number and percentage of Large Munsterlanders affected by each specific neurological and/or spinal condition, as reported in the survey

| Specific condition	Number affected	Percentage
Other	12	19.4%
Spondylosis	10	16.1%
Epilepsy	9	14.5%
Seizures/ fitting	7	11.3%
Degenerative myelopathy	5	8.1%
Vestibular disease	5	8.1%
Spondylitis	4	6.5%
Intervertebral disc disease (IVDD)	3	4.8%
Not known	3	4.8%
Congenital deafness	1	1.6%
Meningoencephalitis	1	1.6%
Paralysis	1	1.6%
Stroke	1	1.6%
Total	**62**	

The most common answers to "other" for neurological and/or spinal conditions not already listed in the survey were: nerve and disc issues (n=4), spinal tumour (n=2), and steroid responsive meningitis arteritis (n=2).

Reproductive Conditions

Of 398 male dogs, 39 (9.8%) had been used at stud. Of these dogs, 36 (92.3%) had produced approximately 1-5 litters and three (7.7%) had produced approximately 5-10 litters.

Of 335 female dogs, 43 (12.8%) had been bred from. Of these breeding bitches, the median age that they had their first litter was three years and two months (min: one year, max: three

years and two months). Figure 10 shows how many times these breeding bitches were bred from.
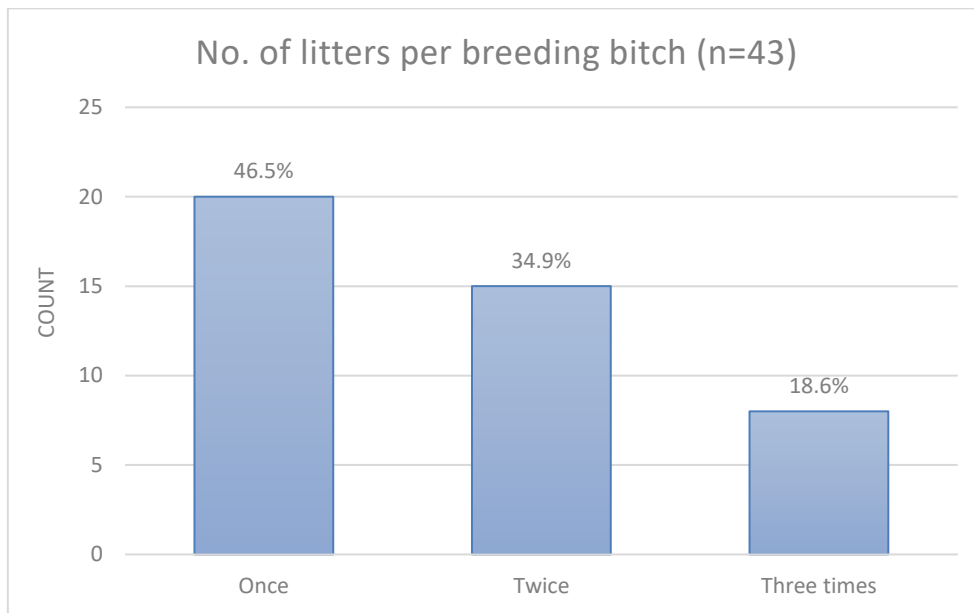
Figure 10: Number of times the breeding bitches were bred from, as reported in the survey

When asked if any of these breeding bitches had ever had a caesarean section, out of the 42 responses, 10 (23.8%) answered 'Yes' and 32 (76.2%) answered 'No'. Three dogs were reported to have had two caesarean sections. Of 12 caesarean sections, nine (75.0%) were an emergency whilst three (25.0%) were an elective procedure. The known reasons for the caesarean sections were 'long labour' (n=5), 'uterine inertia' (n=2), 'large placenta' (n=2), 'breach puppy' (n=1), and 'single puppy' (n=1).

When asked if their dog has ever suffered from a reproductive condition(s), out of the 609 responses, 40 (6.6%) answered "Yes" and 569 (93.4%) answered "No". Of these 40 dogs that had suffered from a reproductive condition(s), 21 (52.5%) were male and 19 (47.5%) were female.

The total number of individual reproductive conditions reported was 41. Of these, 56.1% were for male conditions (23 out of 41), and 43.9% were for female conditions (18 out of 41). Overall, the most commonly reported reproductive condition across sexes was cryptorchidism, which affected 16 dogs. This was followed by other (n=10), pseudopregnancy (n=5), and pyometra (n=5). Table 13 shows the total number and percentage of dogs affected by each reported reproductive condition.

Table 13: Number and percentage of Large Munsterlanders affected by each specific reproductive condition, as reported in the survey

	Specific condition	**Number affected**
Male conditions	Cryptorchidism	16 (69.6%)
	Other	6 (26.1%)
	Not known	1 (4.3%)
	Total	**23**
Female conditions	Pseudopregnancy	5 (27.8%)
	Pyometra	5 (27.8%)
	Other	4 (22.2%)
	Fertility problems	3 (16.7%)
	Irregular seasons	1 (5.6%)
	Total	**18**
Total		**41**

The most common answers to "other" were: retained testicle (n=3) and phantom pregnancy (n=2).

Kidney and/or Bladder Conditions

When asked if their dog has ever suffered from a kidney and/or bladder condition(s), out of the 624 responses, 40 (6.4%) answered "Yes" and 584 (93.6%) answered "No".

The total number of individual kidney and/or bladder conditions reported was 46. Of these, the most commonly reported condition was urinary incontinence, which affected 37.0% of the study sample (17 of 46). This was followed by infrequent urinary tract infection (32.6%), other (13.0%), frequent urinary tract infection (8.7%), and kidney failure (4.3%). Table 14 shows the total number and percentage of dogs affected by each reported kidney and/or bladder condition in descending order.

Table 14: Number and percentage of Large Munsterlanders affected by each specific kidney and/or bladder condition, as reported in the survey

Specific condition	**Number affected**	**Percentage**
Urinary incontinence	17	37.0%
Urinary tract infection (infrequent)	15	32.6%
Other	6	13.0%
Urinary tract infection (frequent)	4	8.7%
Kidney failure	2	4.3%
Cystinuria	1	2.2%
Urolithiasis	1	2.2%
Total	**46**	

The most common answers to "other" for kidney and/or bladder conditions not already listed in the survey were: blood in urine (n=3) and cystitis (n=2).

Heart Conditions

When asked if their dog has ever suffered from a heart condition(s), out of the 615 responses, 27 (4.4%) answered "Yes" and 588 (95.6%) answered "No".

The median age that affected dogs started to experience the clinical signs associated with their heart condition(s) was nine years of age (min: less than one year, max: 16 years).

The total number of individual heart conditions reported was 36. Of these, the most commonly reported condition was heart murmur, which affected 44.4% of the study sample (16 of 36). This was followed by other (16.7%), not known (13.9%), irregular heart rate and/or rhythm (11.1%), and heart failure (5.6%). Table 15 shows the total number and percentage of dogs affected by each reported heart condition in descending order.

Table 15: Number and percentage of Large Munsterlanders affected by each specific heart condition, as reported in the survey

Specific condition	Number affected	Percentage
Heart murmur	16	44.4%
Other	6	16.7%
Not known	5	13.9%
Irregular heart rate and/or rhythm	4	11.1%
Heart failure	2	5.6%
Aortic stenosis/ subaortic stenosis	1	2.8%
Mitral valve dysplasia (MVD)	1	2.8%
Myocarditis/ endocarditis	1	2.8%
Total	**36**	

The following answers to "other" were reported once each: enlarged heart, fluid around the heart, heartworms, pericardial effusion, peritoneal-pericardial diaphragmatic hernia (PPDH), sudden collapse, and tracheal collapse.

Dental Conditions

When asked if their dog has ever suffered from a dental condition(s), out of the 605 responses, 24 (4.0%) answered "Yes" and 581 (96.0%) answered "No". When asked to specify the dental condition(s), the most common answers were 'tooth extraction' (n=7), broken/ fractured tooth (n=6), plaque build-up (n=4), gingivitis/ gum disease (n=3), and gum abscess (n=3).

Immunological Conditions

When asked if their dog has ever suffered from an immunological condition, out of the 611 responses, 18 (2.9%) answered "Yes" and 593 (97.1%) answered "No".

The total number of individual immunological conditions reported was 19. Of these, the most commonly reported condition was other, which affected 42.1% of the study sample (8 of 19). This was followed by immune-mediated haemolytic anaemia (21.1%), not known (21.1%), immune-mediated thrombocytopenia (10.5%), and myasthaenia gravis (5.3%). Table 16

shows the total number and percentage of dogs affected by each reported immunological condition in descending order.

Table 16: Number and percentage of Large Munsterlanders affected by each specific immunological condition, as reported in the survey

Specific condition	Number affected	Percentage
Other	8	42.1%
Immune-mediated haemolytic anaemia (IMHA)	4	21.1%
Not known	4	21.1%
Immune-mediated thrombocytopenia (IMT)	2	10.5%
Myasthaenia gravis	1	5.3%
Total	**19**	

The most common answer to "other" was unspecified allergies (n=3).

Hormonal Conditions

When asked if their dog has ever suffered from any other hormonal condition(s), out of the 614 responses, 18 (2.9%) answered "Yes" and 596 (97.1%) answered "No".

The total number of individual hormonal conditions reported was 17. Of these, the most commonly reported condition was other, which affected 58.8% of the study sample (10 of 17). This was followed by hypothyroidism (29.4%) and not known (11.8%). Table 17 shows the total number and percentage of dogs affected by each reported hormonal condition in descending order.

Table 17: Number and percentage of Large Munsterlanders affected by each specific hormonal condition, as reported in the survey

Specific condition	Number affected	Percentage
Other	10	58.8%
Hypothyroidism	5	29.4%
Not known	2	11.8%
Total	**17**	

The most common answer to "other" for hormonal conditions not already listed in the survey was: hormone-related aggression (n=2).

Breathing Conditions

When asked if their dog has ever suffered from a breathing condition(s), out of the 605 responses, 14 (2.3%) answered "Yes" and 591 (97.7%) answered "No". When asked to specify the breathing condition(s), the most common answers were 'laryngeal paralysis/ tracheal collapse' (n=4) and 'wheezing' (n=3).

Haematological Conditions

When asked if their dog has ever suffered from a haematological condition, out of the 605 responses, six (1.0%) answered "Yes" and 599 (99.0%) answered "No". When asked to

specify the haematological condition(s), the most common answer was 'immune-mediated haemolytic anaemia (IMHA)' (n=2).

Hepatic Conditions

When asked if their dog has ever suffered from a hepatic condition, out of the 605 responses, three (0.5%) answered "Yes" and 602 (99.5%) answered "No". When asked to specify the hepatic condition(s), the most common answer was 'liver tumour' (n=2).

Additional conditions not listed in survey

The respondents were provided with the opportunity to note any conditions not already covered by the previous questions. The conditions listed for more than one dog were:

- Two reports of toe amputation
- Two reports of tetanus

Death reports

When asked if they were reporting for a dog that has sadly passed away, out of 604 responses, 122 (20.2%) answered "Yes", and 482 (79.8%) answered "No".

The median age at death was 11 years and 2.5 months (min = eight months, max = 16 years and two months).

Of 140 reported causes of death by organ system or category, the most frequently reported reason was a cancerous condition (25.7%, 36 of 140). Table 18 shows the total number and percentage of causes of death by organ system or category in descending order.

Table 18: Number and percentage of causes of death by organ system or category, as reported in the survey

Organ system/ category	Number of dogs	Percentage
Cancerous condition	36	25.7%
Old age	28	20.0%
Neurological and/or spinal condition	17	12.1%
Muscle, bone or joint condition	11	7.9%
Heart condition	10	7.1%
Digestive condition	8	5.7%
Immunological condition	8	5.7%
Not known	7	5.0%
Blood condition	4	2.9%
Trauma	3	2.1%
Breathing condition	2	1.4%
Kidney and/or bladder condition	2	1.4%
None of the above	2	1.4%
Liver condition	1	0.7%
Skin condition	1	0.7%
Total	**140**	

The most common conditions listed under "other" were brain tumour (n=3) and aggression (n=2).

The most common specific causes of death were 'old age' (n=4), 'spread of cancer' (n=4), 'liver tumour' (n=3), 'lung mass/ tumour/ cancer' (n=3), 'dangerous/ aggressive dog' (n=3), 'spleen/ splenic cancer' (n=3), 'spinal tumour' (n=3), 'paralysed / failed back legs' (n=3), and 'canine degenerative myelopathy' (n=3).