



Health Survey 2004

A Report by Dr. Elsa J. Sell

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Table of Contents

General Information

Owner Demographics and Interests	2
Dog Demographics	3
Birth Year	3
Sex and reproductive status	3
Vaccination	3
Parasite control	4
Health screens in dogs used for breeding	5
Dogs bred, # litters, and # pups	6
Mortality causes	7

Disease Frequencies by Category

Non-malignant warts, cysts, and lumps	8
Eye	8
Mouth and tooth	8
Autoimmune and immune	9
Cancer	9
Skin and hair or coat	10
Temperament	10
Gastrointestinal	10
Ear	11
Urinary tract	11
Endocrine	11
Muscle	11
Reproductive	12
Neurological	12
Dietary	13
Blood	13
Skeletal and joint	13
Other	13

Summary

Most Common Diseases or Health Problems	14
Sex Distribution	15

Suggestions for the Future	16
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General Information

This is the first dog-based health survey for Kerry Blue Terriers and thus, it is the start of a solid foundation for tracking the breed's wellness and health problems. The board of the Kerry Blue Terrier Foundation devoted much time and energy to bring forth these results. Their work included development of the survey content and form, design of a data intake system to retain anonymity, distribution of the survey form to both individuals and breeders in several mailings, encouragement of owner and breeder participation, and interaction with those managing the data. The system to assure anonymity in reporting for this first survey no doubt encouraged the level of participation that occurred. Some owners left out information, so the numbers will not always tally to the total number of owners or dogs. No attempt was made to calculate the percentage of return for surveys because mailings went to breeders for distribution, to individual owners, and the forms were also available for downloading from the Foundation web site.

The findings include valuable information for future planning and tracking of change over time. Determination of whether the results apply to the general population of Kerry Blue Terriers requires additional study and more participants.

Owner Demographic Information

Beyond the organizational work of the Foundation board to develop the survey, individual owners and breeders shared their knowledge and experiences. The result is 551 dog entries from 274 owners. Most owners were from the USA (n=202; 73.7%). Participation from other countries included Canada (n=29; 10.6%), Slovakia (n=5), 1 each from Australia, Czech Republic, England, Finland, Russia, Spain, and Wales. Geographic location was not specified by 31.

Years in the breed was 1-5 yrs for 71 (25.9%), 6-10 years for 68 (24.8%), 11-15 years for 38 (13.9%), and greater than 15 years for 80 (29.2%). Participants have owned 1-22 dogs during their time with the breed; currently, they own from none to 9 dogs. Both breeders and non-breeders were among the participants, judging by whether or not a dog had been used for breeding (149 (27%) dogs were reported as having been used for breeding). A total of 83.4% believe that the Kerry Blue Terrier is a healthy breed, with little difference based on years in the breed. This suggests reason for optimism. Even so, several problems occurred with a reasonably high frequency rate, and several problems are of early onset and serious nature.

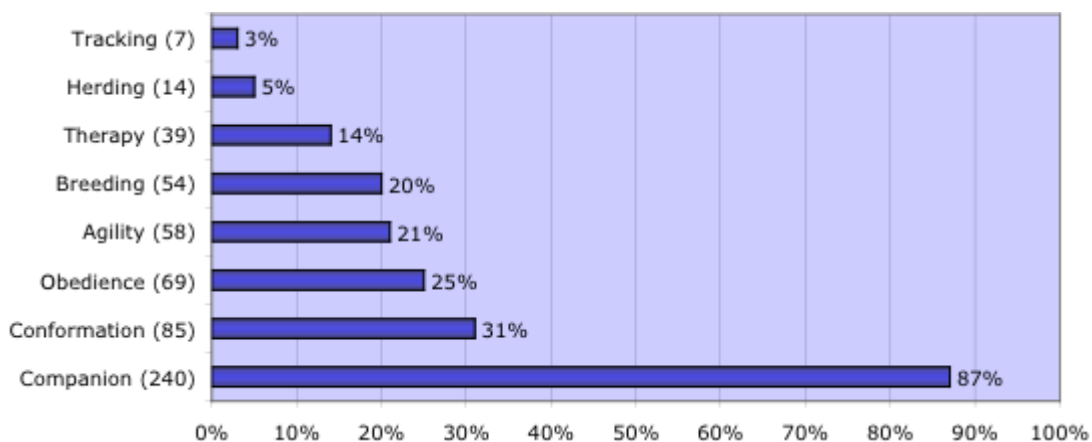
Owner Interests

The following were checked as an interest, usually in combination with at least one other activity. It is assumed that checking an interest indicated ongoing or planned participation in the activity. The variety of interests shows how versatile Kerry owners and their dogs are. (126 owners checked companion as the only "interest.")

More common combinations of interest were:

- Conformation and breeding—50
- Agility and obedience—40
- Conformation and obedience—37
- Conformation and agility—29
- Conformation, obedience, agility—21
- Conformation and therapy—19

Interests of owners surveyed

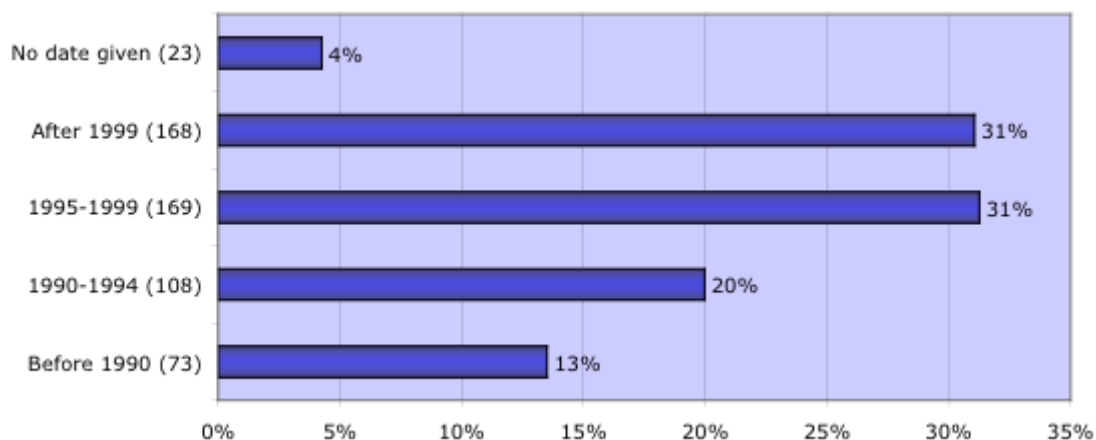


Dog Demographics

Of the 551 dogs, 157 (28.5%) were reported as completely healthy.

Birth Years

Birth years of dogs surveyed



Sex, Reproductive Status, and If Used for Breeding

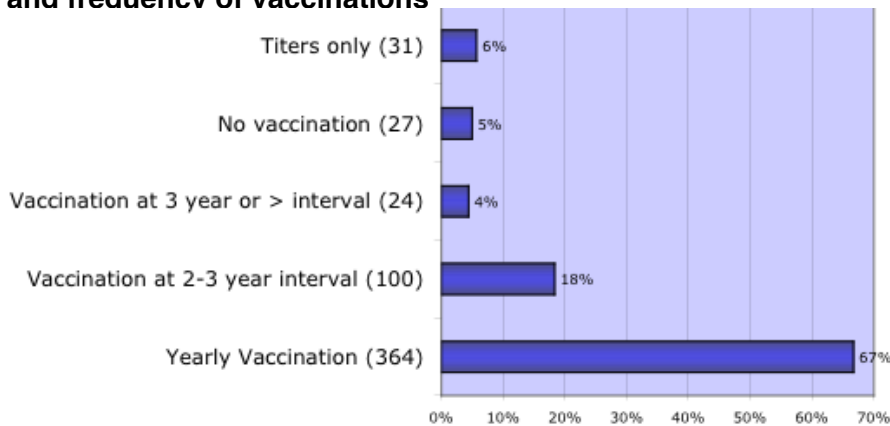
Note: The youngest would not yet have been used for breeding. Also, age of alteration was not provided on all dogs, thus the number used for calculating average age for spay or neuter is fewer than the number of dogs in each category.

Sex	n (% of all dogs)	Used for Breeding	Age if Altered
Male, intact	152 (27.6%)	37/152 (24%)	
Male, neutered	112 (20.3%)	12/112 (10.7%)	av 2.5 yr (range 0.25-12 yr; n=97)
Female, intact	150 (27.2%)	60/150 (40%)	
Female, spayed	131 (23.8%)	39/131 (29.8%)	av 3 yr (range 0.3-10 yr; n=118)

Vaccination

Most have been vaccinated on a yearly basis, as shown below.

Use and frequency of vaccinations

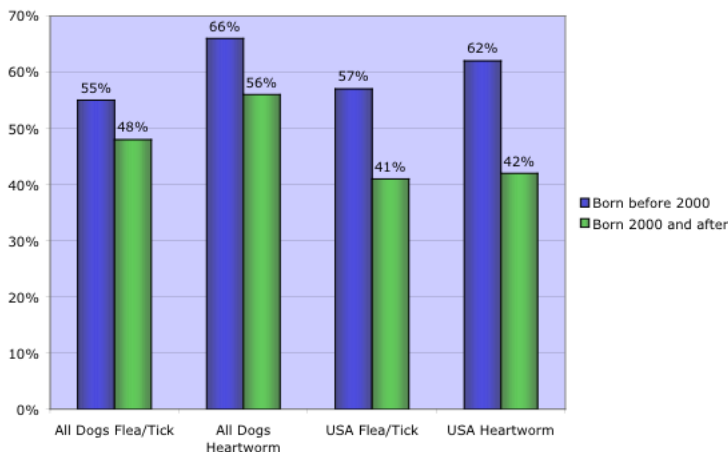


Although there was no difference in the rate of yearly vaccination for different years of birth, the 3 year interval vaccination percentage increased from 2-3% before 2000 up to 8-10% after 2000.

It is likely that future surveys of more recently born dogs will show a continued shift from yearly to less frequent vaccination, perhaps in combination with titering for the most important core vaccines (parvo and distemper). This is because of the recent changes in recommendations for veterinarians regarding vaccination frequency.

Parasite Control

Dogs untreated for flea/tick and heartworm born before and after 2000



Use of flea/tick or heartworm preventives increased in all dogs born after 1999 by 8-10%. For USA dogs there was a 16% increase in use of flea/tick preventives with 59% of dogs using some type of preventive. Likewise, with heartworm preventive use; it increased by 20% so that 58% received a heartworm preventive. With heartworm so prevalent in virtually all states of the USA, and given the serious nature of heartworm disease and the treatment involved, it seems that owners might want to rethink why they do not protect against heartworm disease.

Many products were used for both flea/tick and heartworm prevention. The more common agents used in dogs from all geographical locations are listed below:

Flea/tick

- Frontline alone or in combination—41
- Advantage —70

- Sentinel alone—17
- Other—30

Heartworm

- Heartgard (active ingredient is ivermectin)—100
- Interceptor (active ingredient is milbemycin)—41
- Sentinel alone—25
- Other—20
- Ivermectin product—8. This is listed separately because owners need to be aware that livestock preparations of ivermectin are not approved for use in dogs (or cats). Livestock preparations are much more concentrated and great care must be taken to assure proper dilution, or serious toxicity could result. Please be extremely careful if you chose this kind of product and have your veterinarian supervise the process.

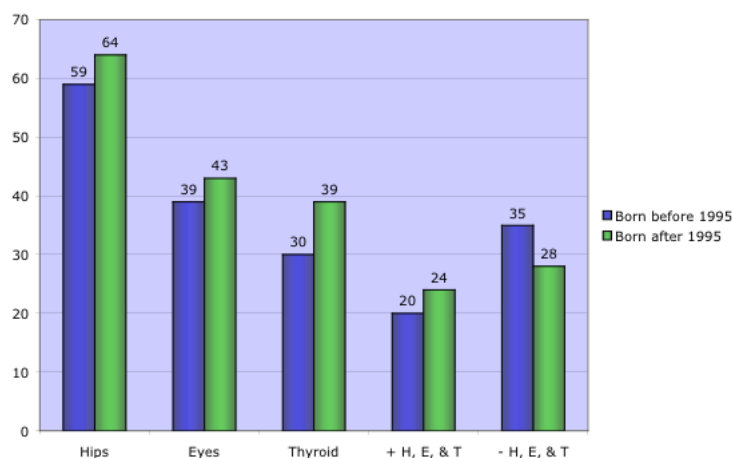
Health Screening Tests in Dogs Used for Breeding

When all years of birth are considered for the 149 dogs used in breeding, the frequencies of health screening testing were:

- Hips alone or in combination with other tests—93
- Eyes alone or in combination—62
- Thyroid alone or in combination—52
- Elbows alone or in combination—8
- Hips and eyes—56
- Hips, eyes, and thyroid—33; 9 of these dogs also had von Willebrand screening done by 5 different breeders

Health screening tests were compared for breeding dogs born before and after 1995. The graph below shows the percentage of dogs that had the test designated (with or without others) in the two different time periods. Hip screens increased by 5% to 64%, eye screens increased by 4% to 43%, and thyroid screens increased by 9% to 39%. The frequency of dogs having all 3 major screening tests (hips, eyes, thyroid) increased from 20% to 24%. The frequency of those not having the combination of 3 major screens decreased from 35% to 28%. So, gradually there has been progress with increased use of health screening in Kerry Blue Terrier breeding stock.

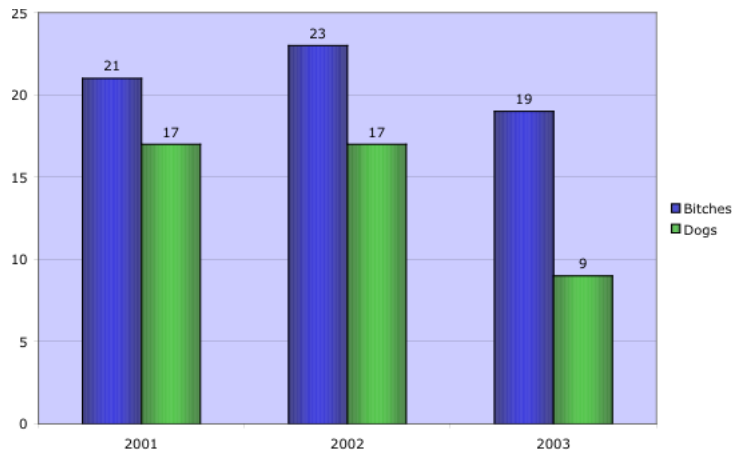
Use of health screening tests in dogs born before and after 1995



Even so, breeders and buyers of Kerry Blue Terriers should be aware that official organizations (i.e., CERF, AKC, and OFA) in the USA have published recommendations and the rationale for frequency and timing of these screening tests in recent years.

The CERF research database shows the following statistics for recent years of Kerry Blue Terrier eye evaluations in the USA and possibly Canada, if those breeders are having dogs examined by CERF-approved ophthalmologists. The CERF research database contains results of all eye exams done because ophthalmologists are required to submit the results.

CERF-testing on bitches and dogs for 2001-2003



The number of Kerry Blue Terriers registered by AKC in 2002 were 464, in 2003 were 475, and the most recent 10 year average was 416 (this figure provided by the KBT Foundation). It is obvious that not many are having CERF exams done. The argument could be made that very few hereditary problems have been identified by CERF (6 cases in 2001-2003 among 122 dogs). The converse is that you don't know what hereditary eye problems occur unless you examine a substantial number of dogs year after year, and those dogs need to include both breeding and non-breeding dogs.

Dogs Bred, Number of Litters, and Average Number of Pups/Litter

Bitches —99 bred, 19 had no litters/pups (19%)

# bitches	av # pups in each litter				
	1 litter	2 litters	3 litters	4 litters	5 litters
36	5.3	-	-	-	-
21	4.4	5.4	-	-	-
11	5.0	5.6	6.1	-	-
2	7.0	7.5	6.5	5.5	-
2	3.0	6.5	8.5	6.5	7.0

Dogs—49 used at stud, 11 had no litters/pups (22.5%)

# dogs	av # pups in each litter					
	1 litter	2 litters	3 litters	4 litters	5 litters	6 litters
13	5.0	-	-	-	-	-
9	4.9	5.4	-	-	-	-
3	5.0	6.7	5.7	-	-	-
3	5.7	5.7	4.3	6.0	-	-
1	5	5	5	5	5	-
1	4	3	6	4	4	5

Perhaps the most interesting finding in the reproductive area is the relatively high percentage where a breeding resulted in no pups.

Mortality Causes

Cause of death at different ages is important in planning future research or surveys and to track change over the long term. There were 108 deaths and 99 for whom an approximate or exact age of death could be calculated. Causes of mortality are given below for four age groups. Of the 24 dogs dying before 9 years, there were 16 dogs with an identified cause of death that was not accidental. Of these 16, 4 had lymphosarcoma, 2 juvenile renal failure, 2 autoimmune hemolytic anemia, 1 kidney stone, and 3 different cancers. The cancers and hemolytic anemia continued to be the predominant causes of death in the 9-11 years old group, too.

Age < 4 yrs (n=6)

- 2 juvenile renal failure
- 1 accidental
- 1 autoimmune hemolytic anemia
- 2 unknown

Age 4-8 yrs (n=18)

- Cancer (n=8)
 - 4 lymphosarcoma
 - 1 osteosarcoma
 - 1 mammary
 - 1 lung
 - 1 unspecified type
- 1 each: other neurologic (not described), accidental, ruptured pancreas, kidney stone, degenerative myelopathy, anesthesia (reason for surgery not given), autoimmune hemolytic anemia
- 3 unknown

Age 9-11 yrs (n=31)

- Cancer (n=13)
 - 5 lymphosarcoma (1 also had squamous cell cancer)
 - 3 mammary
 - 2 hemangiosarcoma
 - 1 malignant melanoma
 - 1 osteosarcoma
 - 1 other, no description
- 2 autoimmune hemolytic anemia
- 1 each: muscle problem (not described), hip dysplasia, kidney failure (also had seizures), kidney disease (not described), degenerative myelopathy, heart failure, liver failure
- 9 unknown

Age > 11 yrs (n=44)

- 7 old age
- Cancer (7)—1 each: hemangiosarcoma, spleen and bowel, mammary, stomach, lymphosarcoma; 2 not described
- 2 kidney disease (not described)
- 2 kidney failure
- 2 stroke
- 1 each chronic active hepatitis, pancreatitis, degenerative myelopathy, seizures, neuro other (not described), accidental, vaccine reaction and old, heart failure, brown recluse spider bite
- 15 unknown

Disease Frequencies by Category

Individual health problems are listed in descending order of frequency in each category. Disease categories are presented in descending order of frequency. The number of dogs is 551. Tables were corrected for duplicate health problem entries for a single dog (e.g., if a dog was coded as both 102 and 701 for hypothyroidism, the dog was counted only once). In each category, the n represents the total number of cases within a category. The "comments" column contains some information that was reported by owners.

Non-malignant Warts, Cysts, and Lumps (n=295 in 190 dogs; 34.5% of all dogs)

Problem	# cases	% of dogs	% of category	Comments
Sebaceous cysts	125	22.7	42.4	
Warts, papillomas	43	7.8	14.6	
Lipoma	37	6.7	12.5	
Spicules	37	6.7	12.5	
Hair follicle tumors	17	3.1	5.8	
Histiocytoma	12	2.2	4.1	
Dermoid cyst	11	2.0	3.7	
Other	10	2.0	3.7	

There were two cases of hemangioma, and one case of mammary gland adenoma.

Eye Problems (n=102 in 87 dogs; 15.8% of all dogs)

Problem	# cases	% of dogs	% of category	Comments
Cataracts	26	4.7	25.5	Four < 6 yrs; one 8 yrs; remainder 10 yrs or older
Conjunctivitis	26	4.7	25.5	
Other	24	4.4	23.5	
Dry eye (keratoconjunctivitis) (106)	19	3.4	18.6	comments suggest some cases were blocked tear duct rather than keratoconjunctivitis; 6 received immune suppressant meds

There were two cases each of distichiasis and corneal dysplasia; one case each of entropion, ectropion, and progressive retinal atrophy. There were no cases of glaucoma or uveitis.

Generally juvenile cataracts are considered hereditary and have an early onset. In this survey there were only 4 or 26 cases where the onset was before six years of age. As noted earlier, few Kerries have CERF screening for eye problems. Thus, it is an unknown as to whether the breed has hereditary juvenile cataracts or not.

Mouth and Tooth Problems (n=82 in 64 dogs; 11.6% of all dogs)

Problem	# cases	% of dogs	% of category	Comments
Dental tartar	19	3.4	23.2	
Missing teeth	18	3.3	22.0	
Halitosis	15	2.7	18.3	
Gingivitis	7	1.3	8.5	
Other	7	1.3	8.5	

There were 5 cases of retained puppy teeth, 4 of tooth abscess, 4 undershot (1 became level) and 3 overshot (1 resolved). There were no cases of wry mouth.

Autoimmune and Immune Problems (n=77 in 68 dogs; 9.0% of all dogs)

Problem	# cases	% of dogs	% of category	Comments
Hypothyroid (102, 701)	25	4.5	32.5	
Dry eye (kerato-conjunctivitis) (806)	19	3.4	24.7	6 received immune suppressing meds
Degenerative myelopathy (115, 1304)	12	2.2	15.6	2 owners reported 2 cases each. Av age of onset = 9.2 yrs (n=12)
Autoimmune hemolytic anemia (106, 205)	6	1.1	7.8	
Pancreatic disease (104, 704)	4	0.7	5.2	none were diabetes mellitus
Rheumatoid arthritis (110, 1802)	4	0.7	5.2	age onset in 3 was 10, 13, 15 yrs (there is a possibility these were arthritis associated with older age, rather than autoimmune mediated)

There were 3 cases of immune suppression, 2 cases of idiopathic thrombocytopenia, and 1 case each of chronic active hepatitis and systemic lupus (SLE) (this dog was euthanized because of renal failure). There were no cases of Addison's disease, pemphigus/lupus, myasthenia gravis, myositis, uveitis, or diabetes mellitus.

Note: Although hypothyroidism is included in autoimmune problems, the reader should be aware that not all cases of hypothyroidism are autoimmune. One or more thyroid autoantibodies must be present to diagnose autoimmune hypothyroidism. Only recently have these autoantibody tests become available. In addition, autoantibodies are found in younger dogs so that the diagnosis of autoimmune hypothyroidism must be made in younger dogs. An older dog who is tested first when 11 years, for example, will not have the antibodies at such an advanced age.

Cancer (n=63 in 59 dogs; 10.7% of all dogs)

Problem	# cases	% of dogs	% of category	Comments
Mammary*	16	2.9	25.4	Av age of onset in 14 cases—8 yrs; youngest 4 yrs.
Lymphoma, lymphosarcoma (202, 301)	15	2.7	23.8	average age of onset 7 yrs, youngest age 3
Malignant melanoma	6	1.1	9.5	Av age of onset 9.3 yrs; youngest 4 yrs
Hemangiosarcoma (308, 1208)	4	0.7	6.3	
Other	5			

There was 3 cases each of squamous cell, testicular (1 had age of onset at 3 years), and spleen cancer; 2 cases of osteosarcoma, 1 case each of mast cell, bladder, kidney, bowel, stomach, and lung cancer. There were no cases of leukemia, heart, ovarian, or uterine cancer.

One dog with lymphoma had a brother and mother die of the same disease.

*Of the dogs with mammary cancer, one was a male.

Of the females who were < 1 yr of age (i.e., born after 7/1/2003)

- unspayed, n = 5; no cases mammary cancer

- spayed by 1 yr of age, n = 54; no cases mammary cancer
- Of the females who were > 1 yr of age (i.e., born before 7/1/2003)
- unspayed, n = 89; 6 cases mammary cancer (6.7%); these include 3 cases in whom the age of diagnosis and spaying were identical, so it is assumed the spay happened because of the cancer diagnosis
 - spayed after 1 yr of age, n = 74; 7 cases mammary cancer (9.5%)

Skin and Hair or Coat Problems (n=60 in 46 dogs; 8.3% of all dogs)

Problem	# cases	% of dogs	% of category	Comments
Chewing or biting at skin, coat (persistent)	12	2.2	20.0	
Poor, dry, or thin hair coat	10	1.8	16.7	
Hot spots	8	1.5	13.3	
Dietary allergy	5	0.9	8.3	
Dermatitis	4	0.7	6.7	
Allergic skin disease	4	0.7	6.7	

There were 3 cases of flea allergy, lick granuloma, pruritis, and other; 2 cases of hair loss (1 from Cushing's); and 1 case each of demodectic mange, atopy, and contact allergy. There were no cases of depigmentation, sarcoptic mange, other mange, pemphigus, or bacterial hypersensitivity.

Temperament Problems (n=58 in 44 dogs; 8% of all dogs)

Problem	# cases	% of dogs	% of category	Comments
Aggressive	16	2.3	27.1	onset was 2 yrs or < in 10/11 dogs having age of onset specified 1 dog had 2 bladder stones of calcium oxalate that were surgically removed twice (age 6 and age 7)
Excitable	11	2.0	18.6	
Fearful	11	2.0	18.6	
Other	5	1.3	8.5	3 with separation anxiety
Shy	6	1.1	10.2	
Irritable	4	0.7	6.8	1 had crystals in urine; 1 was irritable when in heat

There were 3 cases of instability, 2 cases of passivity, and no cases of lethargy.

Gastrointestinal Problems (n=58 in 48 dogs; 8.7% of all dogs)

Problem	# cases	% of dogs	% of category	Comments
Colitis, chronic (IBD)	15	2.7	25.9	onset at < 3 yr in all but 2
Diarrhea, recurring	11	2.0	19.0	
Other	10	1.8	17.2	
Vomiting, recurrent	9	1.6	15.5	food related in 4; 7/8 with age of onset were 3 yr or <
Diarrhea, acute	4			
Flatulence	4			

There were two cases of chronic gastritis; one case each of persistent vomiting, megaesophagus, and bloat (the comment indicated this was lower small intestine volvulus).

Ear Problems (n=47 in 46 dogs; 8.3% of all dogs)

Problem	# cases	% of dogs	% of category	Comments
Ear infections, chronic	24	4.4	51.1	age of onset in 15/20 dogs was 2 years of younger
Deafness	20	3.6	42.6	av age of onset (n=19) = 11.4 yr, none less than 10 years; one noted not to be totally deaf
Other	3			

There were no causes of aural hematoma.

With the onset of deafness at older ages, this problem is not likely to be hereditary.

Urinary Tract Problems (n=42 in 34 dogs; 6.2% of all dogs)

Problem	# cases	% of dogs	% of category	Comments
Cystitis	13	2.4	31.0	
Bladder stones	9	1.6	21.4	3 struvite crystals; 3 calcium oxalate; others not specified
Kidney disease	6	1.1	14.3	1 renal failure after severe water deprivation
Vaginitis	5	0.9	11.9	
Other	5	0.9	11.9	
Kidney stones	2			1 resulted in complete loss of one kidney and severe damage to the other kidney within 2 months of the first clinical signs (fever); death occurred at age 4 yrs.
Prostate disease	2			

Endocrine Problems (n=37 in 34 dogs; 6.2% of all dogs)

Problem	# cases	% of dogs	% of category	Comments
Hypothyroid (102, 701)	25	4.5	67.6	
Pancreatic disease (104, 706)	10	1.8	27.0	
Cushing's disease	3	0.5	8.1	age of onset, - 11, 11, 12 years

There are no cases of Addison's, diabetes mellitus, prostatic disease, or hypoparathyroidism.

Muscle Problems (n=34 in 33 dogs; 6.0% of all dogs)

Problem	# cases	% of dogs	% of category	Comments
Trembling, tremors (1301)	18	3.3	52.9	age range from birth to 16 years
Degenerative myelopathy (115, 1304)	12	2.2	35.3	Two cases reported by each of 3 owners. Av age onset 10 yr
Twitching (1302)	2*			
Other	2			

*It is not easy to differentiate trembling, tremors, and twitching so it is unknown if owners were reporting the same clinical sign in an individual category. Tremors are also listed under neurological problems.

There were no cases of weakness, myasthenia, or myopathy.

Note: Twitching occurs during light sleep and that would be considered a normal phenomenon.

Reproductive Problems (n=33 in 27 dogs; 4.9% of all dogs)

Problem	# cases	% of dogs	% of category	Comments
Other	7	1.3	21.1	
Abnormal heat cycles	5	0.9	15.2	
False pregnancy	5	0.9	15.2	
Hermaphroditism	4	0.7	12.1	
Infertility	4	0.7	12.1	
Stillborn puppies	3			
Cryptorchid	3			

There were 1 case each of pyometra and metritis. There were no cases of abortion, vaginitis, poor libido, sterility, anestrus, or monorchid. Other included 1 case each: shrunken testicle after sudden onset of pain which resolved in 3 days without treatment (dog later neutered), progressive mastitis 5 days after whelping, cystic ovaries, ruptured uterus during delivery, and single ovary found at spaying.

Neurological Problems (n=31 in 26 dogs; 4.7% of all dogs)

Problem	# cases	% of dogs	% of category	Comments
Vaccine reaction (1508, 2301)	8	1.5	26.7	Two dogs each had vaccine reactions two years in a row; reported by same owner. These dogs were counted once each.
Tremors (1506)	5	0.9	16.7	
Seizures	4	0.7	13.3	1 geriatric vestibular syndrome
Other	4	0.7	13.3	1 ascending myelopathy; 1 stroke; 1 ataxia/paraparesis and hyperreflexia
Progressive neuronal abiotrophy (PNA)*	3	0.5	10.3	age of onset not given in 2. 1 was in a test litter. A third case diagnosed from videotape; onset was at 2.5 mo, diagnosis will be confirmed at autopsy.
Twitching (1302, 1505)	3	0.5	10.3	
Hyperexcitability	2			
Epilepsy	1			

*One dog listed with PNA problem was a carrier discovered accidentally by breeding to her sire; she was test bred to another carrier twice for purposes of gene mapping.

There were no cases of fainting.

It is unknown if the one case of epilepsy were diagnosed as idiopathic (meaning all other causes were ruled out) or the term was considered synonymous with seizures; the dog had both epilepsy and seizures coded and this was corrected in the count of cases. It is also not known if the 4 seizure cases are idiopathic or have an identified cause. Although there are few cases of seizures and epilepsy, the condition bears watching because idiopathic epilepsy is hereditary in some breeds. Several research projects on the topic are underway.

Dietary Problems (n=26 in 24 dogs; 4.4% of all dogs)

Problem	# cases	% of dogs	% of category	Comments
Food hypersensitivity (401)	18	3.3	*	av age onset 1.7 yr; oldest 4.5 yr
Food intolerance (402)	7	1.3	*	onset given in 6; av age onset 1.9 yr; oldest 9 yr
Obesity	1			

*It is not known how participants differentiated food hypersensitivity from food intolerance. Two dogs had both problems. See summary of health problems for other comments on digestive problems.

Blood Problems (n=25 in 24 dogs; 4.4% of all dogs)

Problem	# cases	% of dogs	% of category	Comments
Lymphoma, lymphosarcoma (202, 301)	15	2.7	60.0	average age of onset 7 yrs, youngest age 3
Hemolytic anemia (106, 205)	6	1.1	24	
Idiopathic thrombocytopenia (107, 206)	2			
von Willebrand disease	1			onset at birth
Other	1			no diagnosis given; resolved by 3 with no treatment

There were no cases of bone marrow failure, factor XI deficiency, hemophilia, leukemia, myeloma, or systemic lupus erythematosus.

Skeletal and Joint Problems (n=24 in 22 dogs; 4.0% of all dogs)

Problem	# cases	% of dogs	% of category	Comments
Osteoarthritis	9	1.6	37.5	
Hip dysplasia	5	0.9	20.8	One dog reported OFA good at 4 years, yet had hip dysplasia at 9.5 years (it is not known if this xray was read by OFA)
Rheumatoid arthritis (110, 1802)	4	0.7	16.7	Age of onset in three dogs was 10, 13, 15 yrs (there is a possibility these were arthritis associated with older age, rather than autoimmune mediated)
Other	3			
Patellar luxation	2			One dog had surgery twice for this problem (ages 11 and 12 yrs)
Elbow dysplasia	1			

Other Problems

Drug or Toxicity Reactions

One listed a reaction to ivermectin + pyrantal—yet in comments the owner indicated that the dog developed an autoimmune disease (type not specified; no code given) after two sets of shots (and didn't indicate the type of shots) in the year of death.

One owner listed an identical problem with milbemycin for two dogs (a neutered male and a spayed female with identical birthdates, so very likely were littermates). The problem was not described. Owner indicated that when the dogs were changed to Heartgard the problem ceased.

One owner reported an older dog developed liver problems after Rimadyl that was cured with acupuncture.

There was one case of internal hemorrhage thought due to ingestion of rat poisoning—dog recovered.

Heart Problems

These were infrequent. Seven had murmurs, 1 each had heart failure, cardiomyopathy (comment indicated with mitral valve disease), coarctation of the aorta, abnormal heart rate, and mild mitral valve insufficiency.

Infectious Disease

These problems were also infrequent. There were 3 each with bacterial, fungal, and Lyme infections; 1 with meningitis.

Liver/Spleen Problems

There was 1 case each of cirrhosis, liver failure, acute hepatitis, and hemangiosarcoma. Two had "other" diagnosis—1 a splenectomy after bleeding (benign nodules found) and 1 with a chronic elevation in liver enzymes.

Tissue Deformities

There were 2 umbilical hernias and 1 inguinal hernia—no cleft palates or "other."

Vaccine Reactions/Failures

There were no vaccine failures reported. Information about vaccine reactions is in the neurological section. The few vaccines for which there were reported reactions are not identified because it is impossible to know what that means—without having also collected vaccination product data for each dog in the survey.

Summary

Most Common Diseases or Health Problems

Problem	% of dogs with the problem
Sebaceous cysts	22.7%
Digestive symptoms, food intolerance*	8.3%
Temperament problems, all combined	8.0%
Warts, papillomas	7.8%
Lipoma	6.7%
Spicules	6.7%

Cataracts	4.7% (only 4/26 were < 6 yrs)
Conjunctivitis	4.7%
Hypothyroid	4.5%
Chronic ear infections	4.4% (most were in younger dogs)
Dry eye	3.4% (only 6/24 received immune suppressing drugs)
Trembling, tremors	3.3%
Hair follicle tumors	3.1%
Mammary cancer	2.9% (av age onset 8 yrs; youngest 4)
Lymphoma, lymphosarcoma	2.7% (av age of onset 7 yrs; youngest 3)

***Food for Thought.** A new category of digestive signs was created by combining the following problems:

- food hypersensitivity (n=18; av age onset 1.7 yr)
- food intolerance (n=7; av age onset 1.9 yr)
- chronic colitis (13/15 onset < 3 yr; av age onset 2.0 with 0.25 mo assigned to those reporting problem from birth)
- recurrent vomiting (7/8 had onset at 3 yr or < and av age of onset was 2.0 yr)
- recurrent diarrhea (n=11, age given in 8; av age onset 1.7 yr & all but one had onset from birth to 1.5 yrs).

There were 60 reports of these “problems” or clinical signs in 46 different dogs (46/551 = 8.3%), making this the second most common in the survey. Both the frequency and early age of onset are of concern. Whether this is truly significant will require more detailed study.

Sex Distribution

Sex distribution was evaluated in the highest frequency problems and when there were at least 10 cases in each category. If a diagnosis may not have been clearly inclusive of only one problem, sex distribution was not calculated. For example, there were 19 cases of “dry eye.” The diagnosis of dry eye is called keratoconjunctivitis sicca. It is an autoimmune problem that generally requires immune suppressants for control of the disease; only 6/19 dogs received immune suppressing medications. Only the problems with apparent sex differences are given in the table below. Frequencies were not calculated due to the very small number of cases. If substantially more cases are collected in future surveys, it may then be possible to draw conclusions about sex differences.

Disease	# cases	M	F	unknown	Comment
Spicules	37	15	22		
Conjunctivitis	26	16	10	1	
Hypothyroidism	25	8	17		
Tremors, trembling	18	12	6		
Aggressive	17	11	6		onset 2 yr or < in all males
Cystitis	13	3	10		
Degenerative myelopathy	12	8	4		
Diarrhea, recurring	11	7	4		
Pancreatic disease	10	3	7		
Hemolytic anemia	6	4	2		

Suggestions for the Future

With these data now available, the future could bring more dialogue among breeders and leaders of organizations involved in caring for health of the Kerry Blue Terrier breed. Among topics for possible discussion are what health screening tests are advisable at least for breeding stock, and at what ages; whether the apparent poor reproductive outcome is a consistent finding or unique to those answering this particular survey (19% of bitches and 22.5% dogs had no pups when bred); and how to address early onset serious and sometimes lethal diseases.