

The Golden Retriever Club of America
National Health Survey
1998-1999



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In Consultation with: Golden Retriever Foundation,
Board of Directors of the Golden Retriever Club of America,
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About the cover:

The Golden Retriever pictured on the front cover is Landmark First Class Oliver, UD owned by John Cotter. Ollie was born on 10/30/99 and is 9 years old in this picture.

With this survey, we hope to find ways to positively impact the lives of all Golden Retrievers.

The Golden Retriever Foundation

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**APPENDIX I - COPY OF THE 1998 GOLDEN RETRIEVER CLUB OF AMERICA
HEALTH SURVEY**

I. Introduction

The number of dog breeds recognized by the American Kennel Club is currently approaching 150. While each dog breed originated from a relatively small gene pool, selective breeding for desirable physical traits such as height, coat color, and head shape, has produced a canine species that is unique among mammals, with normal adult body weight ranging from approximately 4 to 180 lbs. This wide disparity in normal body size is associated with great differences in longevity between the smaller and larger breeds. Also, there are many diseases that occur with greater frequency in larger dogs such as bone cancer, cardiomyopathy, and hip dysplasia. Further evidence for the effect of selective breeding is that mixed breed dogs generally live longer and have a lower incidence of most diseases than do purebred dogs of the same size. For these reasons, the canine pet population must be evaluated breed by breed in order to characterize the general state of health and well being.

There are few existing sources of data that can be used to assess the health and longevity of purebred dogs. Veterinary hospital based information is available through the national computerized Veterinary Medical Data Base (VMDB) which is housed at Purdue University and contains information on hospital visits for more than five million dogs and cats. However, the VMDB primarily includes animals referred to veterinary teaching hospitals in North America, because of severe or life-threatening conditions that are difficult to diagnosis and treat in private veterinary practice. Thus, these dogs are not representative of the general pet population. Formal breed health surveys and genetic screening of some breeds have been conducted to measure the prevalence of suspected genetic diseases and to identify individual animals who may be carriers of these inherited diseases. Few of these health surveys however, have been comprehensive in nature and inclusive of the full spectrum of health conditions that affect pet dogs. Persons unfamiliar with the principles of research design and statistical data analysis designed many of these breed surveys.

The breed survey described in this report represents a collaborative effort between the Health and Genetics Committee of the Golden Retriever Club of America and the Clinical Epidemiology Section of the Purdue University School of Veterinary Medicine. The primary objective was to describe the frequency and pattern of occurrence of health related conditions and causes of death

in Golden Retrievers. A secondary objective was to relate physical traits, diet, environment, and personality of individual animals to certain diseases and longevity. We hope the results of this survey will serve to better familiarize veterinarians and owners with the Golden Retriever breed and provide the Golden Retriever clubs with information that can be used to prioritize future health-related research and disease prevention efforts. It should serve to stimulate further studies on the causes of diseases that affect Golden Retrievers.

II. Methods

The Health and Genetics Committee of the Golden Retriever Club and Dr. Larry Glickman from Purdue University School of Veterinary Medicine developed the questionnaire used in this survey. The club mailed the questionnaire to all members and placed a copy on the club's home page on the World Wide Web in 1998. Each owner was asked to complete a separate questionnaire for up to five dogs that were alive on January 1, 1993. Seven hundred and forty six owners submitted usable responses directly to Purdue University for 1444 Golden Retrievers.

Information on the questionnaires was coded and entered into a computer database after all personal identifiers were deleted, in order to keep the information confidential. A software application called Epi Info version 6.04 developed by the Centers for Disease Control and Prevention (Atlanta, GA) was used for data entry and SAS System version 6.12 was used for data analysis. SAS is a comprehensive data management and analysis software application from the SAS Institute (Cary, NC). A probability (P) value of <0.05 was used as a measure of statistical significance.

Table 1a. General Dog Information

	Number	Percent
Owners Responding to Survey with^a	746	100.0
1 Individual	447	31.0
2 Individuals	158	10.9
3 Individuals	64	4.4
4 Individuals	34	2.4
5 Individuals	43	3.0
Alive as of January 1, 1993 (Eligible Individuals)^b	1444	100.0
Bitches	808	56.0
Dogs	634	43.9
Vital Status as of November 1, 1998 (Study End)		
Alive	886	61.4
Bitches	507	62.7
Dogs	379	59.8
Died^b	221	15.3
Bitches	109	13.5
Dogs	110	17.4
Euthanized	335	23.2
Bitches	191	23.6
Dogs	144	22.7
Cause of Death Diagnosed by a Veterinarian^b	430	77.3
Bitches	222	74.0
Dogs	206	81.1
Necropsy Performed^b	80	14.4
Bitches	41	13.7
Dogs	38	15.0

^a Owner information missing for 138 (9.6%) respondents

^b Gender missing for two (0.1%) Golden Retrievers

Table 1b. General Owner Information

	Number	Percent
Golden Retriever living with you on January 1, 1993		
Number of Individuals		
0-1	322	23.6
2-5	823	60.3
5+	220	16.1
Golden Retrievers currently living with you		
Number of Individuals		
0-1	222	16.2
2-5	867	63.2
5+	283	20.6
Years in the Breed		
Number of Years		
0-5	16	1.2
6-10	290	21.6
11-20	663	49.3
20+	376	28.0
Primary Interest		
Companion Pet	1134	82.3
Obedience	1010	73.2
Show	810	58.8
Breeder	625	45.4
Agility	410	29.8
Hunting	396	28.8
Field Trials	332	24.1
Tracking	313	22.7
Rescue	198	14.4
Search & Rescue	31	2.3

Table 2. Selected Characteristics of the Survey Population

	Number (Percent)	Median	Mean	± Standard Deviation
Neutered^a				
No ^b	358 (24.8)	--	--	--
Bitches	106 (13.5)	--	--	--
Dogs	250 (39.5)	--	--	--
Yes	1062 (73.5)	--	--	--
Bitches	679 (86.5)	--	--	--
Dogs	383 (60.5)	--	--	--
Age at Neutering (years)				
Bitches	622	3.4	4.0	2.9
Dogs	358	3.1	4.0	3.3
Age as of January 1, 1993^b				
Bitches	807	4.2	5.0	3.5
Dogs	633	4.3	4.8	3.4
Age as of November 1, 1998 (If Alive)				
Bitches	507	9.0	9.1	2.3
Dogs	379	8.7	9.1	2.5
Age of Death^b				
Bitches	294	11.6	11.3	3.1
Dogs	252	11.0	10.7	3.1
Age of Death, Cause Confirmed^c				
Bitches	219	11.3	10.9	3.1
Dogs	204	10.5	10.4	3.1
Weight (pounds)^b				
Bitches	798	63.0	64.1	12.3
Dogs	625	75.0	75.4	10.8
Height (inches)^b				
Bitches	688	22.0	22.1	1.4
Dogs	549	24.0	23.8	1.2

^a Neuter status unknown for 24 (1.7%) Golden Retrievers

^b Gender missing for two (0.1%) Golden Retrievers

^c Age of death missing for five Golden Retrievers (three bitches and two dogs)

Table 3a. Reproductive Performance of Bitches

	Litter Order	Number of Litters		Number of Puppies Per Litter		
		Number	Percent	Median	Mean	± SD*
Number of Litters Whelped^{b,d}						
	0	392	50.7			
	1	120	15.5	--	--	--
	2	95	12.3	--	--	--
	3	77	10.0	--	--	--
	4	89	11.5	--	--	--
Age of Bitch						
	1	--	--	3.0	3.3	1.3
	2	--	--	4.5	4.6	1.3
	3	--	--	5.6	5.8	1.3
	4	--	--	6.1	6.5	1.6
Liveborn Puppies						
	1	--	--	8.0	7.6	2.6
	2	--	--	8.0	7.7	2.7
	3	--	--	8.0	7.1	3.0
	4	--	--	7.0	7.1	2.6
Stillborn Puppies						
	1	--	--	0.0	0.8	1.2
	2	--	--	0.0	0.7	1.3
	3	--	--	0.0	0.7	1.2
	4	--	--	0.0	0.6	1.26
Weaned Puppies						
	1	--	--	8.0	7.4	2.7
	2	--	--	8.0	7.5	2.7
	3	--	--	7.0	6.8	3.0
	4	--	--	7.0	6.9	2.7

*SD=Standard Deviation

^a Reproductive status unknown for 23 (2.8%) bitches^b Litter status unknown for 20 (2.5%) bitches^c Percentages are calculated as percent of total number of bitches (788).^d Percentages are calculated as percent of bitches that had at least one litter (397).

Table 3b. Reproductive Performance of Bitches Related to Type of Breed and Litter Size

Method of Insemination	Maximum Litter Order	Number of Litters	Number of Liveborn Puppies Per Litter		
			Median	Mean	± SD*
Natural					
	1	104	8.0	7.5	2.4
	2	85	8.0	7.4	2.6
	3	68	7.0	6.5	3.3
	4	81	7.0	7.3	2.5
Artificial – Fresh Semen					
	1	12	6.0	5.5	3.0
	2	8	4.0	5.1	3.9
	3	5	6.0	5.8	3.8
	4	5	6.0	4.4	2.7
Artificial – Chilled Semen					
	1	3	6.0	6.7	5.0
	2	2	8.5	8.5	2.1
	3	2	4.5	4.5	2.1
	4		--	--	--
Artificial – Frozen Semen					
	1		--	--	--
	2		--	--	--
	3	1	2.0	2.0	0.0
	4	1	3.0	3.0	0.0

*SD=Standard Deviation

Table 3c. Reproductive Performance of Bitches by Type of Insemination

Method of Insemination ^a	Number of Bitches	Number of Litters	Number of Puppies		
			Median	Mean	± SD ^b
Natural	362	817			
Liveborn			8.0	7.7	2.7
Stillborn			0.0	0.8	1.2
Weaned			8.0	7.4	2.7
Artificial - Fresh Semen	52	65			
Liveborn			6.0	5.9	3.2
Stillborn			1.0	1.1	1.7
Weaned			6.0	5.6	3.1
Artificial – Chilled Semen	13	15			
Liveborn			7.0	6.5	3.0
Stillborn			0	0.5	0.7
Weaned			7.0	6.5	3.0
Artificial - Frozen Semen	4	7			
Liveborn			6.0	5.6	2.2
Stillborn			1.5	1.5	0.7
Weaned			6.0	5.3	2.7
Unknown^b	13	11			
Liveborn			6.0	5.7	4.0
Stillborn			1.0	0.8	0.4
Weaned			3.5	4.0	3.2

^a Method of insemination missing for 13 bitches

^b SD=Standard Deviation

Table 4. Purpose of Breeding and Competitions Attended

Purpose for Which Dog Was Bred ^a	Number of Individuals	Percent			
Companion / Pet	883	61.1	--	--	--
Conformation	773	53.5	--	--	--
Obedience	577	40.0	--	--	--
Field Trial / Hunt Test	318	22.0	--	--	--
Hunting	126	8.7	--	--	--
Tracking	81	5.6	--	--	--
Agility	35	2.4	--	--	--

Type of Competition	Number of Individuals	%	Median Number per Individual per Year	Mean Number per Individual per Year	± Standard Deviation
None ^b	395	27.4	--	--	--
Agility Trials ^c	58	5.5	10	12.8	9.5
Conformation Shows ^c	499	47.6	12	18.1	19.7
Field Events ^c	329	31.4	6	7.5	6.3
Obedience Trials ^c	702	66.9	6	10.2	11.6
Tracking Tests ^c	94	9.0	1	1.8	1.5

^a Respondents were allowed to check more than one answer, so percentages do not add up to 100%.

^b Percent of Golden Retrievers eligible for the Golden Retriever Survey (1444)

^c Percent of Golden Retrievers that participated in any competition (1049)

Table 5. Source and Type of Husbandry

Characteristic	Number	Percent
Source^a		
Breeder – Home	572	39.6
Breeder – Kennel	484	33.5
Breeder – Self	316	21.9
Shelter or Rescue	29	2.0
Adopted from Private Party	23	1.6
Pet Store	13	0.9
Service Dog	4	0.3
Housing^b		
In the House	1205	83.4
Kennel, Inside/Outside	149	10.3
Fenced Yard	57	3.9
Crate	28	1.9
Other ^c	4	0.3
Sleeps in Owner's Bed^a		
Usually	323	22.4
Sometimes	609	42.2
Never	509	35.2

^a Missing for three (0.2%) Golden Retrievers

^b Housing information is missing for one (0.1%) Golden Retriever.

^c Other housing includes garage.

Table 6. Size by Age and Gender

Age in Years	Bitches					
	Weight (lb)		Height (in)		Weight/Height Index	
	Mean±SD ^a	Number	Mean±SD	Number	Mean±SD	Number
0 – 2.9	64.1 ± 13.9	267	21.9 ± 1.4	225	2.9 ± 0.5	224
3 – 7.9	63.6 ± 8.6	357	22.2 ± 1.4	309	2.9 ± 0.3	308
8 – 12.9	65.6 ± 16.2	159	22.1 ± 1.1	141	2.9 ± 0.7	141
13+	60.9 ± 7.5	14	22.2 ± 0.7	12	2.7 ± 0.3	12

Age in Years	Dogs					
	Weight (lb)		Height (in)		Weight/Height Index	
	Mean±SD	Number	Mean±SD	Number	Mean±SD	Number
0 – 2.9	75.6 ± 12.4	228	23.8 ± 1.2	197	3.2 ± 0.5	196
3 – 7.9	75.2 ± 9.4	272	23.7 ± 1.2	240	3.2 ± 0.3	240
8 – 12.9	75.8 ± 10.7	113	23.7 ± 1.0	101	3.2 ± 0.4	100
13+	71.9 ± 7.8	11	23.6 ± 0.9	11	3.0 ± 0.3	11

^a SD=Standard Deviation

Table 7. Weight and Height by Owner's Assessment of Puppy Growth Rate, Body Condition, and Bone Type

Characteristic	Weight (lb)		Height (in)		Weight/Height Index	
	Mean±SD ^a	Number	Mean±SD	Number	Mean±SD	Number
Puppy Growth Rate						
Slow	67.1±13.0	146	22.8±1.2	137	3.0±0.5	137
Average	69.0±12.4	1059	22.8±1.5	922	3.0±0.4	921
Maximum	71.2±11.0	34	22.8±1.3	33	3.1±0.4	33
Body Condition						
Underweight	62.0±9.1	33	22.9±1.3	29	2.7±0.3	29
Average	68.3±12.8	1235	22.8±1.5	1090	3.0±0.5	1087
Overweight	77.3±11.0	153	23.0±1.6	116	3.3±0.4	115
Obese	82.3±9.3	3	22.3±1.5	3	3.7±0.4	3
Bone Type						
Small Boned	58.4±7.5	174	21.8±1.3	155	2.7±0.3	154
Medium Boned	67.5±10.3	892	22.7±1.4	772	3.0±0.4	769
Large Boned	78.4±13.4	343	23.7±1.5	296	3.3±0.4	296

^a SD=Standard Deviation

Table 8a. Type of Daily Diet of Adult Individuals

Type of Diet	Some		Never		Unknown		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Adult ^a								
Dry	901	87.1	53	5.1	80	7.7	1034	100.0
Can	121	11.7	1216	84.2	20	1.9	1034	100.0
Home Prepared	53	5.1	972	94.0	9	0.9	1034	100.0
Table	65	6.3	954	92.3	15	1.5	1034	100.0
Scraps								
Other	109	10.5	913	88.3	12	1.2	1034	100.0

^aAdult means 9 months to 7 years of age.

Table 8b. Frequency of Feeding for Adult^a Individuals

Type of Food	Daily			Weekly			Monthly		
	Times Fed	Number	Percent	Times Fed	Number	Percent	Times Fed	Number	Percent
Dry									
	1	289	21.0	1	1	100.0	--	--	--
	2	957	69.6	--	--	--	--	--	--
	3	12	0.9	--	--	--	--	--	--
	4	1	0.1	--	--	--	--	--	--
	Unknown	116	8.4	--	--	--	--	--	--
	Total	1375	100		1	100		--	--
Canned									
	1	100	43.9	0	2	3.9	1	8	47.1
	2	957	42.1	1	10	19.6	2	7	41.2
	3	2	0.9	2	12	23.5	5	1	5.9
	Unknown	30	13.2	3	9	17.6	Unknown	1	5.9
	--	--	--	4	7	13.7	--	--	--
	--	--	--	5	2	3.9	--	--	--
	--	--	--	Unknown	9	17.6	--	--	--
	Total	1089	100.1		51	99.8		17	100.1
Home Prepared									
	0	1	1.1	1	23	33.3	1	7	53.8
	1	39	42.9	2	13	18.8	2	2	15.4
	2	34	37.4	3	11	15.9	3	1	7.7
	Unknown	17	18.7	4	8	11.6	4	1	7.7
	--	--	--	5	1	1.4	6	1	7.7
	--	--	--	6	4	5.8	Unknown	1	7.7
	--	--	--	Unknown	9	13.0	--	--	--
	Total	91	100.1		69	99.8		13	100

^aAdult means 9 months to 7 years of age

Table 8b. Frequency of Feeding for Adult^a Individuals
Page 2

Type of Food	Daily			Weekly			Monthly		
	Times Fed	Number	Percent	Times Fed	Number	Percent	Times Fed	Number	Percent
Table Scraps									
	1	68	61.8	0	1	0.5	1	18	32.1
	2	19	17.3	1	61	33.3	2	20	35.7
	3	1	0.9	2	42	23.0	3	10	17.9
	Unknown	22	20.0	3	39	21.3	4	2	3.6
	--	--	--	4	18	9.8	9	1	1.8
	--	--	--	5	4	2.2	Unknown	5	8.9
	--	--	--	7	1	0.5	--	--	--
	--	--	--	Unknown	17	9.3	--	--	--
	Total	110	100		183	99.9		56	100
Other									
	1	88	53.0	1	10	28.6	1	3	60.0
	2	37	22.3	2	7	20.0	4	1	20.0
	3	6	3.6	3	9	25.7	5	1	20.0
	4	8	4.8	4	6	17.1	--	--	--
	5	3	1.8	5	1	2.9	--	--	--
	6	1	0.6	6	2	5.7	--	--	--
	7	1	0.6	--	--	--	--	--	--
	9	1	0.6	--	--	--	--	--	--
	Unknown	21	12.7	--	--	--	--	--	--
	Total	166	100		35	100		5	100

^aAdult means 9 months to 7 years of age.

Table 9a. Type of Daily Diet of Senior Individuals

Type of Diet	Some		Never		Unknown		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Senior ^a								
Dry	316	77.5	72	17.6	20	4.9	408	100.0
Can	71	17.4	327	80.1	10	2.5	408	100.0
Home Prepared	24	5.9	377	92.4	7	1.7	408	100.0
Table Scraps	26	6.4	376	92.2	6	1.5	408	100.0
Other	44	10.8	364	89.2	0	0.0	408	100.0

^aSenior means greater than 7 years of age.

Table 9b. Frequency of Feeding for Senior^a Individuals

Type of Food	Daily			Weekly			Monthly		
	Times Fed	Number	Percent	Times Fed	Number	Percent	Times Fed	Number	Percent
Dry									
	0	3	0.3	--	--	--	--	--	--
	1	171	19.9	--	--	--	--	--	--
	2	617	71.7	--	--	--	--	--	--
	3	15	1.7	--	--	--	--	--	--
	5	1	0.1	--	--	--	--	--	--
	Unknown	53	6.2	--	--	--	--	--	--
	Total	860	99.9						
Canned									
	1	64	40.3	1	9	27.3	0	1	8.3
	2	72	45.3	2	9	27.3	1	5	41.7
	3	6	3.8	3	7	21.2	2	4	33.3
	5	1	0.6	4	2	6.1	5	1	8.3
	Unknown	16	10.1	5	1	3.0	Unknown	1	8.3
	--	--	--	Unknown	5	15.2	--	--	--
	Total	159	100.1		33	100.1		12	99.9
Home Prepared									
	1	27	35.5	1	13	32.5	1	7	63.6
	2	31	40.8	2	13	32.5	3	2	18.2
	3	1	1.3	3	2	5.0	5	2	9.1
	5	2	2.6	4	6	15.0	6	1	9.1
	Unknown	15	19.7	5	1	2.5	--	--	--
	--	--	--	6	1	2.5	--	--	--
	--	--	--	7	2	5.0	--	--	--
	--	--	--	Unknown	2	5.0	--	--	--
	Total	76	99.9		40	100		12	100

^aSenior means greater 7 years of age

Table 9b. Frequency of Feeding for Senior^a Individuals

Page 2

Type of Food	Daily			Weekly			Monthly		
	Times Fed	Number	Percent	Times Fed	Number	Percent	Times Fed	Number	Percent
Table Scraps									
	1	57	71.3	1	40	35.7	1	13	39.4
	2	9	11.3	2	23	20.5	2	11	33.3
	3	2	2.5	3	20	17.9	3	5	15.2
	Unknown	12	15.0	4	15	13.4	4	5	6.1
	--	--	--	5	3	2.7	Unknown	2	6.1
	--	--	--	6	1	0.9	--	--	--
	--	--	--	7	3	2.7	--	--	--
	--	--	--	Unknown	7	6.3	--	--	--
	Total	80	100.1		112	100.1		36	100.1
Other									
	1	60	53.6	1	5	33.3	1	1	50.0
	2	27	24.1	2	5	33.3	2	1	50.0
	3	9	8.0	3	4	26.7	--	--	--
	4	1	0.9	4	1	6.7	--	--	--
	5	1	0.9	--	--	--	--	--	--
	9	14	12.5	--	--	--	--	--	--
	Total	112	100		15	100		2	100

^aSenior means greater than 7 years of age

Table 10. Ingredients in Commercial Foods Fed Daily Based on the Order They Appear on the Label^a

	Label Order							
	First ^a		Second		Third		Fourth	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Dry Food								
Red Meat	150	27.0	31	5.8	6	1.2	13	2.7
White Meat	247	44.5	114	21.2	49	9.6	91	18.6
Plant	134	24.1	335	66.1	443	86.4	321	65.8
Fish	--	--	--	--	1	0.2	3	0.6
Eggs	--	--	--	--	3	0.6	2	0.4
Unknown	24	4.3	37	6.9	11	2.1	58	11.9
Canned Food								
Red Meat	13	13.0	14	15.6	20	22.5	9	10.5
White Meat	51	51.0	29	32.2	11	12.4	16	18.6
Meat by Product	20	20.0	16	17.8	14	15.7	3	3.5
Other	16	16.0	31	34.4	44	49.4	58	67.4

^aPercent of owners answering question

Table 11a. Home Prepared Foods Fed Daily in Order of Most Commonly Fed^a

Type of Food	Owner Reported Order							
	First		Second		Third		Fourth	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
White Meat	56	23.0	21	10.0	4	2.5	6	5.3
Meat Other or Unspecified	44	18.1	22	10.5	10	6.3	8	7.1
Vegetables	42	17.3	55	26.3	52	32.7	33	29.2
Red Meat	31	12.8	24	11.5	14	8.8	2	1.8
Yogurt	18	7.4	6	2.9	10	6.3	3	2.7
Eggs	10	4.1	12	5.7	15	9.4	9	8.0
Fruit	7	2.9	11	5.3	4	2.5	8	7.1
Dairy	4	1.6	8	3.8	10	6.3	9	8.0
Fish	3	1.2	4	1.9	7	4.4	2	1.8
Pasta	--	--	3	1.4	3	1.9	1	0.9
Other (Including Bones)	28	11.5	43	20.6	30	18.9	32	28.3

^aPercent of owners answering question

Table 11b. Other Types of Food Regularly Fed

Type of Food	Adult		Senior	
	Number	Percent	Number	Percent
Meat/Fish	33	14.9	11	15.3
Fruits/Veggies	36	16.3	25	34.7
Dog Biscuits/Treats	107	48.4	20	27.8
Yogurt	16	7.2	3	4.2
Eggs	8	3.6	2	2.8
Other	21	9.5	11	15.3
Total	221	99.9	72	100.1

Table 12. Frequency of Supplements in Adult^a and Senior^b Individuals^c

Supplement	Adult						Senior					
	Daily		Weekly		Monthly		Daily		Weekly		Monthly	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Multivitamin	558	38.6	18	1.2	2	0.1	277	19.2	9	0.6	3	0.2
Mineral	169	11.7	6	0.4	--	--	98	6.8	5	0.3	--	--
Other	243	16.8	3	0.2	4	0.3	294	20.4	2	0.1	1	0.1

^aAdult means 9 months to 7 years of age

^bSenior means greater than 7 years of age

^cPercent of owners answering question

Table 13a. Daily Diet and Body Condition

Type of Diet	Underweight		Average		Overweight		Total	
Adult Diet	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Dry Food								
Yes	19	95.0	854	95.7	107	88.4	980	94.9
No	1	5.0	38	4.3	14	11.6	53	5.1
Canned Food								
Yes	3	15.0	120	13.5	18	14.9	141	13.7
No	17	85.0	772	86.5	103	85.1	892	86.3
Home Prepared Food								
Yes	1	5.0	52	5.8	9	7.4	62	6.0
No	19	95.0	840	94.2	112	92.6	971	94.0
Table Scraps								
Yes	3	15.0	63	7.1	14	11.6	80	7.7
No	17	85.0	829	92.9	107	88.4	953	92.3
Senior^a Diet								
Dry Food								
Yes	9	69.2	292	82.0	33	89.2	334	82.3
No	4	30.8	64	18.0	4	10.8	72	17.7
Canned Food								
Yes	3	23.1	65	18.3	13	35.1	81	20.0
No	10	76.9	291	81.7	24	64.9	325	80.0
Home Prepared Food								
Yes	2	15.4	27	7.6	2	5.4	31	7.6
No	11	84.6	329	92.4	35	94.6	375	92.4
Table Scraps								
Yes	4	30.8	23	6.5	5	13.5	32	7.9
No	9	69.2	333	93.5	32	86.5	374	92.1

^aSenior is greater than 7 years of age.

Table 13b. Daily Diet and Size

Type of Diet	Weight(lb)		Height(in)		Weight/Height Index	
Adult Diet	Number	Mean±SD	Number	Mean±SD	Number	Mean±SD
Dry Food						
Yes	968	68.9±12.7	838	22.8±1.6	835	3.0±0.4
No	51	71.8±11.5	41	23.1±1.5	41	3.1±0.4
Canned Food						
Yes	140	70.0±10.5	125	23.2±2.0	125	3.0±0.4
No	879	70.0±13.0	754	22.8±1.5	751	3.0±0.4
Home Prepared Food						
Yes	60	68.4±10.6	55	22.9±2.3	55	3.0±0.4
No	959	69.2±12.8	824	22.9±1.5	821	3.0±0.4
Table Scraps						
Yes	77	70.7± 9.3	72	23.5±2.0	71	3.0±0.4
No	942	70.0±12.9	807	22.8±1.6	805	3.0±0.4
Senior^a Diet						
Dry Food						
Yes	332	69.1±14.1	298	22.7±1.3	297	3.0±0.6
No	72	69.0±10.9	61	23.0±1.3	61	3.0±0.4
Canned Food						
Yes	80	70.8±10.6	73	22.9±1.3	72	3.1±0.4
No	324	68.7±14.2	286	22.8±1.3	286	3.0±0.6
Home Prepared Food						
Yes	30	68.2±11.2	25	22.9±1.6	25	3.0±0.4
No	374	69.2±13.7	334	22.8±1.3	333	3.0±0.6
Table Scraps						
Yes	32	66.7±10.1	24	22.8±1.6	24	2.9±0.3
No	372	69.3±13.8	335	22.9±1.3	334	3.0±0.6

^aSenior is greater than 7 years of age.

Table 14. Growth and Body Conformation

Characteristic	Puppy		Adult	
	Number	Percent	Number	Percent
Desired Growth Rate				
Slow	146	10.1	--	--
Average	1066	73.8	--	--
Maximum	38	2.6	--	--
Don't Know ^a	194	13.4	--	--
Body Condition^b				
Underweight	96	6.6	33	2.3
Average	1258	87.1	1250	86.6
Overweight	42	2.9	155	10.7
Obese	7	0.5	3	0.2
Bone Type^c				
Small Boned	--	--	176	12.2
Medium Boned	--	--	902	62.5
Large Boned	--	--	347	24.0

^a Includes eleven (0.8%) missing

^b Puppy body condition missing for 41 (2.8%) Golden Retrievers; adult body condition missing for three (0.2%) Golden Retrievers

^c Adult bone structure missing for 19 (1.3%) Golden Retrievers

Table 15. Personality Score as Characterized by Owners

Personality Trait	Number	Median Score ^a	Mean Score ^a	± Standard Deviation ^a
Happy	1442	9	9.0	1.3
Trainable	1442	9	8.5	1.7
Active	1431	7	6.9	1.9
Excitable	1433	6	5.6	2.2
Submissive To People	1438	3	4.2	3.2
Submissive To Dogs	1438	3	3.4	2.5
Fearful of Environmental Changes ^b	1439	2	3.3	2.9
Aggressive to Dogs	1438	2	2.4	2.0
Fearful of People	1439	1	1.5	1.3
Aggressive to People	1440	1	1.3	0.9

^a Possible scores are 1 – 10 where 1 = never 10 = always

^b Environmental Changes include thunder, guns, firecrackers, other loud noises, etc.

Table 16. Frequency of Vaccination

Type of Vaccination	Frequency of Vaccination											
	Yearly		Every 2 Years		Every 3 Years		Sporadic		Never		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Rabies	486	34.4	215	15.2	695	49.2	15	1.1	2	0.1	1413	100.0
Distemper	1306	93.0	40	2.8	13	1.0	41	2.9	5	0.4	1405	100.0
Parvovirus	1293	92.7	42	3.0	10	0.7	45	3.2	5	0.4	1395	100.0
Leptospirosis	1102	87.3	25	2.0	8	0.6	52	4.1	76	6.0	1263	100.0
Lyme disease	356	39.4	9	1.0	1	0.1	113	12.5	425	47.0	804	100.0
Kennel Cough	748	64.6	8	0.7	4	0.3	244	21.1	153	13.2	1157	100.0
Other	236	86.8	5	1.8	--	--	28	10.3	3	1.1	272	100.0

Table 17. Frequency of Routine Worming and Heartworm Prevention

	Routine of Worming		Heartworm Prevention	
	Number	Percent	Number	Percent
Daily	--	--	106	7.5
Monthly	--	--	1097	78.1
Yearly	301	22.8	--	--
Every 2 Years	14	1.1	--	--
Every 3 Years	5	0.4	--	--
Sporadic	632	47.9	77	5.5
Never	367	27.8	125	8.9
Total	1319	100	1405	100

Table 18. Frequency of Exposure to Chemicals or Water

Type of Exposure	Frequency of Exposure									
	Weekly		Monthly		Sporadic		Never		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Contact with Lawn Chemicals										
Owner Applied	6	0.6	28	2.6	384	36.2	643	60.6	1061	100.0
Commercial Applied	9	0.8	41	3.7	361	32.5	701	63.0	1112	100.0
Tick/Flea										
Dips	5	0.4	33	2.6	488	38.4	744	58.6	1270	100.0
Products Applied as Drops on Skin	2	0.2	224	17.9	307	24.5	721	57.5	1254	100.0
Shampoos	28	2.2	67	5.2	797	61.4	405	31.2	1297	100.0
Sprays	19	1.6	22	1.8	634	52.4	535	44.2	1210	100.0
Other	16	2.1	97	12.4	157	20.1	510	65.4	780	100.0
Swimming										
Pool	56	5.8	15	1.6	235	24.5	654	68.1	960	100.0
Fresh Water	341	25.8	113	8.6	699	53.0	167	12.7	1320	100.0
Salt Water	33	3.4	22	2.2	328	33.3	602	61.1	985	100.0

Table 19. Frequency of Types of Treatment for Behavior Problems

Types of Treatment	Number	Percent ^a
Professional Counseling or Behavior Modification	26	1.8
Medically Treated	20	1.4
Euthanasia Was Considered	14	1.0

^a Percent of all dogs.

Table 20. Three Most Important Health Related Disorders Ranked by Owners Prior to the Survey Versus Actual Survey Results

Ranking of Importance/ Occurrence	Survey Results*				
	Owners' Opinion	Death		Disease or Condition	
		Cause	Percent of All Deaths	Cause	Lifetime Risk
#1	Neoplasia	Neoplasia	61.8	Hot Spot	1 in 3
#2	Elbow / Hip Dysplasia	Unknown Cause	9.1	Hypothyroidism	1 in 4
#3	Cardiovascular	Neurological	7.0	Hemangiosarcoma	1 in 5

*Confirmed by a veterinarian

Table 21. Prevalence of Reported and Veterinary Confirmed Health Related Disorders Reported by Organ System and Type

Health Disorder	Number of Reports	Percent of Reported Incidents by System Disease Type	Number of Confirmed Reports	Percent of Confirmed Reports by System Disease Type
Neoplasia				
Breast	45	6.8	44	7.0
Lipoma ^a	119	17.9	110	17.5
Osteosarcoma	33	5.0	32	5.1
Lymphosarcoma	73	11.0	71	11.3
Melanoma	25	3.8	25	4.0
Hemangiosarcoma	106	16.0	100	15.9
Testicular	15	2.3	15	2.4
Liver	13	2.0	9	1.4
Mast Cell	67	10.1	65	10.3
Squamous Cell	11	1.7	11	1.7
Other	156	23.5	148	23.5
Total Incidents	663		630	
Total Individuals	421		518	
Cardiovascular				
Heart Arrhythmia	22	11.7	21	12.2
Heart Murmur	74	39.4	67	39.0
Cardiomyopathy	10	5.9	10	5.8
Heart Failure	25	13.3	20	11.6
Pulmonic Stenosis	1	0.5	1	0.6
Subaortic Stenosis	20	10.6	20	11.6
Valve Dysfunction	8	4.3	8	4.7
Heartworm Infection	8	4.3	8	4.7
Other	20	10.6	17	10.0
Total Incidents	188		172	
Total Individuals	152		153	
Allergies				
Allergic Dermatitis				
Due To:				
Fleas	219	37.8	182	38.1
Inhaled Allergens	147	25.3	132	27.6
Food	92	15.9	66	13.8
Contact	16	2.8	24	5.0
Pond / Lake	5	0.9	2	0.4
Water				
Flea Dip	3	0.5	3	0.6
Other Contact	31	5.3	30	6.3

^a A Lipoma is usually not malignant, unlike most of the other neoplasias in this list.

Table 21. Prevalence of Reported and Confirmed Health Related Disorders Reported by Organ System and Type

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Health Disorder	Number of Reports	Percent of Reported Incidents by System Disease Type	Number of Confirmed Reports	Percent of Confirmed Reports by System Disease Type
Allergies (cont.)				
Drug Allergy	12	2.1	--	--
Antibiotic	6	1.0	--	--
Sulfa Drug	8	1.4	--	--
Vaccine	7	1.2	5	1.0
Atopic Rhinitis	4	0.7	4	0.8
Anesthetic	11	1.0	8	1.7
Other	12	2.1	11	2.3
Total Incidents	580		478	
Total Individuals	360		343	
Endocrine				
Hypothyroidism	343	86.0	330	86.6
Hyperthyroidism	15	3.8	13	3.4
Cushing's Syndrome	16	4.0	14	3.7
Diabetes Mellitus	1	0.3	1	0.3
Pancreatic	7	1.8	7	1.8
Insufficiency				
Addison's Disease	5	1.3	4	1.0
Other	12	3.0	12	3.1
Total Incidents	399		381	
Total Individuals	371		364	
Gastrointestinal				
Bloat With Torsion	25	8.3	24	13.6
Bloat Without	18	6.0	17	9.6
Torsion				
Colitis (Chronic)	4	1.3	3	1.7
Esophageal Disorder	14	4.7	14	7.9
Excessive Vomiting	30	10.0	24	13.6
Excessive Flatulence	26	8.7	12	6.8
Excessive Diarrhea	41	13.7	38	21.5
Gastritis	44	14.7	39	22.0
Malabsorption	5	1.7	4	2.3
Foreign Body	--	--	--	--
Other	3	1.0	2	1.1
Total Incidents	300		177	
Total Individuals	163		136	

Table 21. Prevalence of Reported and Confirmed Health Related Disorders Reported by Organ System and Type

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Health Disorder	Number of Reports	Percent of Reported Incidents by System Disease Type	Number of Confirmed Reports	Percent of Confirmed Reports by System Disease Type
Hematologic				
Hemophilia	--		--	
Autoimmune Hemolytic Anemia	4	9.5	2	6.7
Chronic Anemia	6	14.3	6	20.0
Thrombocytopenia	6	14.3	6	20.0
von Willebrand's Disease	15	35.7	14	46.7
Bone Marrow Failure	3	7.1	2	6.7
Other	8	19.0	0	
Total Incidents	42		30	
Total Individuals	31		28	
Urinary Tract				
Bladder Infection	98	54.4	96	63.2
Bladder Stones	11	6.1	11	7.2
Kidney Disease	23	12.8	22	14.5
Kidney Failure	26	14.4	23	15.1
Other	22	12.2	0	
Total Incidents	180		152	
Total Individuals	140		134	
Neurological				
Seizures (Unknown Origin)	101	49.5	73	57.5
Seizures (Known Origin)	28	13.7	23	18.1
Nerve Degeneration	15	7.4	14	11.0
Wobbler Syndrome	3	1.5	2	1.6
Dementia (Senility)	14	6.9	7	5.5
Tremors (Generalized)	10	4.9	8	6.3
Other	33	16.2	0	
Total Incidents	204		127	
Total Individuals	160		122	

Table 21. Prevalence of Reported and Confirmed Health Related Disorders Reported by Organ System and Type

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Health Disorder	Number of Reports	Percent of Reported Incidents by System Disease Type	Number of Confirmed Reports	Percent of Confirmed Reports by System Disease Type
Musculoskeletal				
Spondylosis	48	6.7	43	17.0
Hip Dysplasia	263	36.9	253	39.5
Elbow Dysplasia	15	2.1	10	1.6
Arthritis	26	3.6	24	3.7
(Autoimmune)				
Arthritis (Not Autoimmune)	187	26.2	151	23.6
Eosinophilic Panosteitis	35	4.9	32	5.0
Degenerative Disk Disease	31	4.3	24	3.7
Osteochondritis Dissecans	35	4.9	33	5.1
Anterior Cruciate Ligament Tear	30	4.2	30	4.7
Patella Luxation	7	1.0	7	1.1
Other	36	5.0	34	5.3
Total Incidents	713		641	
Total Individuals	506		488	
Eyes				
Cataracts	184	44.2	162	42.6
Entropion	17	4.1	16	4.2
Ectropion	6	1.4	5	1.3
Distichiasis	69	16.6	66	17.4
Injury	22	5.3	21	5.5
Progressive Retinal Atrophy	6	1.4	6	1.6
Glaucoma	11	2.6	11	2.9
Prolapsed Third Eyelid	4	1.0	3	0.8
Iris Cyst	13	3.1	13	3.4
Uvitis	17	4.1	16	4.2
Other	67	16.1	61	16.1
Total Incidents	416		380	
Total Individuals	314		316	

Table 21. Prevalence of Reported and Confirmed Health Related Disorders Reported by Organ System and Type

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Health Disorder	Number of Reports	Percent of Reported Incidents by System Disease Type	Number of Confirmed Reports	Percent of Confirmed Reports by System Disease Type
Ears				
Chronic/Repeated Infection	292	63.9	276	78.6
Hearing Problem	121	26.5	38	10.8
Hematoma	25	5.5	24	6.8
Other	19	4.2	13	3.7
Total Incidents	457		351	
Total Individuals	396		330	
Reproductive System				
Bitches				
Chronic False Pregnancy	26	9.9	14	7.5
Irregular Heat Cycles	24	9.1	8	4.3
Infertility	23	8.7	9	4.8
Difficult Whelping	53	20.1	37	19.8
Pyometra	61	23.1	61	32.6
Mastitis	35	13.3	31	16.6
Malformed Puppies	18	6.8	12	6.4
Failure to Carry To Term	6	2.3	6	3.2
Poor Mothering	11	4.2	4	2.1
Instinct				
Insufficient Milk	2	0.8	1	0.5
Other	4	1.5	4	2.1
Total Incidents	263		187	
Total Bitches	200		151	
Dogs				
Testicular Atrophy	7	8.6	6	8.3
Infertility	16	19.8	12	16.7
Enlarged Prostate	24	29.6	23	31.9
Abnormal Semen	10	12.3	9	12.5
Lack of Libido	3	3.7	2	2.8
Unilateral Cryptorchidism	12	14.8	11	15.3

Table 21. Prevalence of Reported and Confirmed Health Related Disorders Reported by Organ System and Type

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Health Disorder	Number of Reports	Percent of Reported Incidents by System Disease Type	Number of Confirmed Reports	Percent of Confirmed Reports by System Disease Type
Dogs continued				
Bilateral Cryptorchidism	3	3.7	3	4.2
Other	6	7.4	6	8.3
Total Incidents	81		72	
Total Dogs	64		57	
Total Incidents	344		259	
Total Individuals	264		208	
Skin/Coat				
Dull and Dry	114	11.2	70	8.8
Coat Color Change	39	3.8	8	1.0
Sebaceous Cysts	213	21.0	197	24.8
Sebaceous Adenitis	4	0.4	4	0.5
Hot Spots	526	51.7	425	53.6
Seborrhea	48	4.7	38	4.8
Pigment Abnormalities	25	2.5	8	1.0
Lick Granuloma	14	1.4	12	1.5
Other	34	3.3	31	3.9
Total Incidents	1017		793	
Total Individuals	702		599	
Trauma/Accidents				
Lameness Requiring Treatment	81	29.9	77	30.4
Laceration Requiring Stitches	96	35.4	90	35.6
Fracture/Broken Bone	49	18.1	48	19.0
Other	45	16.6	38	15.0
Total Incidents	271		253	
Total Individuals	213		239	

Table 21. Prevalence of Reported and Confirmed Health Related Disorders Reported by Organ System and Type

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Health Disorder	Number of Reports	Percent of Reported Incidents by System Disease Type	Number of Confirmed Reports	Percent of Confirmed Reports by System Disease Type
Infections/Infestations				
Bacterial				
External Ear Otitis	151	36.9	138	36.0
Anal Sacculitis	46	11.2	46	12.0
Interdigital	22	5.4	19	5.0
Infection				
Lyme Disease	46	11.2	44	11.5
Pneumonia	20	4.9	20	5.2
Cystitis	58	14.2	56	14.6
Tonsillitis	16	3.9	16	4.2
Septicemia	3	0.7	3	0.8
Prostatitis	9	2.2	9	2.3
Other	38	9.3	32	8.4
Total Incidents	409		383	
Total Individuals	308		312	
Viral				
Tracheobronchitis	136	84.0	118	82.0
Parvovirus	8	4.9	8	5.5
Coronavirus	12	7.2	12	8.3
Distemper	2	1.2	2	1.4
Other	4	2.5	4	2.8
Total Incidents	162		144	
Total Individuals	154		139	
Fungal				
Ringworm	15	51.7	14	53.8
Yeast	3	10.3	2	7.7
Other	11	37.9	10	38.5
Total Incidents	29		26	
Total Individuals	17		25	
Parasitic				
Roundworms	162	23.6	139	22.1
Whipworms	119	17.3	116	18.4
Hookworms	72	10.5	72	11.4
Tapeworms	64	9.3	47	7.5

Table 21. Prevalence of Reported and Confirmed Health Related Disorders Reported by Organ System and Type

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Health Disorder	Number of Reports	Percent of Reported Incidents by System Disease Type	Number of Confirmed Reports	Percent of Confirmed Reports by System Disease Type
Parasitic continued				
Demodectic	50	7.3	49	7.8
Mange				
Sarcoptic Mange	9	1.3	9	1.4
Giardia	107	15.6	98	15.6
Coccidia	97	14.1	93	14.8
Other	7	1.0	7	1.1
Total Incidents	687		630	
Total Individuals	472		451	
Unknown Type Infections	4	100.0	4	100.00
Oral				
Abnormal Dentition	23	15.8	12	20.0
Missing Teeth	82	56.2	33	55.0
Malocclusion	34	23.3	12	20.0
Other	7	4.8	3	5.0
Total Incidents	146		60	
Total Individuals	132		58	
Behavior Problems				
Fear Aggression	27	22.1	5	25.0
Dominance Aggression	54	44.3	6	30.0
Inappropriate Urination	24	19.7	6	30.0
Other	17	13.9	3	15.0
Total Incidents	122		20	
Total Individuals	94		19	
Congenital Defects				
Umbilical Hernia	6	31.6	6	42.9
Cleft lip or palate	1	5.3	--	--
Other	12	63.2	8	57.0
Total Incidents	19		14	
Total Individuals	7		14	

Table 22. Prevalence and Outcome of Confirmed Health Related Disorders Reported by Organ System and Type

Health Disorder	Confirmed Reports			Treated		Cured	
	#	% ^a		#	% ^b	#	% ^c
Neoplasia							
Breast	44	7.0	Yes	37	84.1	28	75.7
			No	2	4.5	0	0.0
Lipoma	110	17.5	Yes	32	29.1	26	81.3
			No	49	44.5	2	4.1
Osteosarcoma	32	5.1	Yes	22	68.8	6	27.3
			No	10	31.3	0	0.0
Lymphosarcoma	71	11.3	Yes	48	67.6	6	12.5
			No	17	23.9	1	5.9
Melanoma	25	4.0	Yes	21	84.0	15	71.4
			No	2	8.0	0	0.0
Hemangiosarcoma	100	15.9	Yes	50	50.0	6	12.0
			No	41	40.2	0	0.0
Testicular	15	2.4	Yes	11	73.3	10	90.9
			No	1	6.7	0	0.0
Liver	9	1.4	Yes	1	11.1	1	100.0
			No	7	77.8	0	0.0
Mast Cell	65	10.3	Yes	57	87.7	45	79.0
			No	3	4.6	0	0.0
Squamous Cell	11	1.7	Yes	9	81.8	8	88.9
			No	2	18.2	0	0.0
Other	148	23.5	Yes	78	52.7	43	55.1
			No	50	33.8	1	2.0
Total	630	100.0	Yes	366	58.1	194	53.0
			No	184	29.2	4	2.2
Cardiovascular							
Heart Arrhythmia	21	12.2	Yes	10	47.6	3	30.0
			No	4	19.0	1	25.0
Heart Murmur	67	39.0	Yes	1	1.5	1	100.0
			No	46	68.7	9	19.6
Cardiomyopathy	10	5.8	Yes	9	90.0	0	0.0
			No	0	0.0	0	0.0
Heart Failure	20	11.6	Yes	8	40.0	3	37.5
			No	9	45.0	0	0.0
Pulmonic Stenosis	1	0.6	Yes	0	0.0	0	0.0
			No	1	100.0	0	0.0

Table 22. Prevalence and Outcome of Confirmed Health Related Disorders Reported by Organ System and Type

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Health Disorder	Confirmed Reports			Treated		Cured	
	#	% ^a		#	% ^b	#	% ^c
Cardiovascular continued							
Subaortic Stenosis	20	11.6	Yes	2	10.0	0	0.0
			No	15	75.0	0	0.0
Valve Dysfunction	8	4.7	Yes	2	25.0	1	50.0
			No	4	50.0	0	0.0
Heartworm Infection	8	4.7	Yes	7	87.5	7	100.0
			No	0	0.0	0	0.0
Other	17	10.0	Yes	9	52.9	3	33.3
			No	4	23.5	0	0.0
Total	172	100.0	Yes	48	27.9	18	37.5
			No	83	48.3	10	12.0
Allergies							
Allergic Dermatitis Due To:							
Fleas	182	40.0	Yes	155	85.2	77	49.7
			No	2	1.1	0	0.0
Inhaled Allergens	132	28.3	Yes	100	75.8	23	23.0
			No	9	6.8	1	11.1
Food	66	14.1	Yes	57	86.4	25	43.9
			No	2	3.0	0	0.0
Contact	24	5.1	Yes	20	83.3	6	30.0
			No	0	0.0	0	0.0
Flea Dip	3	0.6	Yes	2	66.7	1	50.0
			No	1	33.3	1	100.0
Pond / Lake Water	2	0.4	Yes	1	50.0	1	100.0
			No	1	50.0	0	0.0
Other Contact	30	6.4	Yes	24	80.0	11	45.8
			No	1	3.3	1	100.0
Atopic Rhinitis	4	0.9	Yes	3	75.0	0	0.0
			No	1	25.0	0	0.0
Drug Allergy	0	0.0	Yes	0	0.0	0	0.0
			No	0	0.0	0	0.0
Vaccine	5	1.1	Yes	2	40.0	0	0.0
			No	0	0.0	0	0.0
Anesthetic	8	1.7	Yes	5	62.5	4	80.0
			No	1	12.5	0	0.0

Table 22. Prevalence and Outcome of Confirmed Health Related Disorders Reported by Organ System and Type

Page 3

Health Disorder	Confirmed Reports			Treated		Cured	
	#	% ^a		#	% ^b	#	% ^c
Allergies continued							
Other	11	2.4	Yes	10	90.9	5	50.0
			No	0	0.0	0	0.0
Total	467	100.0	Yes	379	81.2	153	40.4
			No	18	3.9	3	16.7
Endocrine							
Hypothyroidism	330	86.6	Yes	202	61.2	63	31.2
			No	5	1.5	1	20.0
Hyperthyroidism	13	3.4	Yes	7	53.8	4	57.1
			No	0	0.0	0	0.0
Cushing's Syndrome	14	3.4	Yes	11	78.6	0	0.0
			No	0	0.0	0	0.0
Diabetes Mellitus	1	0.3	Yes	0	0.0	0	0.0
			No	0	0.0	0	0.0
Pancreatic Insufficiency	7	1.8	Yes	6	85.7	3	50.0
			No	0	0.0	0	0.0
Addison's Disease	4	1.0	Yes	2	50.0	0	0.0
			No	0	0.0	0	0.0
Other	12	3.1	Yes	10	83.3	4	40.0
			No	0	0.0	0	0.0
Total	381	100.0	Yes	238	62.5	74	31.1
			No	5	1.3	1	20.0
Gastrointestinal							
Bloat With Torsion	24	13.6	Yes	18	75.0	13	72.2
			No	5	20.8	1	20.0
Bloat Without Torsion	17	9.6	Yes	13	76.5	8	61.5
			No	4	23.5	1	25.0
Colitis (Chronic)	3	1.7	Yes	3	100.0	1	33.3
			No	0	0.0	0	0.0
Esophageal Disorder	14	7.9	Yes	5	35.7	1	20.0
			No	5	35.7	0	0.0
Excessive Vomiting	24	13.6	Yes	23	95.8	12	52.2
			No	1	4.2	1	100.0
Excessive Flatulence	12	6.8	Yes	10	83.3	5	50.0
			No	1	8.3	0	0.0
Excessive Diarrhea	38	21.5	Yes	36	94.7	25	69.4
			No	1	2.6	1	100.0

Table 22. Prevalence and Outcome of Confirmed Health Related Disorders Reported by Organ System and Type

Page 4

Health Disorder	Confirmed Reports			Treated		Cured	
	#	% ^a		#	% ^b	#	% ^c
Gastrointestinal continued							
Gastritis	39	22.0	Yes	30	76.9	18	60.0
			No	0	0.0	0	0.0
Malabsorption	4	2.3	Yes	3	75.0	1	33.3
			No	0	0.0	0	0.0
Foreign Body	0	0.0	Yes	0	0.0	0	0.0
			No	0	0.0	0	0.0
Other	2	1.1	Yes	2	100.0	2	100.0
			No	0	0.0	0	0.0
Total	177	100.0	Yes	143	80.8	86	60.1
			No	17	9.6	4	23.5
Hematologic							
Hemophilia	0	0.0	Yes	0	0.0	0	0.0
			No	0	0.0	0	0.0
Autoimmune Hemolytic Anemia	2	6.7	Yes	2	100.0	1	50.0
			No	0	0.0	0	0.0
Chronic Anemia	6	20.0	Yes	3	50.0	0	0.0
			No	2	33.3	0	0.0
Thrombocytopenia	6	20.0	Yes	5	83.3	2	40.0
			No	1	16.7	0	0.0
von Willebrand's Disease	14	46.7	Yes	0	0.0	0	0.0
			No	9	64.3	0	0.0
Bone Marrow Failure	2	6.7	Yes	1	50.0	0	0.0
			No	0	0.0	0	0.0
Other	0	0.0	Yes	0	0.0	0	0.0
			No	0	0.0	0	0.0
Total	30	100.0	Yes	11	40.0	0	36.7
			No	12	43.3	0	40.0
Urinary Tract							
Bladder Infection	96	63.2	Yes	91	94.8	85	93.4
			No	1	1.0	0	0.0
Bladder Stones	11	7.2	Yes	8	72.7	7	87.5
			No	3	27.3	1	33.3
Kidney Disease	22	14.5	Yes	17	77.3	2	11.8
			No	1	4.5	1	100.0
Kidney Failure	23	15.1	Yes	15	65.2	0	0.0
			No	7	30.4	0	0.0

Table 22. Prevalence and Outcome of Confirmed Health Related Disorders Reported by Organ System and Type

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Health Disorder	Confirmed Reports			Treated		Cured	
	#	% ^a		#	% ^b	#	% ^c
Urinary Tract continued							
Other	0	0.0	Yes	0	0.0	0	0.0
			No	0	0.0	0	0.0
Total	152	100.0	Yes	131	86.2	94	71.8
			No	12	7.9	2	16.7
Neurological							
Seizures (Unknown origin)	73	57.5	Yes	34	44.6	9	26.5
			No	26	33.8	3	11.5
Seizures (Known origin)	23	18.1	Yes	15	65.2	5	33.3
			No	3	13.0	0	0.0
Nerve Degeneration	14	11.0	Yes	10	71.4	1	10.0
			No	3	21.4	0	0.0
Wobbler Syndrome	2	1.6	Yes	2	100.0	0	0.0
			No	0	0.0	0	0.0
Dementia (Senility)	7	5.5	Yes	3	42.9	0	0.0
			No	4	57.1	0	0.0
Tremors (Generalized)	8	6.3	Yes	2	25.0	0	0.0
			No	4	50.0	0	0.0
Other	0	0.0	Yes	0	0.0	0	0.0
			No	0	0.0	0	0.0
Total	127	100.0	Yes	66	52.0	15	22.7
			No	40	31.5	3	7.5
Musculoskeletal							
Spondylosis	43	6.7	Yes	17	39.5	3	17.7
			No	20	46.5	0	0.0
Hip Dysplasia	253	39.5	Yes	70	27.7	12	17.1
			No	134	53.0	1	0.7
Elbow Dysplasia	10	1.6	Yes	5	50.0	2	40.0
			No	3	30.0	0	0.0
Arthritis (Autoimmune)	24	3.7	Yes	16	66.7	1	6.3
			No	3	12.5	0	0.0
Arthritis (not Autoimmune)	151	23.6	Yes	111	73.5	8	7.2
			No	18	11.9	0	0.0
Eosinophilic Panosteitis	32	5.0	Yes	18	56.3	18	100.0
			No	11	34.4	9	81.8
Degenerative Disk Disease	24	3.7	Yes	14	58.3	5	35.7
			No	7	29.2	0	0.0

Table 22. Prevalence and Outcome of Confirmed Health Related Disorders Reported by Organ System and Type

Page 6

Health Disorder	Confirmed Reports			Treated		Cured	
	#	% ^a		#	% ^b	#	% ^c
Musculoskeletal (con't)							
Osteochondritis Dissecans	33	5.1	Yes	27	81.8	22	81.5
			No	4	12.1	1	25.0
Anterior Cruciate Ligament Tear	30	4.7	Yes	25	83.3	23	92.0
			No	0	3.3	0	0.0
Patella Luxation	7	1.1	Yes	5	71.4	4	80.0
			No	1	14.3	0	0.0
Other	34	5.3	Yes	21	79.4	15	71.4
			No	4	14.7	1	25.0
Total	641	100.0	Yes	329	51.3	113	34.3
			No	205	32.0	12	5.9
Eyes							
Cataracts	162	42.6	Yes	9	5.6	2	22.2
			No	113	69.8	0	0.0
Entropion	16	4.2	Yes	13	81.3	9	69.2
			No	3	18.8	0	0.0
Ectropion	5	1.3	Yes	3	60.0	2	66.7
			No	1	20.0	0	0.0
Distichiasis	66	17.4	Yes	15	22.7	10	66.7
			No	39	59.1	4	10.3
Injury	21	5.5	Yes	17	81.0	17	100.0
			No	2	9.5	1	50.0
Progressive Retinal Atrophy	6	1.6	Yes	1	16.7	0	0.0
			No	2	33.3	0	0.0
Glaucoma	11	2.9	Yes	8	72.7	1	12.5
			No	2	18.2	0	0.0
Prolapsed Third Eyelid	3	0.8	Yes	1	33.3	0	0.0
			No	2	66.7	0	0.0
Iris Cyst	13	3.4	Yes	1	15.4	1	100.0
			No	8	69.2	1	12.5
Uvitis	16	4.2	Yes	12	75.0	2	16.7
			No	1	6.3	0	0.0
Other	61	16.1	Yes	31	50.8	20	64.5
			No	20	32.8	3	15.0
Total	380	100.0	Yes	111	29.2	64	57.7
			No	193	50.8	9	4.7

Table 22. Prevalence and Outcome of Confirmed Health Related Disorders Reported by Organ System and Type

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Health Disorder	Confirmed Reports			Treated		Cured	
	#	% ^a		#	% ^b	#	% ^c
Ears							
Chronic/Repeated Infection	276	78.6	Yes	236	85.5	168	71.2
			No	3	1.1	1	33.3
Hematoma	24	6.8	Yes	22	91.7	20	90.9
			No	1	4.2	1	100.0
Hearing Problem	38	10.8	Yes	5	13.2	2	40.0
			No	29	76.3	0	0.0
Other	13	3.7	Yes	8	61.5	5	62.5
			No	2	15.4	0	0.0
Total	351	100.0	Yes	271	77.2	195	72.0
			No	35	10.0	2	5.7
Reproductive System							
Bitches							
Chronic False Pregnancy	14	7.5	Yes	2	14.3	0	0.0
			No	8	57.1	1	12.5
Irregular Heat Cycles	8	4.3	Yes	3	37.5	1	33.3
			No	5	62.5	1	20.0
Infertility	9	4.8	Yes	4	44.4	1	25.0
			No	1	11.1	0	0.0
Difficult Whelping	37	19.8	Yes	19	51.4	11	57.9
			No	4	10.8	0	0.0
Pyometra	61	32.6	Yes	54	88.5	51	94.4
			No	2	3.3	1	50.0
Failure to Carry To Term	6	3.2	Yes	4	66.7	3	75.0
			No	0	0.0	0	0.0
Poor Mothering Instinct	4	2.1	Yes	1	25.0	1	100.0
			No	1	25.0	0	0.0
Insufficient Milk	1	0.5	Yes	0	0.0	0	0.0
			No	0	0.0	0	0.0
Other	4	2.1	Yes	3	75.0	2	66.7
			No	0	0.0	0	0.0
Total	187	100.0	Yes	122	65.2	100	82.0
			No	29	15.5	3	10.3

Table 22. Prevalence and Outcome of Confirmed Health Related Disorders Reported by Organ System and Type

Page 8

Health Disorder	Confirmed Reports			Treated		Cured	
	#	% ^a		#	% ^b	#	% ^c
Reproductive System (cont)							
Dogs							
Testicular Atrophy	6	8.3	Yes	4	66.7	3	75.0
			No	1	16.7	0	0.0
Infertility	12	16.7	Yes	5	41.7	0	40.0
			No	6	50.0	0	0.0
Enlarged Prostate	23	31.9	Yes	17	73.9	13	76.5
			No	4	17.4	0	0.0
Abnormal Semen	9	12.5	Yes	4	44.4	1	25.0
			No	3	33.3	1	33.3
Lack of Libido	2	2.8	Yes	1	50.0	1	100.0
			No	1	50.0	0	0.0
Unilateral Cryptorchidism	11	15.3	Yes	2	18.2	2	100.0
			No	2	18.2	0	0.0
Bilateral Cryptorchidism	3	4.2	Yes	1	33.3	1	100.0
			No	1	33.3	0	0.0
Other	6	8.3	Yes	4	66.7	3	75.0
			No	2	33.3	0	0.0
Total	72	100.0	Yes	38	52.8	26	68.4
			No	20	27.8	1	5.0
Skin/Coat							
Dull and Dry	70	8.8	Yes	52	74.3	32	61.5
			No	7	10.0	1	14.3
Coat Color Change	8	1.0	Yes	3	37.5	3	100.0
			No	4	50.3	1	25.0
Sebaceous Cysts	197	24.8	Yes	99	50.3	81	81.8
			No	65	33.0	3	4.6
Sebaceous Adenitis	4	0.5	Yes	3	75.0	2	66.7
			No	1	25.0	0	0.0
Hot Spots	425	53.6	Yes	381	89.6	321	84.3
			No	3	0.7	1	33.3
Seborrhea	38	4.8	Yes	33	86.8	18	54.6
			No	2	5.3	0	0.0
Lick Granuloma	12	1.5	Yes	11	91.7	4	36.4
			No	2	16.7	1	50.0
Pigment Abnormalities	8	1.0	Yes	4	50.0	1	25.0
			No	3	37.5	0	0.0

Table 22. Prevalence and Outcome of Confirmed Health Related Disorders Reported by Organ System and Type

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Health Disorder	Confirmed Reports			Treated		Cured	
	#	% ^a		#	% ^b	#	% ^c
Skin/Coat continued							
Other	31	3.9	Yes	26	83.9	15	57.7
			No	2	6.5	0	0.0
Total	793	100.0	Yes	612	77.2	477	77.9
			No	89	11.2	7	7.9
Trauma/Accidents							
Lameness Requiring Treatment	77	30.4	Yes	61	79.2	46	75.4
			No	4	5.2	2	50.0
Laceration Requiring Stitches	90	35.6	Yes	85	94.4	85	100.0
			No	0	0.0	0	0.0
Fracture/Broken Bone	48	19.0	Yes	46	95.8	0	0.0
			No	1	2.1	0	0.0
Other	38	15.0	Yes	33	86.8	30	90.9
			No	2	5.6	1	50.0
Total	253	100.0	Yes	225	88.9	161	71.6
			No	7	2.8	2	28.6
Infections/Infestations							
Bacterial							
External Ear Otitis	138	36.0	Yes	127	92.0	105	82.7
			No	0	0.0	0	0.0
Anal Sacculitis	46	12.0	Yes	42	91.3	35	83.3
			No	0	0.0	0	0.0
Interdigital Infection	19	5.0	Yes	18	94.7	14	77.8
			No	0	0.0	0	0.0
Lyme Disease	44	11.5	Yes	39	88.6	37	94.9
			No	0	0.0	0	0.0
Pneumonia	20	5.2	Yes	19	95.0	18	94.7
			No	1	5.0	0	0.0
Cystitis	56	14.6	Yes	51	91.1	49	96.1
			No	1	1.8	0	0.0
Tonsillitis	16	4.2	Yes	13	81.3	13	100.0
			No	0	0.0	0	0.0

Table 22. Prevalence and Outcome of Confirmed Health Related Disorders Reported by Organ System and Type

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Health Disorder	Confirmed Reports			Treated		Cured	
	#	% ^a		#	% ^b	#	% ^c
Bacterial (con't)							
Septicemia	3	0.8	Yes	3	100.0	1	33.3
			No	0	0.0	0	0.0
Prostatitis	9	2.3	Yes	9	100.0	9	100.0
			No	0	0.0	0	0.0
Other	32	8.4	Yes	31	96.9	27	87.1
			No	0	0.0	0	0.0
Total	383	100.0	Yes	352	91.9	308	87.5
			No	2	0.5	0	0.0
Viral							
Tracheobronchitis	118	82.0	Yes	113	97.5	111	98.2
			No	2	1.7	2	100.0
Parvovirus	8	5.5	Yes	8	100.0	7	87.5
			No	0	0.0	0	0.0
Coronavirus	12	8.3	Yes	12	100.0	12	100.0
			No	0	0.0	0	0.0
Distemper	2	1.4	Yes	1	50.0	0	0.0
			No	0	0.0	0	0.0
Other	4	2.8	Yes	3	75.0	2	66.7
			No	0	0.0	0	0.0
Total	144	100.0	Yes	137	95.1	132	96.4
			No	2	1.4	2	100.0
Fungal							
Yeast	2	7.7	Yes	1	50.0	1	100.0
			No	0	0.0	0	0.0
Ringworm	14	53.8	Yes	14	100.0	14	100.0
			No	0	0.0	0	0.0
Other	10	38.5	Yes	9	90.0	9	100.0
			No	0	0.0	0	0.0
Total	26	100.0	Yes	24	92.3	24	100.0
			No	0	0.0	0	0.0
Parasitic							
Roundworms	139	22.1	Yes	132	95.0	131	99.2
			No	0	0.0	0	0.0
Whipworms	116	18.4	Yes	111	95.7	104	93.7
			No	0	0.0	0	0.0
Hookworms	72	11.4	Yes	67	93.1	66	98.5
			No	0	0.0	0	0.0

Table 22. Prevalence and Outcome of Confirmed Health Related Disorders Reported by Organ System and Type

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Health Disorder	Confirmed Reports			Treated		Cured	
	#	% ^a		#	% ^b	#	% ^c
Parasitic continued							
Sarcoptic Mange	9	1.4	Yes	9	100.0	9	100.0
			No	0	0.0	0	0.0
Demodectic Mange	49	7.8	Yes	48	98.0	46	95.8
			No	1	2.0	1	100.0
Tapeworms	47	7.5	Yes	45	95.7	42	93.3
			No	0	0.0	0	0.0
Giardia	98	15.6	Yes	95	96.9	92	96.8
			No	0	0.0	0	0.0
Coccidia	93	14.8	Yes	92	98.9	91	98.9
			No	0	0.0	0	0.0
Other	7	1.1	Yes	7	100.0	7	100.0
			No	0	0.0	0	0.0
Total	630	100.0	Yes	606	96.2	588	97.0
			No	1	0.2	1	100.0
Unknown Type Infections	4	100.0	Yes	4	100.0	4	100.0
			No	0	0.0	0	0.0
Oral							
Abnormal Dentition	12	20.0	Yes	6	50.0	0	0.0
			No	4	33.3	0	0.0
Missing Teeth	33	55.0	Yes	9	27.3	0	0.0
			No	26	78.8	0	0.0
Malocclusion	12	20.0	Yes	1	8.3	0	0.0
			No	12	100.0	0	0.0
Other	3	5.0	Yes	3	100.0	0	0.0
			No	0	0.0	0	0.0
Total	60	100.0	Yes	19	31.7	0	0.0
			No	42	70.0	0	0.0
Behavior Problems							
Fear Aggression	5	25.0	Yes	2	40.0	1	50.0
			No	3	60.0	0	0.0
Dominance Aggression	6	30.0	Yes	4	66.7	1	25.0
			No	1	16.7	0	0.0
Inappropriate Urination	6	30.0	Yes	2	33.3	0	0.0
			No	6	100.0	2	33.3

Table 22. Prevalence and Outcome of Confirmed Health Related Disorders Reported by Organ System and Type

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Health Disorder	Confirmed Reports			Treated		Cured	
	#	% ^a		#	% ^b	#	% ^c
Behavior Problems continued							
Other	3	15.0	Yes	2	66.7	0	0.0
			No	1	33.3	0	0.0
Total	20	100.0	Yes	10	50.0	2	20.0
			No	11	50.0	2	18.2
Congenital Defects							
Umbilical Hernia	6	42.9	Yes	2	33.3	2	100.0
			No	2	33.3	1	50.0
Cleft lip or palate	0	0.0	Yes	0	0.0	0	0.0
			No	0	0.0	0	0.0
Other	8	57.0	Yes	5	62.5	4	80.0
			No	3	37.5	0	0.0
Total	14	100.0	Yes	7	35.7	6	85.7
			No	5	42.9	1	20.0

^a Percent confirmed = (number of confirmed disorders) / (total number of disorders)^b Percent of confirmed disorders^c Percent of treated and untreated disorders that were cured

Table 23. Age at Occurrence of Veterinary Confirmed Health Disorders

Health Disorder	Affected		Age at Occurrence		
	Number	Percent	Mean±SD	Minimum	Maximum
Neoplasia					
Breast	44	7.0	8.7±2.9	3.0	15.0
Lipoma	110	17.5	7.7±2.5	2.0	15.0
Osteosarcoma	32	5.1	8.6±2.9	3.0	14.0
Lymphosarcoma	71	11.3	8.1±3.2	2.5	14.5
Melanoma	24	3.8	9.6±2.5	5.0	14.0
Hemangiosarcoma	102	16.2	9.9±2.3	4.0	16.0
Testicular	14	2.2	9.5±3.0	1.0	12.0
Liver	9	1.4	10.8±2.3	7.0	13.0
Mast Cell	65	10.3	7.8±2.7	2.0	15.0
Squamous Cell	11	1.7	8.3±2.5	4.0	13.0
Other	148	23.5	9.3±3.0	1.0	16.0
Total Incidents	630	100.0			
Total Individuals	518				
Cardiovascular					
Heart Arrhythmia	21	12.8	9.0±0.0	0.0	14.0
Heart Murmur	64	39.0	2.7±2.6	0.1	12.0
Cardiomyopathy	10	6.1	9.3±3.4	2.5	14.0
Heart Failure	20	12.2	10.6±3.0	4.6	16.0
Pulmonic Stenosis	1	0.6	2.0±0.0	2.0	2.0
Subaortic Stenosis	16	9.8	3.3±2.9	0.0	10.2
Valve Dysfunction	8	4.9	5.8±4.2	1.0	10.2
Heartworm Infection	7	4.3	6.4±2.6	3.0	10.0
Other	17	10.4	8.2±4.7	0.5	14.0
Total Incidents	164	100.0			
Total Individuals	153				
Allergies					
Allergic Dermatitis Due To:					
Fleas	175	38.8	2.1±1.8	0.0	12.0
Inhaled Allergens	126	27.9	2.7±2.0	0.2	10.0
Food	65	14.4	2.4±2.2	0.0	10.0
Contact	23	5.1	3.5±2.8	0.5	10.0
Flea Dip	3	0.7	2.7±2.9	1.0	6.0
Pond / Lake Water	2	0.4	7.4±0.5	7.0	7.7
Other	29	6.4	3.2±2.4	0.1	8.0
Drug Allergy	0	0.0	0.0±0.0	0.0	0.0
Antibiotic	0	0.0	0.0±0.0	0.0	0.0
Sulfa Drug	0	0.0	0.0±0.0	0.0	0.0

Table 23. Age at Occurrence of Veterinary Confirmed Health Disorders

Page 2

Health Disorder	Affected		Age at Occurrence		
	Number	Percent	Mean±SD	Minimum	Maximum
Allergies (cont)					
Atopic Rhinitis	4	0.9	2.5±2.4	1.0	6.0
Vaccine	5	1.1	5.4±4.9	1.0	13.0
Anesthetic	8	1.8	4.2±3.1	0.7	8.0
Other	11	2.4	4.2±2.7	1.0	8.0
Total Incidents	451	100.0			
Total Individuals	343				
Endocrine					
Hypothyroidism	325	86.4	5.2±3.0	0.5	14.0
Hyperthyroidism	13	3.5	6.0±3.8	2.0	13.0
Cushing's Syndrome	14	3.7	8.2±3.9	1.6	14.5
Diabetes Mellitus	1	0.3	13.0±0.0	13.0	13.0
Pancreatic Insufficiency	7	1.9	7.2±4.6	1.5	13.0
Addison's Disease	4	1.1	9.1±5.5	3.0	14.5
Other	12	3.2	5.7±2.5	1.6	9.0
Total Incidents	381	100.0			
Total Individuals	364				
Gastrointestinal					
Bloat With Torsion	24	13.8	8.8±3.2	2.0	17.5
Bloat Without Torsion	17	9.8	6.1±3.1	1.5	11.0
Colitis (Chronic)	3	1.7	6.7±6.4	2.0	14.0
Esophageal Disorder	14	8.0	8.0±4.2	1.0	14.5
Excessive Vomiting	25	14.4	6.3±4.5	0.5	16.8
Excessive Flatulence	12	6.9	5.3±3.7	0.2	12.5
Excessive Diarrhea	38	21.8	5.3±5.0	0.1	16.8
Gastritis	36	20.7	4.6±3.4	0.2	12.5
Malabsorption	3	1.7	5.3±5.8	2.0	12.0
Foreign Body	--				
Other	2	1.1	4.0±2.8	2.0	6.0
Total Incidents	174	100.0			
Total Individuals	136				
Hematologic					
Hemophilia	--				
Autoimmune Hemolytic Anemia	2	7.1	2.8±1.8	1.5	4.0
Chronic Anemia	6	21.4	9.1±5.1	0.7	13.0
Thrombocytopenia	6	21.4	6.5±4.1	1.5	11.5
von Willebrand's Disease	11	39.3	1.7±2.2	0.0	8.0
Bone Marrow Failure	2	7.1	9.5±2.1	8.0	11.0
Other	1	3.6	6.0±0.0	6.0	6.0

Table 23. Age at Occurrence of Veterinary Confirmed Health Disorders

Page 3

Health Disorder	Affected		Age at Occurrence		
	Number	Percent	Mean±SD	Minimum	Maximum
Hematologic (cont)					
Total Incidents	28	100.0			
Total Individuals	28				
Urinary Tract					
Bladder Infection	93	62.4	5.1±4.1	0.0	14.0
Bladder Stones	11	7.4	7.7±4.0	0.0	13.0
Kidney Disease	22	14.8	10.3±2.8	41.0	13.9
Kidney Failure	23	15.4	12.1±2.9	5.0	15.5
Other	--				
Total Incidents	149	100.0			
Total Individuals	134				
Neurological					
Seizures (Unknown origin)	73	58.4	5.4±3.6	0.5	16.0
Seizures (Known origin)	20	16.0	8.3±4.8	1.0	15.0
Nerve Degeneration	14	11.2	11.2±2.8	6.5	15.0
Wobbler Syndrome	2	1.6	13.0±1.4	12.0	14.0
Dementia (Senility)	7	5.6	13.2±1.5	11.0	15.0
Tremors (Generalized)	8	6.4	10.3±3.0	6.0	14.0
Other	1	0.8	7.0±0.0	7.0	7.0
Total Incidents	125	100.0			
Total Individuals	122				
Musculoskeletal					
Spondylosis	45	7.2	9.2±2.5	4.0	13.0
Hip Dysplasia	244	38.9	2.6±2.3	0.0	13.0
Elbow Dysplasia	11	1.8	4.6±2.7	0.5	9.0
Arthritis (Autoimmune)	24	3.8	8.5±3.0	4.0	14.0
Arthritis (not Autoimmune)	152	24.2	8.6±3.0	0.5	14.0
Eosinophilic Panosteitis	32	5.1	1.2±2.0	0.1	10.0
Degenerative Disk Disease	23	3.7	10.7±2.9	5.0	16.5
Osteochondritis Dissecans	32	5.1	1.3±1.9	0.1	8.0
Anterior Cruciate Ligament Tear	29	4.6	6.6±2.4	1.0	11.0
Patella Luxation	7	1.1	3.3±2.3	0.8	6.0
Other	29	4.6	5.6±4.1	0.2	13.0
Total Incidents	628	100.0			
Total Individuals	488				

Table 23. Age at Occurrence of Veterinary Confirmed Health Disorders

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Health Disorder	Affected		Age at Occurrence		
	Number	Percent	Mean \pm SD	Minimum	Maximum
Eyes					
Cataracts	158	46.6	7.2 \pm 4.0	0.0	14.0
Entropion	16	4.7	1.4 \pm 1.9	0.0	8.0
Ectropion	5	1.5	1.4 \pm 2.0	0.2	5.0
Distichiasis	63	18.6	2.0 \pm 1.6	0.0	7.0
Injury	19	5.6	5.8 \pm 4.1	0.1	14.0
Progressive Retinal Atrophy	6	1.8	1.0 \pm 0.0	1.0	1.0
Glaucoma	11	3.2	9.9 \pm 1.3	7.0	11.0
Prolapsed Third Eyelid	3	0.9	9.3 \pm 2.9	6.0	11.0
Other	58	17.1	5.9 \pm 3.7	0.0	14.0
Total Incidents	339	100.0			
Total Individuals	316				
Ears					
Chronic/Repeated Infection	260	76.7	2.9 \pm 2.3	0.0	14.0
Hearing Problem	41	12.1	11.9 \pm 2.1	1.0	15.0
Hematoma	24	7.1	7.8 \pm 2.7	4.0	14.0
Other	14	4.1	5.3 \pm 5.0	0.2	13.0
Total Incidents	339	100.0			
Total Individuals	330				
Reproductive System					
Bitches					
Chronic False Pregnancy	14	5.6	1.8 \pm 0.8	0.5	4.0
Irregular Heat Cycles	7	2.8	2.2 \pm 1.7	1.0	6.0
Infertility	9	3.6	4.0 \pm 1.5	2.0	7.0
Difficult Whelping	35	13.9	4.4 \pm 2.0	2.0	8.0
Pyometra	60	23.9	5.4 \pm 2.3	0.5	12.0
Mastitis	31	12.4	4.0 \pm 2.0	0.5	9.5
Malformed Puppies	11	4.4	4.4 \pm 1.4	2.5	6.0
Failure to Carry To Term	6	2.4	4.8 \pm 1.0	3.0	6.0
Poor Mothering Instinct	4	1.6	3.5 \pm 1.3	2.0	5.0
Insufficient Milk	1	0.4	4.0 \pm 0.0	4.0	4.0
Other	4	1.6	4.6 \pm 3.0	2.5	9.0
Dogs					
Testicular Atrophy	6	2.4	10.8 \pm 1.9	9.0	14.0
Infertility	12	4.8	6.3 \pm 3.3	2.0	12.0
Enlarged Prostate	21	8.4	9.0 \pm 2.6	4.0	14.0
Abnormal Semen	9	3.6	7.5 \pm 3.3	2.0	12.0
Lack of Libido	2	0.8	7.8 \pm 2.5	6.0	9.5
Unilateral Cryptorchidism	10	4.0	0.1 \pm 0.2	0.0	0.5

Table 23. Age at Occurrence of Veterinary Confirmed Health Disorders

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Health Disorder	Affected		Age at Occurrence		
	Number	Percent	Mean±SD	Minimum	Maximum
Reproductive System (cont)					
Bilateral Cryptorchidism	3	1.2	5.6±5.1	0.4	10.5
Other	6	2.4	6.8±3.8	1.0	10.0
Total Incidents	251	100.0			
Total Individuals	216				
Skin/Coat					
Dull and Dry	67	8.8	4.2±3.2	0.0	13.0
Coat Color Change	9	1.2	6.0±3.0	2.0	10.0
Sebaceous Cysts	194	25.6	6.8±2.7	1.0	15.0
Sebaceous Adenitis	4	0.5	7.6±4.6	2.5	12.0
Hot Spots	396	52.2	2.8±2.2	0.2	12.0
Seborrhea	36	4.7	3.7±3.2	0.0	11.0
Pigment Abnormalities	8	1.1	5.3±2.4	3.0	10.0
Lick Granuloma	13	1.7	7.0±3.7	1.8	14.0
Other	31	4.1	4.8±3.8	0.5	14.0
Total Incidents	758	100.0			
Total Individuals	599				
Trauma/Accidents					
Lameness Requiring Treatment	74	30.3	5.8±3.0	0.2	14.0
Laceration Requiring Stitches	87	35.7	4.3±2.9	0.2	13.4
Fracture/Broken Bone	46	18.9	4.6±4.4	0.1	16.0
Other	37	15.2	4.0±3.4	0.1	13.0
Total Incidents	244	100.0			
Total Individuals	239				
Infections/Infestations					
Bacterial					
External Ear Otitis	133	11.8	2.8±2.2	0.1	11.0
Anal Sacculitis	45	4.0	4.0±2.5	0.5	9.0
Interdigital Infection	18	1.6	4.6±2.4	0.5	9.0
Lyme Disease	43	3.8	5.4±2.7	0.5	14.0
Pneumonia	20	1.8	7.5±4.0	0.1	14.5
Cystitis	49	4.4	4.5±3.6	0.2	12.0
Tonsillitis	16	1.4	2.7±1.8	1.0	8.0
Septicemia	3	0.3	8.5±3.0	5.0	10.5
Prostatitis	9	0.8	7.4±2.7	2.0	11.0
Other	32	2.8	5.0±4.0	0.1	12.0
Viral					
Tracheobronchitis	117	10.4	3.9±2.5	0.1	14.0
Parvovirus	8	0.7	1.8±4.5	0.0	13.0

Table 23. Age at Occurrence of Veterinary Confirmed Health Disorders

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Health Disorder	Affected		Age at Occurrence		
	Number	Percent	Mean±SD	Minimum	Maximum
Infections/Infestations (cont)					
Coronavirus	12	1.1	1.4±2.0	0.1	7.0
Distemper	2	0.2	11.0±5.7	7.0	15.0
Other	4	0.4	9.0±5.2	3.0	15.0
Fungal					
Ringworm	14	1.2	2.5±1.8	0.1	5.5
Yeast	1	0.1	1.5±0.0	1.5	1.5
Other	10	0.9	4.4±3.2	1.0	9.0
Parasitic					
Roundworms	125	11.1	1.0±1.4	0.0	6.0
Whipworms	109	9.7	3.4±2.8	0.1	13.0
Hookworms	63	5.6	2.3±2.5	0.0	9.0
Sarcoptic Mange	9	0.8	3.5±2.9	0.4	8.0
Demodectic Mange	48	4.3	3.8±3.4	0.2	11.6
Giardia	93	8.3	3.7±3.3	0.1	13.0
Tapeworms	42	3.7	3.4±1.9	0.5	8.0
Coccidia	90	8.0	1.1±1.8	0.1	9.0
Other	7	0.6	8.9±3.7	2.0	12.5
Other Infections	4	0.4	6.3±4.3	2.0	12.0
Total Incidents	1126	100.0			
Total Individuals	712				
Oral					
Abnormal Dentition	12	17.9	2.5±3.5	0.0	10.0
Missing Teeth	37	55.2	2.3±3.3	0.0	11.5
Malocclusion	13	19.4	1.9±2.9	0.0	10.0
Other	5	7.5	5.2±2.8	2.0	9.0
Total Incidents	67	100.0			
Total Individuals	58				
Behavior Problems					
Fear Aggression	5	13.5	1.8±1.5	0.3	4.0
Dominance Aggression	20	54.1	3.7±2.3	0.1	9.0
Inappropriate Urination	8	21.6	4.5±4.8	0.5	12.0
Other	4	10.8	1.9±1.5	0.5	4.0
Total Incidents	37	100.0			
Total Individuals	19				

Table 23. Age at Occurrence of Veterinary Confirmed Health Disorders

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Health Disorder	Affected		Age at Occurrence		
	Number	Percent	Mean±SD	Minimum	Maximum
Congenital Defects					
Umbilical Hernia	6	42.9	0.3±0.8	0.0	2.0
Cleft lip or palate	0	0.0	0	0.0	0.0
Other	8	57.1	0.6±1.4	0.0	4.0
Total Incidents	14	100.0			
Total Individuals	14				

Table 24. Prevalence of Veterinary Confirmed Health Related Disorders Reported by Age

Health Disorder	Age in Years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All Ages	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Neoplasia										
Osteosarcoma	0	0.0	6	18.8	21	65.6	5	15.6	32	100.0
Lymphosarcoma	1	1.4	27	38.0	34	47.9	9	12.7	71	100.0
Testicular	0	0.0	0	0.0	12	80.0	3	20.0	15	100.0
Breast	0	0.0	5	11.4	22	50.0	17	38.6	44	100.0
Hemangiosarcoma	0	0.0	13	12.7	70	68.6	19	18.6	102	100.0
Mast Cell	0	0.0	10	15.4	38	58.5	17	26.2	65	100.0
Squamous Cell	0	0.0	0	0.0	8	72.7	3	27.3	11	100.0
Melanoma	0	0.0	3	12.0	11	44.0	11	44.0	25	100.0
Lipoma	0	0.0	9	8.2	66	60.0	35	31.8	110	100.0
Liver	0	0.0	1	10.0	6	60.0	3	30.0	10	100.0
Other Neoplasm	0	0.0	20	13.7	92	63.0	34	23.3	146	100.0
Total Incidents	1		94		380		156		631	
Cardiovascular										
Heart Failure	0	0.0	2	10.0	12	60.0	6	30.0	20	100.0
Cardiomyopathy	1	10.0	0	0.0	8	80.0	1	10.0	10	100.0
Heartworm Infection	0	0.0	1	12.5	2	25.0	5	62.5	8	100.0
Heart Arrhythmia	0	0.0	3	14.3	14	66.7	4	19.0	21	100.0
Heart Murmur	0	0.0	14	20.9	44	65.7	9	13.4	67	100.0
Pulmonic Stenosis	0	0.0	1	100.0	0	0.0	0	0.0	1	100.0
Subaortic Stenosis	0	0.0	7	35.0	12	60.0	1	5.0	20	100.0

Table 24. Prevalence of Veterinary Confirmed Health Related Disorders Reported by Age
Page 2

Health Disorder	Age in Years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All Ages	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Cardiovascular (cont)										
Valve Dysfunction	0	0.0	1	12.5	5	62.5	2	25.0	8	100.0
Other Cardiovascular	0	0.0	7	41.2	5	29.4	5	29.4	17	100.0
Total Incidents	1		36		102		33		172	
Allergies										
Fleas	0	0.0	42	23.2	89	49.2	50	27.6	181	100.0
Food	0	0.0	20	30.8	35	53.8	10	15.4	65	100.0
Flea Dip / Insecticide	0	0.0	1	33.3	2	66.7	0	0.0	3	100.0
Pond / Lake Water	0	0.0	0	0.0	1	50.0	1	50.0	2	100.0
Inhaled	0	0.0	39	29.8	74	56.5	18	13.7	131	100.0
Contact	0	0.0	2	15.4	9	69.2	2	15.4	13	100.0
Other Contact Allergies	0	0.0	7	23.3	23	76.7	0	0.0	30	100.0
Atopic Rhinitis	0	0.0	1	25.0	3	75.0	0	0.0	4	100.0
Anesthesia Allergy	0	0.0	0	0.0	4	100.0	0	0.0	4	100.0
Drug Allergy	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Vaccine Allergy	0	0.0	3	60.0	1	20.0	1	20.0	5	100.0
Other Allergy	0	0.0	2	20.0	6	60.0	2	20.0	10	100.0
Total Incidents	0		117		247		84		448	

Table 24. Prevalence of Veterinary Confirmed Health Related Disorders Reported by Age
Page 3

Health Disorder	Age in Years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All Ages	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Endocrine										
Hypothyroid	1	0.3	73	22.1	185	56.1	71	21.5	330	100.0
Hyperthyroid	0	0.0	1	7.7	10	76.9	2	15.4	13	100.0
Cushings	0	0.0	2	14.3	10	71.4	2	14.3	14	100.0
Addisons	0	0.0	0	0.0	2	50.0	2	50.0	4	100.0
Diabetes	0	0.0	0	0.0	1	100.0	0	0.0	1	100.0
Pancreatic Insufficiency	0	0.0	0	0.0	5	71.4	2	28.6	7	100.0
Other Endocrine	0	0.0	3	25.0	9	75.0	0	0.0	12	100.0
Total Incidents	1		79		222		79		380	
Gastrointestinal										
Bloat No Torsion	0	0.0	2	11.8	10	58.8	5	29.4	17	100.0
Bloat With Torsion	0	0.0	5	20.8	14	58.3	5	20.8	24	100.0
Esophageal Disorder	0	0.0	3	21.4	7	50.0	4	28.6	14	100.0
Gastritis	0	0.0	14	35.9	17	43.6	8	20.5	39	100.0
Excessive Vomiting	0	0.0	10	38.5	9	34.6	7	26.9	26	100.0
Excessive Diarrhea	1	2.6	14	36.8	13	34.2	10	26.3	38	100.0
Excessive Flatulence	0	0.0	2	16.7	8	66.7	2	16.7	12	100.0
Malabsorbtion	0	0.0	2	50.0	1	25.0	1	25.0	4	100.0
Colitis	0	0.0	0	0.0	1	33.3	2	66.7	3	100.0
Other Gastrointestinal	0	0.0	0	0.0	2	100.0	0	0.0	2	100.0
Total Incidents	1		52		82		44		179	

Table 24. Prevalence of Veterinary Confirmed Health Related Disorders Reported by Age
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Health Disorder	Age in Years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All Ages	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Hematologic										
Hemophilia	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Autoimmune Hemolytic Anemia	0	0.0	1	50.0	1	50.0	0	0.0	2	100.0
Chronic Anemia	0	0.0	1	16.7	3	50.0	2	33.3	6	100.0
Thrombocytopenia	0	0.0	2	33.3	4	66.7	0	0.0	6	100.0
Von Willebrand’s Disease	0	0.0	2	14.3	6	42.9	6	42.9	14	100.0
Bone Marrow Failure	0	0.0	0	0.0	2	100.0	0	0.0	2	100.0
Other Hematologic	0	0.0	0	0.0	1	100.0	0	0.0	1	100.0
Total Incidents	0		6		17		8		31	
Urinary Tract / Renal										
Kidney Disease	0	0.0	1	4.5	11	50.0	10	45.5	22	100.0
Kidney Failure	0	0.0	2	9.0	7	31.8	13	59.1	22	100.0
Bladder Stones	0	0.0	0	0.0	8	72.7	3	27.3	11	100.0
Bladder Infection(s)	0	0.0	19	19.8	54	56.3	23	24.0	96	100.0
Other Urinary Tract	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total Incidents	0		22		80		49		151	
Neurological										
Seizures (Unknown origin)	0	0.0	17	22.1	39	50.6	21	27.3	77	100.0
Seizures (Known origin)	1	4.3	1	4.3	14	60.9	7	30.4	23	100.0
Wobbler Syndrome	0	0.0	0	0.0	0	0.0	2	100.0	2	100.0
Dementia (Senility)	0	0.0	0	0.0	1	14.3	6	85.7	7	100.0
Nerve degeneration	0	0.0	0	0.0	6	42.9	8	57.1	14	100.0
Tremors – Generalized	0	0.0	1	12.5	4	50.0	3	37.5	8	100.0

Table 24. Prevalence of Veterinary Confirmed Health Related Disorders Reported by Age
Page 5

Health Disorder	Age in Years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All Ages	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Neurological (cont)										
Other Neurological	0	0.0	0	0.0	1	100.0	0	0.0	1	100.0
Total Incidents	1		19		65		47		132	
Musculoskeletal										
Eosinophilic Panosteitis	0	0.0	8	25.0	19	59.4	5	15.6	32	100.0
Osteochondritis Dessecan	0	0.0	10	31.3	19	59.4	3	9.4	32	100.0
Hip Dysplasia	1	0.4	66	26.1	146	57.7	40	15.8	253	100.0
Elbow Dysplasia	0	0.0	4	33.3	4	33.3	4	33.3	12	100.0
Spondylosis	0	0.0	3	6.7	21	46.7	21	46.7	45	100.0
Degenerative Disk Disease	0	0.0	2	8.3	5	20.8	17	70.8	24	100.0
Anterior Cruciate Ligament	0	0.0	10	33.3	12	40.0	8	26.7	30	100.0
Arthritis (Autoimmune)	0	0.0	4	16.7	16	66.7	4	16.7	24	100.0
Arthritis (not Autoimmune)	0	0.0	9	5.8	78	50.0	69	44.2	156	100.0
Patella Luxation	0	0.0	2	28.6	4	57.1	1	14.3	7	100.0
Other Musculoskeletal	0	0.0	9	26.5	16	47.1	9	26.5	34	100.0
Total Incidents	1		127		340		181		649	
Eyes										
Progressive Retinal Atropy	0	0.0	1	16.7	2	33.3	3	50.0	6	100.0
Cataracts	0	0.0	18	11.0	90	54.9	56	34.1	164	100.0
Glaucoma	0	0.0	0	0.0	10	90.9	1	9.1	11	100.0

Table 24. Prevalence of Veterinary Confirmed Health Related Disorders Reported by Age
Page 6

Health Disorder	Age in Years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All Ages	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Eyes (cont)										
Entropion	0	0.0	2	12.5	12	75.0	2	12.5	16	100.0
Ectropion	0	0.0	4	80.0	1	20.0	0	0.0	5	100.0
Prolapsed 3 rd eyelid	0	0.0	1	33.3	1	33.3	1	33.3	3	100.0
Distichiasis	0	0.0	20	30.3	35	53.0	11	16.7	66	100.0
Uveitis	0	0.0	2	12.5	11	68.8	3	18.8	16	100.0
Iris Cyst	0	0.0	5	41.7	7	58.3	0	0.0	12	100.0
Injury	0	0.0	8	38.1	8	38.1	5	23.8	21	100.0
Other Eye Diseases	0	0.0	18	29.5	31	50.8	12	19.7	61	100.0
Total Incidents	0		79		208		94		381	
Ears										
Hearing Problem	0	0.0	0	0.0	8	19.0	34	81.0	42	100.0
Chronic or Intermittent Infection	1	0.4	72	26.1	152	55.1	51	18.5	276	100.0
Hematoma	0	0.0	3	12.0	13	52.0	9	36.0	25	100.0
Other Ear Diseases	0	0.0	2	14.3	7	50.0	5	35.7	14	100.0
Total Incidents	1		77		180		99	171.2	357	
Reproductive System										
Bitches										
Infertility	0	0.0	3	33.3	6	66.7	0	0.0	9	100.0
Failure to Carry To Term	0	0.0	1	16.7	4	66.7	1	16.7	6	100.0

Table 24. Prevalence of Veterinary Confirmed Health Related Disorders Reported by Age
Page 7

Health Disorder	Age in Years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All Ages	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Bitches (cont)										
Irregular Heat Cycles	0	0.0	2	25.0	5	62.5	1	12.5	8	100.0
Chronic False Pregnancy	0	0.0	3	21.4	10	71.4	1	7.1	14	100.0
Difficult Whelping (dystocia)	0	0.0	11	29.7	19	51.4	7	18.9	37	100.0
Mastitis	0	0.0	9	29.0	13	41.9	9	29.0	31	100.0
Pyometra	0	0.0	16	26.2	33	54.1	12	19.7	61	100.0
Insufficient Milk	0	0.0	0	0.0	1	100.0	0	0.0	1	100.0
Malformed Puppies	0	0.0	4	33.3	7	58.3	1	8.3	12	100.0
Poor Mother Instinct	0	0.0	0	0.0	2	50.0	2	50.0	4	100.0
Total Incidents	0		49		100		34		183	
Dogs										
Chryptorchidism Unilateral	0	0.0	6	54.5	4	36.4	1	9.1	11	100.0
Cryptorchidism Bilateral	1	33.3	0	0.0	2	66.7	0	0.0	3	100.0
Enlarged Prostate	0	0.0	2	8.7	12	52.2	9	39.1	23	100.0
Lack of Libido	0	0.0	0	0.0	2	100.0	0	0.0	2	100.0
Infertility	0	0.0	1	8.3	9	75.0	2	16.7	12	100.0
Abnormal Semen	0	0.0	2	22.2	6	66.7	1	11.1	9	100.0
Testicular Atrophy	0	0.0	0	0.0	5	83.3	1	16.7	6	100.0
Other Reproductive	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total Incidents	1		11		40		14		66	

Table 24. Prevalence of Veterinary Confirmed Health Related Disorders Reported by Age
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Health Disorder	Age in Years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All Ages	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Skin / Coat										
Dull and Dry	0	0.0	21	29.6	38	53.5	12	16.9	71	100.0
Seborrhea	0	0.0	9	23.1	23	59.0	7	17.9	39	100.0
Pigment Abnormalities	0	0.0	2	25.0	5	62.5	1	12.5	8	100.0
Coat Color Change	0	0.0	1	11.1	8	88.9	0	0.0	9	100.0
Sebaceous Cysts	1	0.5	33	16.5	116	58.0	50	25.0	200	100.0
Sebaceous Adenitis	0	0.0	1	25.0	1	25.0	2	50.0	4	100.0
Hot Spots	0	0.0	112	26.2	237	55.4	79	18.5	428	100.0
Lick Granuloma	0	0.0	2	15.4	7	53.8	4	30.8	13	100.0
Other Skin / Coat	0	0.0	4	13.3	20	66.7	6	20.0	30	100.0
Total Incidents	1		185		455		161		802	
Trauma / accidents										
Fracture/Broken Bones	0	0.0	13	26.5	24	49.0	12	24.5	49	100.0
Lameness Requiring Treatment	0	0.0	16	20.3	49	62.0	14	17.7	79	100.0
Laceration Requiring Stitches	0	0.0	17	18.9	45	50.0	28	31.1	90	100.0
Other Trauma/Accidents	0	0.0	13	34.2	12	31.6	13	34.2	38	100.0
Total Incidents	0		59		130		67		256	
Infections / Infestations										
Bacterial										
Anal Sacculitis	0	0.0	12	26.1	25	54.3	9	19.6	46	100.0
Pneumonia	0	0.0	3	15.0	11	55.0	6	30.0	20	100.0

Table 24. Prevalence of Veterinary Confirmed Health Related Disorders Reported by Age
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Health Disorder	Age in Years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All Ages	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Bacterial (cont)										
Prostatitis	0	0.0	0	0.0	7	77.8	2	22.2	9	100.0
Cystitis	0	0.0	8	14.3	36	64.3	12	21.4	56	100.0
External Ear (otitis externa)	0	0.0	37	26.8	74	53.6	27	19.6	138	100.0
Tonsillitis	0	0.0	7	43.8	6	37.5	3	18.8	16	100.0
Septicemia	0	0.0	0	0.0	3	100.0	0	0.0	3	100.0
Lyme Disease	0	0.0	8	18.2	27	61.4	9	20.5	44	100.0
Interdigital Infection	0	0.0	5	26.3	11	57.9	3	15.8	19	100.0
Other Bacterial	0	0.0	8	25.0	16	50.0	8	25.0	32	100.0
Total Incidents	0		88		216		79		383	
Viral										
Parvovirus	0	0.0	1	12.5	1	12.5	6	75.0	8	100.0
Corona Virus	0	0.0	0	0.0	10	83.3	2	16.7	12	100.0
Distemper	0	0.0	0	0.0	1	50.0	1	50.0	2	100.0
Tracheobronchitis (kennel cough)	0	0.0	29	24.6	68	57.6	21	17.8	118	100.0
Other Viral	0	0.0	1	25.0	1	25.0	2	50.0	4	100.0
Total Incidents	0		31		81		32		144	
Fungal										
Ringworm	0	0.0	3	21.4	8	57.1	3	21.4	14	100.0
Yeast	0	0.0	0	0.0	1	100.0	0	0.0	1	100.0
Other Fungal	0	0.0	5	45.5	5	45.5	1	9.1	11	100.0
Total Incidents	0		8		14		4		26	

Table 24. Prevalence of Veterinary Confirmed Health Related Disorders Reported by Age
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Health Disorder	Age in Years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All Ages	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Parasitic										
Giardia	1	1.0	30	30.6	50	51.0	17	17.3	98	100.0
Coccidia	1	1.1	31	33.3	49	52.7	12	12.9	93	100.0
Roundworms	1	0.7	37	26.6	70	50.4	31	22.3	139	100.0
Hookworms	0	0.0	10	13.9	35	48.6	27	37.5	72	100.0
Whipworms	1	0.9	17	14.7	68	58.6	30	25.9	116	100.0
Tapeworms	0	0.0	12	25.5	28	59.6	7	14.9	47	100.0
Demodectic Mange	0	0.0	9	18.4	26	53.1	14	28.6	49	100.0
Sarcoptic Mange	0	0.0	4	44.4	3	33.3	2	22.2	9	100.0
Other Parasitic	0	0.0	1	14.3	4	57.1	2	28.6	7	100.0
Other Infections	0	0.0	1	25.0	1	25.0	2	50.0	4	100.0
Total Incidents	4		152		334		144		633	
Oral										
Abnormal Dentition	0	0.0	0	0.0	8	66.7	4	33.3	12	100.0
Missing Teeth	0	0.0	10	23.3	24	55.8	9	20.9	43	100.0
Malocclusion (bite problem)	0	0.0	4	26.7	7	46.7	4	26.7	15	100.0
Other Oral	0	0.0	1	20.0	2	40.0	2	40.0	5	100.0
Total Incidents	0		15		41		19		75	
Behavior Problems										
Fear Aggression	0	0.0	3	60.0	2	40.0	0	0.0	5	100.0
Dominance Aggression	0	0.0	2	33.3	1	16.7	3	50.0	6	100.0
Inappropriate Urination	0	0.0	2	33.3	3	50.0	1	16.7	6	100.0

Table 24. Prevalence of Veterinary Confirmed Health Related Disorders Reported by Age
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Health Disorder	Age in Years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All Ages	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Behavior (cont)										
Other Behavior	0	0.0	1	33.3	2	66.7	0	0.0	3	100.0
Total Incidents	0		8		8		4		20	
Congenital defects										
Umbilical Hernia	0	0.0	2	33.3	2	33.3	2	33.3	6	100.0
Cleft Lip or Palate	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other Congenital Defects	0	0.0	1	12.5	4	50.0	3	37.5	8	100.0
Total Incidents	0		3		6		5		14	

Table 25a. Prevalence of Veterinary Confirmed Health Related Disorders Reported by Age for Bitches Only

Health Disorder	Age in Years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All Ages	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Neoplasia										
Osteosarcoma	0	0.0	3	16.7	12	66.7	3	16.7	18	100.0
Lymphosarcoma	0	0.0	17	45.9	14	37.8	6	16.2	37	100.0
Breast	0	0.0	5	11.4	22	50.0	17	38.6	44	100.0
Hemangiosarcoma	0	0.0	3	7.1	32	76.2	7	16.7	42	100.0
Mast Cell	0	0.0	7	17.9	23	60.0	9	23.1	39	100.0
Squamous Cell	0	0.0	0	0.0	4	66.7	2	33.3	6	100.0
Melanoma	0	0.0	1	7.1	6	42.9	7	50.0	14	100.0
Lipoma	0	0.0	3	4.7	40	62.5	21	32.8	64	100.0
Liver	0	0.0	0	0.0	2	50.0	2	50.0	4	100.0
Other Neoplasm	0	0.0	11	13.3	50	60.2	22	26.5	83	100.0
Total	0		50		205		96		351	
Cardiovascular										
Heart Failure	0	0.0	2	16.7	7	58.3	3	25.0	12	100.0
Cardiomyopathy	0	0.0	0	0.0	3	100.0	0	0.0	3	100.0
Heartworm Infection	0	0.0	1	25.0	1	25.0	2	50.0	4	100.0
Heart Arrhythmia	0	0.0	2	15.4	10	76.9	1	7.7	13	100.0
Heart Murmur	0	0.0	9	22.0	27	65.9	5	12.2	41	100.0
Pulmonic Stenosis	0	0.0	1	100.0	0	0.0	0	0.0	1	100.0
Subaortic Stenosis	0	0.0	3	27.3	8	72.7	0	0.0	11	100.0
Valve Dysfunction	0	0.0	1	20.0	2	40.0	2	40.0	5	100.0
Other Cardiovascular	0	0.0	4	40.0	4	40.0	2	20.0	10	100.0
Total	0		23		62		15		100	

Table 25a. Prevalence of Veterinary Confirmed Health Related Disorders Reported by Age for Bitches Only

Page 2

Health Disorder	Age in Years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All Ages	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Allergies										
Fleas	0	0.0	22	23.4	47	50.0	25	26.6	94	100.0
Food	0	0.0	5	18.5	19	70.4	3	11.1	27	100.0
Flea Dip / Insecticide	0	0.0	1	100.0	0	0.0	0	0.0	1	100.0
Pond / Lake Water	0	0.0	0	0.0	1	50.0	1	50.0	2	100.0
Inhaled	0	0.0	17	25.8	40	60.6	9	13.6	66	100.0
Contact	0	0.0	1	10.0	7	70.0	2	20.0	10	100.0
Other Contact Allergies	0	0.0	3	18.8	13	81.3	0	0.0	16	100.0
Atopic Rhinitis	0	0.0	1	33.3	2	66.7	0	0.0	3	100.0
Anesthesia Allergy	0	0.0	1	33.3	2	66.7	0	0.0	3	100.0
Drug Allergy	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Vaccine Allergy	0	0.0	3	3.4	85	95.5	1	1.1	89	100.0
Other Allergy	0	0.0	2	40.0	2	40.0	1	20.0	5	100.0
Total	0		56		218		42		316	
Endocrine										
Hypothyroid	0	0.0	36	21.8	85	51.5	44	26.7	165	100.0
Hyperthyroid	0	0.0	1	11.1	8	88.9	0	0.0	9	100.0
Cushings	0	0.0	2	16.7	8	66.7	2	16.7	12	100.0
Addisons	0	0.0	0	0.0	0	0.0	2	100.0	2	100.0
Diabetes	0	0.0	0	0.0	1	100.0	0	0.0	1	100.0

Table 25a. Prevalence of Veterinary Confirmed Health Related Disorders Reported by Age for Bitches Only

Page 3

Health Disorder	Age in Years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All Ages	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Endocrine (cont)										
Pancreatic Insufficiency	0	0.0	0	0.0	3	60.0	2	40.0	5	100.0
Other Endocrine	0	0.0	0	0.0	6	100.0	0	0.0	6	100.0
Total	0		39		111		50		200	
Gastrointestinal										
Bloat No Torsion	0	0.0	0	0.0	3	75.0	1	25.0	4	100.0
Bloat With Torsion	0	0.0	3	27.3	6	54.5	2	18.2	11	100.0
Esophageal Disorder	0	0.0	0	0.0	3	75.0	1	25.0	4	100.0
Gastritis	0	0.0	4	26.7	7	46.7	4	26.7	15	100.0
Excessive Vomiting	0	0.0	4	33.3	3	25.0	5	41.7	12	100.0
Excessive Diarrhea	0	0.0	7	50.0	2	14.3	5	35.7	14	100.0
Excessive Flatulence	0	0.0	1	14.3	5	71.4	1	14.3	7	100.0
Malabsorbtion	0	0.0	1	100.0	0	0.0	0	0.0	1	100.0
Colitis	0	0.0	0	0.0	0	0.0	1	100.0	1	100.0
Other Gastrointestinal	0	0.0	0	0.0	2	100.0	0	0.0	2	100.0
Total	0		20		31		20		71	
Hematologic										
Hemophilia	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Autoimmune Hemolytic Anemia	0	0.0	0	0.0	6	100.0	0	0.0	6	100.0
Chronic Anemia	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Thrombocytopenia	0	0.0	1	100.0	0	0.0	0	0.0	1	100.0

Table 25a. Prevalence of Veterinary Confirmed Health Related Disorders Reported by Age for Bitches Only

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Health Disorder	Age in Years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All Ages	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Hematologic (cont)										
Von Willebrand’s Disease	0	0.0	1	33.3	0	0.0	2	66.7	3	100.0
Bone Marrow Failure	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other Hematologic	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	0		2		6		2		10	
Urinary Tract / Renal										
Kidney Disease	0	0.0	1	12.5	0	0.0	7	87.5	8	100.0
Kidney Failure	0	0.0	1	8.3	2	16.7	9	75.0	12	100.0
Bladder Stones	0	0.0	0	0.0	3	60.0	2	40.0	5	100.0
Bladder Infection(s)	0	0.0	17	20.7	46	56.1	19	23.2	82	100.0
Other Urinary Tract	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	0		19		51		37		107	
Neurological										
Seizures (Unknown origin)	0	0.0	7	18.9	17	45.9	13	35.1	37	100.0
Seizures (Known origin)	0	0.0	0	0.0	6	75.0	2	25.0	8	100.0
Wobbler Syndrome	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Dementia (Senility)	0	0.0	0	0.0	0	0.0	3	100.0	3	100.0
Nerve degeneration	0	0.0	0	0.0	1	20.0	4	80.0	5	100.0
Tremors – Generalized	0	0.0	0	0.0	3	60.0	2	40.0	5	100.0
Other Neurological	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	0		7		27		24		58	

Table 25a. Prevalence of Veterinary Confirmed Health Related Disorders Reported by Age for Bitches Only

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Health Disorder	Age in Years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All Ages	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Musculoskeletal										
Eosinophilic Panosteitis	0	0.0	0	0.0	5	100.0	0	0.0	5	100.0
Osteochondritis Dessecan	0	0.0	5	83.3	0	0.0	1	16.7	6	100.0
Hip Dysplasia	0	0.0	34	61.8	0	0.0	21	38.2	55	100.0
Elbow Dysplasia	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Spondylosis	0	0.0	2	11.8	0	0.0	15	88.2	17	100.0
Degenerative Disk Disease	0	0.0	1	8.3	0	0.0	11	91.7	12	100.0
Anterior Cruciate Ligament	0	0.0	5	50.0	0	0.0	5	50.0	10	100.0
Arthritis (Autoimmune)	0	0.0	3	23.1	7	53.8	3	23.1	13	100.0
Arthritis (not Autoimmune)	0	0.0	4	5.0	42	52.5	34	42.5	80	100.0
Patella Luxation	0	0.0	1	33.3	2	66.7	0	0.0	3	100.0
Other Musculoskeletal	0	0.0	4	22.2	6	33.3	8	44.4	18	100.0
Total	0		59		62		98		219	
Eyes										
Progressive Retinal Atropy	0	0.0	0	0.0	0	0.0	1	100.0	1	100.0
Cataracts	0	0.0	9	10.6	46	54.1	30	35.3	85	100.0
Glaucoma	0	0.0	0	0.0	7	87.5	1	12.5	8	100.0
Entropion	0	0.0	2	20.0	7	70.0	1	10.0	10	100.0
Ectropion	0	0.0	2	66.7	1	33.3	0	0.0	3	100.0
Prolapsed 3 rd eyelid	0	0.0	1	100.0	0	0.0	1	100.0	2	100.0
Distichiasis	0	0.0	12	33.3	18	50.0	6	16.7	36	100.0
Uveitis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Iris Cyst	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Injury	0	0.0	5	41.7	5	41.7	2	16.7	12	100.0

Table 25a. Prevalence of Veterinary Confirmed Health Related Disorders Reported by Age for Bitches Only

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Health Disorder	Age in Years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All Ages	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Eyes (cont)										
Other Eye Diseases	0	0.0	11	31.4	15	42.9	9	25.7	35	100.0
Total	0		42		99		51		192	
Ears										
Hearing Problem	0	0.0	0	0.0	3	16.7	15	83.3	18	100.0
Chronic or Intermittent Infection	0	0.0	28	21.4	72	55.0	31	23.7	131	100.0
Hematoma	0	0.0	0	0.0	6	75.0	2	25.0	8	100.0
Other Ear Diseases	0	0.0	1	16.7	1	16.7	4	66.7	6	100.0
Total	0		29		82		52		163	
Reproductive System										
Infertility	0	0.0	3	33.3	6	66.7	0	0.0	9	100.0
Failure to Carry To Term	0	0.0	1	16.7	4	66.7	1	16.7	6	100.0
Irregular Heat Cycles	0	0.0	2	25.0	5	62.5	1	12.5	8	100.0
Chronic False Pregnancy	0	0.0	3	21.4	10	71.4	1	7.1	14	100.0
Difficult Whelping (dystocia)	0	0.0	11	29.7	19	51.4	7	18.9	37	100.0
Mastitis	0	0.0	9	29.0	13	41.9	9	29.0	31	100.0
Pyometra	0	0.0	16	26.2	33	54.1	12	19.7	61	100.0
Insufficient Milk	0	0.0	0	0.0	1	100.0	0	0.0	1	100.0
Malformed Puppies	0	0.0	4	33.3	7	58.3	1	8.3	12	100.0
Poor Mother Instinct	0	0.0	0	0.0	2	50.0	2	50.0	4	100.0
Other	0	0.0	2	50.0	2	50.0	0	0.0	4	100.0
Total	0		51		102		34		187	

Table 25a. Prevalence of Veterinary Confirmed Health Related Disorders Reported by Age for Bitches Only

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Health Disorder	Age in Years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All Ages	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Skin / Coat										
Dull and Dry	0	0.0	8	24.2	19	57.6	6	18.2	33	100.0
Seborrhea	0	0.0	3	17.6	11	64.7	3	17.6	17	100.0
Pigment Abnormalities	0	0.0	1	25.0	3	75.0	0	0.0	4	100.0
Coat Color Change	0	0.0	1	33.3	2	66.7	0	0.0	3	100.0
Sebaceous Cysts	1	0.8	23	18.4	72	57.6	29	23.2	125	100.0
Sebaceous Adenitis	0	0.0	1	33.3	1	33.3	1	33.3	3	100.0
Hot Spots	0	0.0	52	26.8	103	53.1	39	20.1	194	100.0
Lick Granuloma	0	0.0	2	25.0	4	50.0	2	25.0	8	100.0
Other Skin / Coat	0	0.0	1	5.9	11	64.7	5	29.4	17	100.0
Total	1		92		226		85		404	
Trauma / accidents										
Fracture/Broken Bones	0	0.0	6	25.0	12	50.0	6	25.0	24	100.0
Lameness Requiring Treatment	0	0.0	7	21.9	20	62.5	5	15.6	32	100.0
Laceration Requiring Stitches	0	0.0	11	22.9	22	45.8	15	31.3	48	100.0
Other Trauma/Accidents	0	0.0	6	21.4	10	35.7	12	42.9	28	100.0
Total	0		30		64		38		132	
Infections / Infestations										
Bacterial										
Anal Sacculitis	0	0.0	4	22.2	9	50.0	5	27.8	18	100.0
Pneumonia	0	0.0	0	0.0	4	57.1	3	42.9	7	100.0
Prostatitis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Cystitis	0	0.0	7	15.2	28	60.9	11	23.9	46	100.0

Table 25a. Prevalence of Veterinary Confirmed Health Related Disorders Reported by Age for Bitches Only

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Health Disorder	Age in Years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All Ages	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Bacterial (cont)										
External Ear (otitis externa)	0	0.0	17	23.9	35	49.3	19	26.8	71	100.0
Tonsillitis	0	0.0	4	44.4	3	33.3	2	22.2	9	100.0
Septicemia	0	0.0	0	0.0	3	100.0	0	0.0	3	100.0
Lyme Disease	0	0.0	6	22.2	19	70.4	2	7.4	27	100.0
Interdigital Infection	0	0.0	1	9.1	9	81.8	1	9.1	11	100.0
Other Bacterial	0	0.0	4	22.2	8	44.4	6	33.3	18	100.0
Total	0		43		118		49		210	
Viral										
Parvovirus	0	0.0	1	25.0	1	25.0	2	50.0	4	100.0
Corona Virus	0	0.0	0	0.0	8	100.0	0	0.0	8	100.0
Distemper	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Tracheobronchitis (kennel cough)	0	0.0	12	19.7	37	60.7	12	19.7	61	100.0
Other Viral	0	0.0	1	25.0	1	25.0	2	50.0	4	100.0
Total	0		14		47		16		77	
Fungal										
Ringworm	0	0.0	1	11.1	6	66.7	2	22.2	9	100.0
Other Fungal	0	0.0	3	60.0	2	40.0	0	0.0	5	100.0
Total	0		4		8		2		14	
Parasitic										
Giardia	1	2.0	11	21.6	27	52.9	12	23.5	51	100.0
Coccidia	1	1.8	19	33.9	28	50.0	8	14.3	56	100.0
Roundworms	0	0.0	21	29.6	36	50.7	14	19.7	71	100.0

Table 25a. Prevalence of Veterinary Confirmed Health Related Disorders Reported by Age for Bitches Only

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Health Disorder	Age in Years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All Ages	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Parasitic (cont)										
Hookworms	0	0.0	4	11.1	18	50.0	14	38.9	36	100.0
Whipworms	0	0.0	12	18.5	38	58.5	15	23.1	65	100.0
Tapeworms	0	0.0	9	42.9	11	52.4	1	4.8	21	100.0
Demodectic Mange	0	0.0	4	13.8	17	58.6	8	27.6	29	100.0
Sarcoptic Mange	0	0.0	3	50.0	3	50.0	0	0.0	6	100.0
Other Parasitic	0	0.0	1	20.0	3	60.0	1	20.0	5	100.0
Other Infections	0	0.0	0	0.0	0	0.0	1	100.0	1	100.0
Total	2		84		181		74		341	
Oral										
Abnormal Dentition	0	0.0	0	0.0	3	60.0	2	40.0	5	100.0
Missing Teeth	0	0.0	4	25.0	9	56.3	3	18.8	16	100.0
Malocclusion (bite problem)	0	0.0	2	40.0	2	40.0	1	20.0	5	100.0
Other Oral	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	0		6		14		6		26	
Behavior Problems										
Fear Aggression	0	0.0	3	100.0	0	0.0	0	0.0	3	100.0
Dominance Aggression	0	0.0	0	0.0	1	33.3	2	66.7	3	100.0
Inappropriate Urination	0	0.0	1	25.0	2	50.0	1	25.0	4	100.0
Other Behavior	0	0.0	1	100.0	0	0.0	0	0.0	1	100.0
Total	0		5		3		3		11	

Table 25a. Prevalence of Veterinary Confirmed Health Related Disorders Reported by Age for Bitches Only

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Health Disorder	Age in Years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All Ages	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Congenital defects										
Umbilical Hernia	0	0.0	1	50.0	1	50.0	0	0.0	2	100.0
Cleft Lip or Palate	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other Congenital Defects	0	0.0	1	25.0	3	75.0	0	0.0	4	100.0
Total	0		2		4		0		6	

Table 25b. Prevalence of Veterinary Confirmed Health Related Disorders Reported by Age for Dogs Only

Health Disorder	Age in Years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All Ages	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Neoplasia										
Osteosarcoma	0	0.0	3	21.4	9	64.3	2	14.3	14	100.0
Lymphosarcoma	0	0.0	10	30.3	20	60.6	3	9.1	33	100.0
Testicular	0	0.0	0	0.0	12	80.0	3	20.0	15	100.0
Breast	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Hemangiosarcoma	0	0.0	9	16.1	37	66.1	10	17.9	56	100.0
Mast Cell	0	0.0	3	11.5	15	57.6	8	30.8	26	100.0
Squamous Cell	0	0.0	0	0.0	4	80.0	1	20.0	5	100.0
Melanoma	0	0.0	2	18.2	5	45.5	4	36.4	11	100.0
Lipoma	0	0.0	6	13.0	26	56.5	14	30.4	46	100.0
Liver	0	0.0	1	20.0	3	60.0	1	20.0	5	100.0
Other Neoplasm	0	0.0	9	13.8	44	67.7	12	18.5	65	100.0
Total	0		30		134		50		214	
Cardiovascular										
Heart Failure	0	0.0	0	0.0	5	62.5	3	37.5	8	100.0
Cardiomyopathy	1	14.3	0	0.0	5	71.4	1	14.3	7	100.0
Heartworm Infection	0	0.0	0	0.0	1	25.0	3	75.0	4	100.0
Heart Arrhythmia	0	0.0	1	12.5	4	50.0	3	37.5	8	100.0
Heart Murmur	0	0.0	5	19.2	17	65.4	4	15.4	26	100.0
Pulmonic Stenosis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Subaortic Stenosis	0	0.0	4	44.4	4	44.4	1	11.1	9	100.0
Valve Dysfunction	0	0.0	0	0.0	3	100.0	0	0.0	3	100.0
Other Cardiovascular	0	0.0	3	42.9	1	14.2	3	42.9	7	100.0
Total	1		13		40		18		64	

Table 25b. Prevalence of Veterinary Confirmed Health Related Disorders Reported by Age for Dogs Only

Page 2

Health Disorder	Age in Years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All Ages	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Allergies										
Fleas	0	0.0	20	23.0	42	48.2	25	28.7	87	100.0
Food	0	0.0	15	39.4	16	42.1	7	18.4	38	100.0
Flea Dip / Insecticide	0	0.0	0	0.0	2	100.0	0	0.0	2	100.0
Pond / Lake Water	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Inhaled	0	0.0	22	33.8	34	52.3	9	13.8	65	100.0
Contact	0	0.0	2	14.2	8	57.1	4	28.6	14	100.0
Other Contact Allergies	0	0.0	4	50.0	4	50.0	0	0.0	8	100.0
Atopic Rhinitis	0	0.0	0	0.0	1	100.0	0	0.0	1	100.0
Anesthesia Allergy	0	0.0	1	20.0	4	80.0	0	0.0	5	100.0
Drug Allergy	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Vaccine Allergy	0	0.0	1	50.0	1	50.0	0	0.0	2	100.0
Other Allergy	0	0.0	1	8.3	10	83.4	1	8.3	12	100.0
Total	0		66		122		46		234	
Endocrine										
Hypothyroid	1	0.6	37	22.4	100	60.6	27	16.4	165	100.0
Hyperthyroid	0	0.0	0	0.0	2	50.0	2	50.0	4	100.0
Cushings	0	0.0	0	0.0	2	100.0	0	0.0	2	100.0
Addisons	0	0.0	0	0.0	2	100.0	0	0.0	2	100.0
Diabetes	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Pancreatic Insufficiency	0	0.0	0	0.0	2	100.0	0	0.0	2	100.0
Other Endocrine	0	0.0	3	50.0	3	50.0	0	0.0	6	100.0
Total	1		40		111		29		181	

Table 25b. Prevalence of Veterinary Confirmed Health Related Disorders Reported by Age for Dogs Only

Page 3

Health Disorder	Age in Years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All Ages	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Gastrointestinal										
Bloat No Torsion	0	0.0	2	15.4	7	53.8	4	30.7	13	100.0
Bloat With Torsion	0	0.0	2	15.4	8	61.5	3	23.1	13	100.0
Esophageal Disorder	0	0.0	3	30.0	4	40.0	3	30.0	10	100.0
Gastritis	0	0.0	10	41.7	10	41.7	4	16.6	24	100.0
Excessive Vomiting	0	0.0	5	41.7	6	50.0	1	8.3	12	100.0
Excessive Diarrhea	1	4.2	7	29.2	11	45.8	5	20.8	24	100.0
Excessive Flatulence	0	0.0	1	20.0	3	60.0	1	20.0	5	100.0
Malabsorbtion	0	0.0	1	33.3	1	33.3	1	33.3	3	100.0
Colitis	0	0.0	0	0.0	1	50.0	1	50.0	2	100.0
Other Gastrointestinal	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	1		31		51		23		105	
Hematologic										
Hemophilia	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Autoimmune Hemolytic Anemia	0	0.0	1	100.0	0	0.0	0	0.0	1	100.0
Chronic Anemia	0	0.0	1	20.0	2	40.0	2	40.0	5	100.0
Thrombocytopenia	0	0.0	1	20.0	4	80.0	0	0.0	5	100.0
Von Willebrand's Disease	0	0.0	1	12.5	3	37.5	4	50.0	8	100.0
Bone Marrow Failure	0	0.0	0	0.0	1	100.0	0	0.0	1	100.0
Other Hematologic	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	0		4		10		6		20	

Table 25b. Prevalence of Veterinary Confirmed Health Related Disorders Reported by Age for Dogs Only

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Health Disorder	Age in Years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All Ages	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Urinary Tract / Renal										
Kidney Disease	0	0.0	0	0.0	5	62.5	3	37.5	8	100.0
Kidney Failure	0	0.0	1	10.0	5	50.0	4	40.0	10	100.0
Bladder Stones	0	0.0	0	0.0	5	83.3	1	16.7	6	100.0
Bladder Infection(s)	0	0.0	2	14.3	8	57.1	4	28.6	14	100.0
Other Urinary Tract	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	0		3		23		12		38	
Neurological										
Seizures (Unknown origin)	0	0.0	10	27.8	19	52.7	7	19.4	36	100.0
Seizures (Known origin)	1	6.7	1	6.7	8	53.3	5	33.3	15	100.0
Wobbler Syndrome	0	0.0	0	0.0	0	0.0	2	100.0	2	100.0
Dementia (Senility)	0	0.0	0	0.0	1	25.0	3	75.0	4	100.0
Nerve degeneration	0	0.0	0	0.0	5	55.5	4	44.5	9	100.0
Tremors – Generalized	0	0.0	1	33.3	1	33.3	1	33.3	3	100.0
Other Neurological	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	1		12		34		22		69	
Musculoskeletal										
Eosinophilic Panosteitis	0	0.0	8	29.7	14	51.9	5	18.5	27	100.0
Osteochondritis Dessecan	0	0.0	5	26.3	12	63.2	2	10.5	19	100.0
Hip Dysplasia	1	0.8	32	26.4	69	57.0	19	15.7	121	100.0
Elbow Dysplasia	0	0.0	4	44.4	2	22.2	3	33.3	9	100.0

Table 25b. Prevalence of Veterinary Confirmed Health Related Disorders Reported by Age for Dogs Only

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Health Disorder	Age in Years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All Ages	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Musculoskeletal (cont)										
Spondylosis	0	0.0	1	6.7	8	53.3	6	40.0	15	100.0
Degenerative Disk Disease	0	0.0	1	10.0	3	30.0	6	60.0	10	100.0
Anterior Cruciate Ligament	0	0.0	5	41.7	4	33.3	3	25.0	12	100.0
Arthritis (Autoimmune)	0	0.0	1	9.1	9	81.8	1	9.1	11	100.0
Arthritis (not Autoimmune)	1	1.4	5	6.9	36	50.0	30	41.7	72	100.0
Patella Luxation	0	0.0	1	25.0	2	50.0	1	25.0	4	100.0
Other Musculoskeletal	0	0.0	5	31.3	10	62.5	1	6.2	16	100.0
Total	2		68		169		77		316	
Eyes										
Progressive Retinal Atropy	0	0.0	1	20.0	2	40.0	2	40.0	5	100.0
Cataracts	0	0.0	9	11.7	42	54.5	26	33.7	77	100.0
Glaucoma	0	0.0	0	0.0	3	100.0	0	0.0	3	100.0
Entropion	0	0.0	0	0.0	5	83.3	1	16.7	6	100.0
Ectropion	0	0.0	2	100.0	0	0.0	0	0.0	2	100.0
Prolapsed 3 rd eyelid	0	0.0	0	0.0	1	100.0	0	0.0	1	100.0
Distichiasis	0	0.0	8	26.7	18	60.0	4	13.3	30	100.0
Uveitis	0	0.0	0	0.0	3	100.0	0	0.0	3	100.0
Iris Cyst	0	0.0	1	25.0	3	75.0	0	0.0	4	100.0
Injury	0	0.0	3	33.3	3	33.3	3	33.3	9	100.0
Other Eye Diseases	0	0.0	7	26.9	16	61.5	3	11.5	26	100.0
Total	0		31		96		39		166	

Table 25b. Prevalence of Veterinary Confirmed Health Related Disorders Reported by Age for Dogs Only

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Health Disorder	Age in Years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All Ages	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Ears										
Hearing Problem	0	0.0	0	0.0	4	20.0	16	80.0	20	100.0
Chronic or Intermittent Infection	1	0.7	44	30.6	79	54.9	20	13.9	144	100.0
Hematoma	0	0.0	3	18.8	7	43.7	6	37.5	16	100.0
Other Ear Diseases	0	0.0	1	14.3	5	71.4	1	14.3	7	100.0
Total	1		48		95		43		187	
Reproductive System										
Chryptorchidism Unilateral	0	0.0	5	50.0	4	40.0	1	10.0	10	100.0
Cryptorchidism Bilateral	1	33.3	0	0.0	2	66.7	0	0.0	3	100.0
Enlarged Prostate	0	0.0	2	8.7	12	52.2	9	39.1	23	100.0
Lack of Libido	0	0.0	0	0.0	2	100.0	0	0.0	2	100.0
Infertility	0	0.0	1	8.3	9	75.0	2	16.7	12	100.0
Abnormal Semen	0	0.0	2	22.2	6	66.7	1	11.1	9	100.0
Testicular Atropy	0	0.0	0	0.0	5	83.3	1	16.7	6	100.0
Other Reproductive	0	0.0	0	0.0	5	83.3	1	16.7	6	100.0
Total	1		10		45		15		71	
Skin / Coat										
Dull and Dry	0	0.0	13	35.1	18	48.6	6	16.2	37	100.0
Seborrhea	0	0.0	6	28.6	11	52.4	4	19.0	21	100.0
Pigment Abnormalities	0	0.0	1	25.0	2	50.0	1	25.0	4	100.0
Coat Color Change	0	0.0	2	28.6	5	71.4	0	0.0	7	100.0

Table 25b. Prevalence of Veterinary Confirmed Health Related Disorders Reported by Age for Dogs Only

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Health Disorder	Age in Years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All Ages	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Skin/Coat (cont)										
Sebaceous Cysts	0	0.0	10	13.9	42	58.3	20	27.8	72	100.0
Sebaceous Adenitis	0	0.0	0	0.0	0	0.0	1	100.0	1	100.0
Hot Spots	0	0.0	59	25.6	131	57.0	40	17.4	230	100.0
Lick Granuloma	0	0.0	0	0.0	3	75.0	1	25.0	4	100.0
Other Skin / Coat	0	0.0	3	21.4	10	71.4	1	7.2	14	100.0
Total	0		94		222		74		390	
Trauma / accidents										
Fracture/Broken Bones	0	0.0	7	29.2	12	50.0	5	20.8	24	100.0
Lameness Requiring Treatment	0	0.0	9	20.0	27	60.0	9	20.0	45	100.0
Laceration Requiring Stitches	0	0.0	6	14.3	23	54.8	13	30.9	42	100.0
Other Trauma/Accidents	0	0.0	6	66.7	2	22.2	1	11.1	9	100.0
Total	0		28		64		28		120	
Infections / Infestations										
Bacterial										
Anal Sacculitis	0	0.0	8	28.6	16	57.1	4	14.3	28	100.0
Pneumonia	0	0.0	3	23.1	7	53.8	3	23.1	13	100.0
Prostatitis	0	0.0	0	0.0	7	77.8	2	22.2	9	100.0
Cystitis	0	0.0	1	10.0	8	80.0	1	10.0	10	100.0
External Ear (otitis externa)	0	0.0	20	29.9	39	58.2	8	11.9	67	100.0

Table 25b. Prevalence of Veterinary Confirmed Health Related Disorders Reported by Age for Dogs Only

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Health Disorder	Age in Years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All Ages	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Bacterial (cont)										
Tonsillitis	0	0.0	3	42.8	3	42.8	1	14.4	7	100.0
Septicemia	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Lyme Disease	0	0.0	2	11.7	8	47.1	7	41.2	17	100.0
Interdigital Infection	0	0.0	4	50.0	2	25.0	2	25.0	8	100.0
Other Bacterial	0	0.0	4	28.6	8	57.1	2	14.3	14	100.0
Total	0		45		98		30		173	
Viral										
Parvovirus	0	0.0	0	0.0	0	0.0	4	100.0	4	100.0
Corona Virus	0	0.0	0	0.0	2	50.0	2	50.0	4	100.0
Distemper	0	0.0	0	0.0	1	50.0	1	50.0	2	100.0
Tracheobronchitis (kennel cough)	0	0.0	17	29.8	31	54.4	9	15.8	57	100.0
Other Viral	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	0		17		34		16		67	
Fungal										
Ringworm	0	0.0	2	40.0	2	40.0	1	20.0	5	100.0
Yeast	0	0.0	0	0.0	1	100.0	0	0.0	1	100.0
Other Fungal	0	0.0	1	25.0	3	75.0	0	0.0	4	100.0
Total	0		3		6		1		11	
Parasitic										
Giardia	1	2.1	19	39.5	23	47.9	5	10.4	48	100.0
Coccidia	1	2.6	12	31.6	21	55.3	4	10.5	38	100.0

Table 25b. Prevalence of Veterinary Confirmed Health Related Disorders Reported by Age for Dogs Only

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Health Disorder	Age in Years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All Ages	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Parasitic (cont)										
Roundworms	0	0.0	15	22.7	34	51.5	17	25.7	66	100.0
Hookworms	0	0.0	6	16.7	17	47.2	13	36.1	36	100.0
Whipworms	0	0.0	5	10.2	29	59.1	15	30.6	49	100.0
Tapeworms	0	0.0	28	54.9	17	33.3	6	11.8	51	100.0
Demodectic Mange	0	0.0	5	25.0	9	45.0	6	30.0	20	100.0
Sarcoptic Mange	0	0.0	1	33.3	0	0.0	2	66.7	3	100.0
Other Parasitic	0	0.0	0	0.0	1	50.0	1	50.0	2	100.0
Other Infections	0	0.0	1	33.3	1	33.3	1	33.3	3	100.0
Total	2		92		152		70		316	
Oral										
Abnormal Dentition	0	0.0	0	0.0	5	71.4	2	28.6	7	100.0
Missing Teeth	0	0.0	6	35.3	9	52.9	2	11.7	17	100.0
Malocclusion (bite problem)	0	0.0	1	14.3	3	42.8	3	42.8	7	100.0
Other Oral	0	0.0	1	33.3	2	66.7	0	0.0	3	100.0
Total	0		8		19		7		34	
Behavior Problems										
Fear Aggression	0	0.0	0	0.0	2	100.0	0	0.0	2	100.0
Dominance Aggression	0	0.0	2	66.7	0	0.0	1	33.3	3	100.0
Inappropriate Urination	0	0.0	1	50.0	1	50.0	0	0.0	2	100.0
Other Behavior	0	0.0	0	0.0	2	100.0	0	0.0	2	100.0
Total	0		3		5		1		9	

Table 25b. Prevalence of Veterinary Confirmed Health Related Disorders Reported by Age for Dogs Only

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Health Disorder	Age in Years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All Ages	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Congenital defects										
Umbilical Hernia	0	0.0	1	33.3	1	33.3	1	33.3	3	100.0
Cleft Lip or Palate	0	0.0	0	0.0	0	0.0	0	0.0	0	100.0
Other Congenital Defects	0	0.0	0	0.0	1	50.0	1	50.0	2	100.0
Total	0		1		2		2		5	

Table 26. Age Specific Veterinary Confirmed Health Related Disorder Rates (per 1000 dog years)

Disorder	Age in Years			
	0 – 2.9	3 – 7.9	8 – 12.9	13+
Neoplasia	2.17	31.87	116.80	147.93
Osteosarcoma	0	1.38	6.25	7.92
Dogs	0	2.10	5.43	6.51
Bitches	0	0.82	6.86	8.89
Lymphosarcoma	0.24	4.60	10.86	15.85
Dogs	0.55	4.20	13.97	13.02
Bitches	0	4.91	8.57	17.78
Testicular				
Dogs	0.55	0.67	8.54	0
Breast				
Bitches	0	3.82	14.86	13.34
Hemangiosarcoma	0	1.99	25.00	29.06
Dogs	0	3.15	31.82	39.06
Bitches	0	0.82	19.44	22.23
Mast cell	0.24	5.21	8.88	7.92
Dogs	0.55	5.95	4.66	13.02
Bitches	0	4.64	12.00	4.45
Squamous cell	0	0.46	2.30	2.64
Dogs	0	0.70	2.33	0
Bitches	0	0.27	2.29	4.45
Melanoma	0	1.07	4.94	2.64
Dogs	0	1.05	5.43	6.51
Bitches	0	1.09	4.57	0
Lipoma	0.48	7.66	15.79	10.57
Dogs	0	8.75	13.97	13.02
Bitches	0.86	6.83	17.15	8.89
Liver	0	0.31	1.32	7.92
Dogs	0	0.35	2.33	6.51
Bitches	0	0.27	0.57	8.89
Other neoplasm	0.48	5.97	31.26	68.68
Dogs	1.10	4.20	35.70	58.59
Bitches	0	7.37	28.01	75.57
Cardiovascular	13.72	7.35	16.45	21.13
Heart failure	0	0.31	3.95	13.21
Dogs	0	0	3.88	19.53
Bitches	0	0.55	4.00	8.89
Cardiomyopathy	0.24	0.31	1.97	2.64
Dogs	0.55	0.35	3.10	6.51
Bitches	0	0.27	1.14	0

Table 26. Age Specific Veterinary Confirmed Health Related Disorder Rates (per 1000 dog years) Page 2

Disorder	Age in Years			
	0 – 2.9	3 – 7.9	8 – 12.9	13+
Heartworm infection	0	0.77	0.33	0
Dogs	0	1.05	0	0
Bitches	0	0.55	0.57	0
Heart arrhythmia	0.48	0.46	4.94	2.64
Dogs	0.55	0.35	3.88	6.51
Bitches	0.43	0.55	5.72	0
Heart murmur	9.63	3.22	0.99	0
Dogs	9.86	2.10	0.78	0
Bitches	9.47	4.10	1.14	0
Pulmonic stenosis	0.24	0	0	0
Dogs	0	0	0	0
Bitches	0.43	0	0	0
Subaortic stenosis	1.93	0.92	0.66	0
Dogs	1.10	1.05	0.78	0
Bitches	2.58	0.82	0.57	0
Valve dysfunction	0.72	0.15	1.32	0
Dogs	0.55	0.35	0.78	0
Bitches	0.86	0	1.71	0
Other cardiovascular	0.48	1.23	2.30	2.64
Dogs	0	1.40	2.33	0
Bitches	0.86	1.09	2.29	4.45
Allergies	73.19	26.35	9.54	7.92
Fleas	31.30	5.97	1.97	0
Dogs	34.51	7.00	1.55	0
Bitches	28.85	5.19	2.29	0
Food	10.35	2.76	0.99	0
Dogs	13.70	3.50	1.55	0
Bitches	7.75	2.18	0.57	0
Flea Dip / Insecticide	0.48	0.15	0	0
Dogs	0.54	0.35	0	0
Bitches	0.43	0	0	0
Inhaled	16.85	5.06	0.66	0
Dogs	20.27	4.90	0.78	0
Bitches	14.21	5.19	0.57	0
Contact	4.57	3.37	1.32	0
Dogs	6.57	3.50	0.78	0
Bitches	3.01	3.28	1.71	0
Other contact allergies	4.33	2.91	0.33	0
Dogs	4.38	3.15	0	0
Bitches	4.31	2.73	0.57	0

Table 26. Age Specific Veterinary Confirmed Health Related Disorder Rates (per 1000 dog years) Page 3

Disorder	Age in Years			
	0 – 2.9	3 – 7.9	8 – 12.9	13+
Atopic rhinitis	0.72	0.15	0	0
Dogs	0.55	0	0	0
Bitches	0.86	0.27	0	0
Anesthesia allergy	0.72	0.46	0.66	0
Dogs	0.55	1.05	0.78	0
Bitches	0.86	0	0.57	0
Drug allergy	2.89	1.38	0.99	0
Dogs	3.29	1.10	0.78	0
Bitches	2.58	1.64	1.14	0
Other allergy	1.20	0.92	0.66	2.64
Dogs	1.64	0.70	0.78	0
Bitches	0.86	1.09	0.57	4.45
Vaccine allergy	0.48	0.31	0	2.64
Dogs	1.64	0.34	0	0
Bitches	0.86	0.27	0	4.45
Endocrine	19.50	30.64	26.98	34.34
Hypothyroid	17.57	27.42	22.04	15.85
Dogs	23.56	32.18	18.63	19.53
Bitches	12.92	23.75	24.58	13.34
Hyperthyroid	0.72	0.92	0.99	2.64
Dogs	1.10	0.70	0	0
Bitches	0.43	1.09	1.71	4.45
Cushings	0.24	0.77	1.65	5.28
Dogs	0	0.35	0.78	0
Bitches	0.43	1.09	2.29	8.89
Addisons	0	0.31	0	5.28
Dogs	0	0.70	0	0
Bitches	0	0	0	8.89
Diabetes	0	0	0	2.64
Dogs	0	0	0	0
Bitches	0	0	0	4.45
Pancreatic insufficiency	0.48	0.31	0.66	2.64
Dogs	0.55	0	0.78	0
Bitches	0.43	0.55	0.57	4.45
Other endocrine	0.48	0.92	1.65	0
Dogs	0	1.40	1.55	0
Bitches	0.86	0.55	1.71	0

Table 26. Age Specific Veterinary Confirmed Health Related Disorder Rates (per 1000 dog years) Page 4

Disorder	Age in Years			
	0 – 2.9	3 – 7.9	8 – 12.9	13+
Gastrointestinal	13.72	16.70	48.37	95.10
Bloat no torsion	0.96	1.07	1.97	0
Dogs	1.10	2.10	3.88	0
Bitches	0.86	0.27	0.57	0
Bloat with torsion	0.24	0.92	4.94	5.28
Dogs	0	0.70	7.76	6.51
Bitches	0.43	1.09	2.86	4.45
Esophageal disorder	0.24	0.92	1.97	2.64
Dogs	0.55	1.75	2.33	6.51
Bitches	0	0.27	1.71	0
Gastritis	2.89	2.60	2.30	0
Dogs	3.83	3.85	3.10	0
Bitches	2.15	1.64	1.71	0
Excessive vomiting	1.93	1.38	1.97	2.64
Dogs	3.29	1.05	2.33	0
Bitches	0.86	1.64	1.71	4.45
Excessive diarrhea	3.85	1.69	2.30	10.57
Dogs	6.03	2.45	3.10	13.02
Bitches	2.15	1.09	1.71	8.89
Excessive flatulence	0.96	0.92	0.66	0
Dogs	1.10	1.05	0	0
Bitches	0.86	0.82	1.14	0
Malabsorbtion	0.48	0	0.33	0
Dogs	0.55	0	0.78	0
Bitches	0.43	0	0	0
Colitis	0	0	0	0
Dogs	0	0	0	0
Bitches	0	0	0	0
Other gastrointestinal	0.48	0.31	0	2.64
Dogs	0.55	0.35	0	0
Bitches	0.43	0.27	0	4.45
Hematologic	4.57	2.30	5.26	10.57
Hemophilia	0	0	0	0
Dogs	0	0	0	0
Bitches	0	0	0	0
Autoimmune hemolytic anemia	0.24	0.15	0	0
Dogs	0	0.35	0	0
Bitches	0.43	0	0	0

Table 26. Age Specific Veterinary Confirmed Health Related Disorder Rates (per 1000 dog years) Page 5

Disorder	Age in Years			
	0 – 2.9	3 – 7.9	8 – 12.9	13+
Chronic anemia	0.24	0.15	0.66	5.28
Dogs	0	0.35	1.55	13.02
Bitches	0.43	0	0	0
Thrombocytopenia	0.24	0.31	0.99	0
Dogs	0.55	0.35	0.78	0
Bitches	0	0.27	1.14	0
von Willebrand's disease	2.41	0	0.33	0
Dogs	3.29	0	0.78	0
Bitches	1.72	0	0	0
Bone marrow failure	0	0	0.66	0
Dogs	0	0	0.78	0
Bitches	0	0	0.57	0
Other hematologic	0.48	0.61	0.66	5.28
Dogs	0.55	0.70	1.55	6.51
Bitches	0.43	0.55	0	4.45
Urinary Tract \ Renal	10.11	7.97	16.78	63.40
Kidney disease	0	0.61	4.28	13.21
Dogs	0	0.35	4.66	6.51
Bitches	0	0.82	4.00	17.78
Kidney failure	0	0.31	2.30	36.98
Dogs	0	0.35	3.88	26.04
Bitches	0	0.27	1.14	44.45
Bladder stones	0.24	0.77	1.32	2.64
Dogs	0	0.70	3.10	0
Bitches	0.43	0.82	0	4.45
Bladder infection(s)	8.67	4.60	7.90	7.92
Dogs	2.19	1.05	4.66	6.51
Bitches	13.78	7.37	10.29	8.89
Other urinary tract	1.20	1.69	0.99	2.64
Dogs	0.55	0	1.55	0
Bitches	1.72	3.00	0.57	4.45
Neurological	6.26	7.66	13.82	79.25
Seizures of unknown origin	4.57	5.36	3.95	10.57
Dogs	5.48	7.00	2.33	13.02
Bitches	3.88	4.10	5.14	8.89
Seizures of known origin	1.20	0.61	1.97	13.21
Dogs	2.19	1.05	1.55	19.53
Bitches	0.43	0.27	2.29	8.89

Table 26. Age Specific Veterinary Confirmed Health Related Disorder Rates (per 1000 dog years) Page 6

Disorder	Age in Years			
	0 – 2.9	3 – 7.9	8 – 12.9	13+
Wobbler syndrome	0	0	0.33	2.64
Dogs	0	0	0.78	6.51
Bitches	0	0	0	0
Dementia (senility)	0	0	0.99	10.57
Dogs	0	0	1.55	13.02
Bitches	0	0	0.57	8.89
Nerve degeneration	0	0.46	2.30	10.57
Dogs	0	0.70	3.88	13.02
Bitches	0	0.27	1.14	8.89
Tremors – generalized	0	0.31	1.32	5.28
Dogs	0	0.70	0.78	0
Bitches	0	0	1.71	8.89
Other neurological	0.48	0.92	2.96	26.42
Dogs	0.55	1.75	4.66	26.04
Bitches	0.43	0.27	1.71	26.67
Musculoskeletal	64.28	24.21	57.91	60.76
Eosinophilic panosteitis	7.22	0.15	0.33	0
Dogs	14.24	0.35	0	0
Bitches	1.72	0	0.57	0
Osteochondritis dessecan	6.98	0.31	0.33	0
Dogs	9.86	0	0.78	0
Bitches	4.74	0.55	0	0
Hip dysplasia	44.30	7.05	4.28	2.64
Dogs	46.02	8.05	6.21	6.51
Bitches	43.06	6.28	2.86	0
Elbow dysplasia	0.72	0.92	0.33	0
Dogs	1.64	2.10	0	0
Bitches	0	0	0.57	0
Spondylosis	0	1.84	9.21	7.92
Dogs	0	2.45	6.21	0
Bitches	0	1.37	11.43	13.34
Degenerative disk disease	0	0.77	3.95	15.85
Dogs	0	0.70	3.88	13.02
Bitches	0	0.82	4.00	17.78
Anterior cruciate ligament tear	0.48	2.30	3.95	0
Dogs	0	3.15	2.33	0
Bitches	0.86	1.64	5.14	0
Arthritis (autoimmune)	0	1.38	4.28	5.28
Dogs	0	1.05	5.43	6.51
Bitches	0	1.64	3.43	4.45

Table 26. Age Specific Veterinary Confirmed Health Related Disorder Rates (per 1000 dog years) Page 7

Disorder	Age in Years			
	0 – 2.9	3 – 7.9	8 – 12.9	13+
Arthritis (not autoimmune)	1.69	6.74	28.30	26.42
Dogs	1.10	7.35	32.59	32.55
Bitches	2.15	6.28	25.15	22.23
Patella luxation	0.72	0.61	0	0
Dogs	0.55	1.05	0	0
Bitches	0.86	0.27	0	0
Other musculoskeletal	2.17	2.14	2.96	2.64
Dogs	2.19	3.50	1.55	0
Bitches	2.15	1.09	4.00	4.45
Eyes	28.17	17.77	39.15	34.34
Progressive retinal atropy	0.24	0.46	0.66	0
Dogs	0.55	1.05	0.78	0
Bitches	0	0	0.57	0
Cataracts	7.94	6.28	23.36	29.06
Dogs	7.12	6.65	27.94	39.06
Bitches	8.61	6.01	20.01	22.23
Glaucoma	0	0.15	3.29	0
Dogs	0	0	2.33	0
Bitches	0	0.27	4.00	0
Entropion	3.37	0.15	0.33	0
Dogs	2.74	0	0.78	0
Bitches	3.88	0.27	0	0
Ectropion	0.96	0.15	0	0
Dogs	1.10	0	0	0
Bitches	0.86	0.27	0	0
Prolapsed 3 rd eyelid	0	0.15	0.66	0
Dogs	0	0	0.78	0
Bitches	0	0.27	0.57	0
Distichiasis	10.35	3.06	0	0
Dogs	12.05	2.45	0	0
Bitches	9.04	3.55	0	0
Uveitis	0.24	1.38	1.97	0
Dogs	0.54	0.70	1.55	0
Bitches	0	1.91	2.29	0
Iris Cyst	0.72	1.07	0.66	0
Dogs	0.55	0.70	0	0
Bitches	0.86	1.37	1.14	0
Injury	0.96	1.38	1.65	2.64
Dogs	1.10	1.75	0.78	0
Bitches	0.86	1.09	2.29	4.45

Table 26. Age Specific Veterinary Confirmed Health Related Disorder Rates (per 1000 dog years) Page 8

Disorder	Age in Years			
	0 – 2.9	3 – 7.9	8 – 12.9	13+
Other eye diseases	4.57	6.13	9.54	2.64
Dogs	3.83	5.95	7.76	0
Bitches	5.17	6.28	10.86	4.45
Ears	37.32	16.69	17.11	44.91
Hearing problem	0.24	0	7.24	36.98
Dogs	0	0	9.31	45.57
Bitches	0.43	0	5.72	31.12
Chronic or intermittent infection	35.15	14.25	4.61	2.64
Dogs	42.73	16.79	5.43	0
Bitches	29.28	12.01	4.00	4.45
Hematoma	0	1.69	3.62	2.64
Dogs	0	2.45	5.43	6.51
Bitches	0	1.09	2.29	0
Other ear diseases	2.65	2.14	5.26	5.28
Dogs	2.19	2.807	6.98	6.51
Bitches	3.01	1.64	4.00	4.45
Reproductive (Bitches)	18.51	33.31	7.43	0.0
Infertility				
Bitches	0.43	2.18	0	0
Failure to carry to term				
Bitches	0	1.64	0	0
Irregular heat cycles				
Bitches	2.58	0.27	0	0
Chronic false pregnancy				
Bitches	5.60	0.27	0	0
Difficult whelping (dystocia)				
Bitches	3.44	6.83	1.14	0
Mastitis				
Bitches	3.44	5.73	1.14	0
Pyometra				
Bitches	2.15	12.56	5.14	0
Insufficient milk				
Bitches	0	0.27	0	0
Malformed puppies				
Bitches	0.43	2.73	0	0
Poor mothering instinct				
Bitches	0.43	0.82	0	0

Table 26. Age Specific Veterinary Confirmed Health Related Disorder Rates (per 1000 dog years) Page 9

Disorder	Age in Years			
	0 – 2.9	3 – 7.9	8 – 12.9	13+
Reproductive (Dogs)	25.09	39.61	30.71	13.02
Infertility				
Dogs	0.55	2.45	3.10	0
Cryptorchidism unilateral				
Dogs	4.93	0	0	0
Cryptorchidism bilateral				
Dogs	0.55	0.35	0.78	0
Enlarged prostate				
Dogs	0	2.10	10.86	6.51
Lack of libido				
Dogs	0	0.35	0.78	0
Abnormal semen				
Dogs	0.55	1.05	3.88	0
Testicular atrophy				
Dogs	0	0	3.88	6.51
Other reproductive	0.72	0.61	1.97	0
Dogs	0.55	0.70	3.10	0
Bitches	0.86	0.55	1.14	0
Skin/Coat	72.94	48.11	42.77	18.49
Dull and dry	6.50	4.14	3.62	2.64
Dogs	7.12	5.95	4.66	0
Bitches	6.03	2.73	2.86	4.45
Seborrhea	4.57	1.53	1.97	0
Dogs	6.03	1.75	2.33	0
Bitches	3.44	1.37	1.71	0
Pigment abnormalities	0	1.07	0.33	0
Dogs	0	1.05	0.78	0
Bitches	0	1.09	0	0
Coat color change	0	0.77	0.99	0
Dogs	0	1.05	1.55	0
Bitches	0	0.55	0.57	0
Sebaceous cysts	2.41	15.78	24.68	7.92
Dogs	2.19	12.59	20.95	13.02
Bitches	2.58	18.29	27.44	4.45
Sebaceous adenitis	0.24	0.15	0.66	0
Dogs	0	0	0.78	0
Bitches	0.43	0.27	0.57	0

Table 26. Age Specific Veterinary Confirmed Health Related Disorder Rates (per 1000 dog years) Page 10

Disorder	Age in Years			
	0 – 2.9	3 – 7.9	8 – 12.9	13+
Hot spots	55.85	21.76	6.25	0
Dogs	70.67	25.19	8.54	0
Bitches	44.35	18.84	4.57	0
Lick Granuloma	0.24	1.23	0.66	2.64
Dogs	0	0.70	0.77	6.51
Bitches	0.43	1.64	0.57	0
Other skin/coat	4.33	4.44	4.28	7.92
Dogs	5.48	2.80	3.88	6.51
Bitches	3.44	5.73	4.57	8.89
Trauma / accidents	17.82	18.23	14.48	15.85
Fracture/broken bones	5.06	2.30	2.30	7.92
Dogs	7.12	2.10	3.10	0
Bitches	3.44	2.46	1.71	13.34
Lameness requiring treatment	2.17	6.28	6.91	2.64
Dogs	3.29	8.75	7.76	6.51
Bitches	1.29	4.37	6.29	0
Laceration requiring stitches	6.98	7.20	3.29	2.64
Dogs	6.03	8.75	3.10	6.51
Bitches	7.75	6.00	3.43	0
Other trauma/accidents	3.61	2.45	1.97	2.64
Dogs	1.64	1.75	3.10	0
Bitches	5.17	2.73	1.14	4.45
Infections / Infestations	141.31	64.04	36.19	29.06
Bacterial				
Anal sacculitis	3.85	3.37	2.30	0
Dogs	4.93	4.20	4.66	0
Bitches	3.01	2.73	0.57	0
Pneumonia	0.48	1.84	0.66	10.57
Dogs	1.10	3.15	0	13.02
Bitches	0	0.82	1.14	8.89
Prostatitis				
Dogs	0.55	1.40	3.10	0
Cystitis	4.33	3.06	3.62	0
Dogs	1.10	1.05	2.33	0
Bitches	6.89	4.64	4.57	0
External ear (otitis externa)	19.26	7.05	2.30	0
Dogs	19.72	8.40	2.33	0
Bitches	18.94	6.01	2.29	0

Table 26. Age Specific Veterinary Confirmed Health Related Disorder Rates (per 1000 dog years) Page 11

Disorder	Age in Years			
	0 – 2.9	3 – 7.9	8 – 12.9	13+
Tonsillitis	2.41	0.77	0.33	0
Dogs	2.19	0.70	0.78	0
Bitches	2.58	0.82	0	0
Septicemia	0	0.15	0.66	0
Dogs	0	0	0	0
Bitches	0	0.27	1.14	0
Lyme disease	1.69	3.98	2.96	2.64
Dogs	1.10	2.80	3.88	6.51
Bitches	2.15	4.91	2.29	0
Interdigital infection	0.96	1.84	0.66	0
Dogs	0.55	2.45	0	0
Bitches	1.29	1.37	1.14	0
Other bacterial	3.37	1.84	2.96	2.64
Dogs	4.93	2.10	3.88	0
Bitches	2.15	1.64	2.29	4.45
Viral				
Parvovirus	1.69	0	0	2.64
Dogs	1.64	0	0	6.51
Bitches	1.72	0	0	0
Corona virus	2.17	0.46	0	0
Dogs	1.10	0.70	0	0
Bitches	3.01	0.27	0	0
Distemper	0	0.15	0	2.64
Dogs	0	0.35	0	6.51
Bitches	0	0	0	0
Tracheobronchitis (kennel cough)	9.63	10.57	2.30	2.64
Dogs	12.60	10.49	2.33	0
Bitches	7.32	10.65	2.29	4.45
Other viral	0.24	0.61	0.33	0
Dogs	0.55	0.70	0	0
Bitches	0	0.55	0.57	0
Fungal				
Ringworm	1.69	1.07	0	0
Dogs	2.19	0.35	0	0
Bitches	1.29	1.64	0	0
Yeast	0.24	0	0	0
Dogs	0.55	0	0	0
Bitches	0	0	0	0
Other fungal	0	0	0.33	0
Dogs	0	0	0.78	0
Bitches	0	0	0	0

Table 26. Age Specific Veterinary Confirmed Health Related Disorder Rates (per 1000 dog years) Page 12

Disorder	Age in Years			
	0 – 2.9	3 – 7.9	8 – 12.9	13+
Parasitic				
Giardia	11.07	4.90	4.61	2.64
Dogs	13.70	5.25	5.43	0
Bitches	9.04	4.64	4.00	4.45
Coccidia	17.82	2.14	0.66	0
Dogs	14.79	2.80	0.78	0
Bitches	20.24	1.64	0.57	0
Roundworms	26.24	2.45	0	0
Dogs	27.39	3.15	0	0
Bitches	24.97	1.91	0	0
Hookworms	10.35	2.30	1.65	0
Dogs	11.50	2.45	2.33	0
Bitches	9.47	2.18	1.14	0
Whipworms	12.76	7.35	2.30	2.64
Dogs	14.79	4.90	2.33	6.51
Bitches	10.76	9.28	2.29	0
Tapeworms	3.37	4.14	0.33	0
Dogs	5.48	4.20	0.78	0
Bitches	1.72	4.10	0	0
Demodectic mange	5.54	2.30	2.30	0
Dogs	4.93	2.45	1.55	0
Bitches	6.03	2.18	2.86	0
Sarcoptic mange	0.96	0.62	0.33	0
Dogs	1.10	0	0.78	0
Bitches	0.86	1.10	0	0
Other parasitic	4.33	5.21	2.96	0
Dogs	6.03	5.25	3.10	0
Bitches	3.01	5.19	2.86	0
Other infections	0.24	0.31	0.33	0
Dogs	0.55	0.35	0.78	0
Bitches	0	0.27	0	0
Oral	9.39	0.92	2.63	0
Abnormal dentition	2.17	0.15	0.66	0
Dogs	2.74	0	1.55	0
Bitches	1.72	0.27	0	0
Missing teeth	4.57	0.61	1.32	0
Dogs	4.93	1.05	0.78	0
Bitches	4.31	0.27	1.71	0

Table 26. Age Specific Veterinary Confirmed Health Related Disorder Rates (per 1000 dog years) Page 13

Disorder	Age in Years			
	0 – 2.9	3 – 7.9	8 – 12.9	13+
Malocclusion (bite problem)	2.41	0	0.33	0
Dogs	2.74	0	0.78	0
Bitches	2.15	0	0	0
Other oral	0.24	0.15	0.33	0
Dogs	0.55	0.35	0.78	0
Bitches	0	0	0	0
Behavior Problems	2.41	1.53	0.66	0
Fear aggression	0.72	0.15	0	0
Dogs	0.55	0.35	0	0
Bitches	0.86	0	0	0
Dominance aggression	0.24	0.61	0.33	0
Dogs	0.55	0.70	0	0
Bitches	0	0.55	0.57	0
Inappropriate urination	0.72	0.31	0.33	0
Dogs	0.55	0.35	0	0
Bitches	0.86	0.27	0.57	0
Other behavior	0.72	0.46	0	0
Dogs	0.55	0.35	0	0
Bitches	0.86	0.55	0	0
Congenital defects	3.61	0.77	0.33	0
Umbilical hernia	1.44	0	0	0
Dogs	1.64	0	0	0
Bitches	1.29	0	0	0
Cleft lip or palate	0	0	0	0
Dogs	0	0	0	0
Bitches	0	0	0	0
Other congenital defects	1.93	0.15	0	0
Dogs	1.10	0	0	0
Bitches	2.58	0.27	0	0

Table 27. Body Condition and Health Disorders

Body Condition	Health Disorder		P value	
	Breast Cancer Number (%)	Other Neoplasm Number (%)		
Puppy				
Underweight	3 (11.5)	23 (88.5)	0.40	
Average	39 (9.8)	358 (90.2)		
Overweight	0 (0.0)	16 (100)		
Total	42 (9.6)	397 (90.4)		
Adult				
Underweight	1 (8.3)	11 (91.7)	0.15	
Average	42 (10.7)	350 (89.3)		
Overweight	1 (2.0)	48 (98.0)		
Total	44 (9.7)	409 (90.3)		
		Any Neoplasm Number (%)	No Neoplasm Number (%)	
Puppy				
Underweight	33 (34.4)	63 (65.6)	0.94	
Average	452 (35.9)	806 (64.1)		
Overweight	17 (34.7)	32 (65.3)		
Total	502 (35.8)	901 (64.2)		
Adult				
Underweight	12 (36.4)	21 (63.6)	0.97	
Average	447 (35.8)	803 (64.2)		
Overweight	58 (36.7)	100 (63.3)		
Total	517 (35.9)	924 (64.1)		
		Lymphosarcoma Number (%)	No Lymphosarcoma Number (%)	
Puppy				
Underweight	4 (4.2)	92 (95.8)	0.55	
Average	62 (4.9)	1194 (95.1)		
Overweight	4 (8.2)	45 (91.8)		
Total	70 (5.0)	1331 (95.0)		
Adult				
Underweight	4 (12.1)	29 (87.9)	0.15	
Average	60 (4.8)	1188 (95.2)		
Overweight	7 (4.4)	151 (95.6)		
Total	71 (4.9)	1368 (95.1)		

Table 27. Body Condition and Health Disorders

Page 2

Body Condition	Health Disorder		P value
	Hemangiosarcoma	No Hemangiosarcoma	
	Number (%)	Number (%)	
Puppy			
Underweight	6 (6.3)	90 (93.8)	0.97
Average	85 (6.8)	1171 (93.2)	
Overweight	3 (6.1)	46 (93.9)	
Total	94 (6.7)	1307 (93.3)	
Adult			
Underweight	0 (0.0)	33 (100)	0.12
Average	91 (7.3)	1157 (92.7)	
Overweight	7 (4.4)	151 (95.6)	
Total	98 (6.8)	1341 (93.2)	
	Hypothyroidism	No Hypothyroidism	
	Number (%)	Number (%)	
Puppy			
Underweight	16 (16.7)	80 (83.3)	0.35
Average	288 (22.9)	968 (77.1)	
Overweight	12 (24.5)	37 (75.5)	
Total	316 (22.6)	1085 (77.4)	
Adult			
Underweight	8 (24.2)	25 (75.8)	0.14
Average	276 (22.1)	972 (77.9)	
Overweight	46 (29.1)	112 (70.9)	
Total	330 (22.9)	1109 (77.1)	
	Hot Spots	No Hot Spots	
	Number (%)	Number (%)	
Puppy			
Underweight	19 (19.8)	77 (80.2)	0.10
Average	374 (29.8)	882 (70.2)	
Overweight	16 (32.7)	33 (67.3)	
Total	409 (29.2)	992 (70.8)	
Adult			
Underweight	14 (42.4)	19 (57.6)	0.13
Average	357 (28.6)	891 (71.4)	
Overweight	52 (32.9)	106 (67.1)	
Total	423 (29.4)	1016 (70.6)	

Table 27. Body Condition and Health Disorders**Page 3**

Body Condition	Health Disorder		P value
	Any Musculoskeletal	No Musculoskeletal	
	Number (%)	Number (%)	
Puppy			
Underweight	34 (35.4)	62 (64.6)	0.002
Average	414 (32.9)	844 (67.1)	
Overweight	28 (57.1)	21 (42.9)	
Total	476 (33.9)	927 (66.1)	
Adult			
Underweight	13 (39.4)	20 (60.6)	0.04
Average	406 (32.5)	844 (67.5)	
Overweight	67 (42.4)	91 (57.6)	
Total	486 (33.7)	955 (66.3)	
	Hip Dysplasia	No Hip Dysplasia	
	Number (%)	Number (%)	
Puppy			
Underweight	14 (14.6)	82 (85.4)	0.04
Average	217 (17.3)	1041 (82.7)	
Overweight	15 (30.6)	34 (69.4)	
Total	246 (17.5)	1157 (82.5)	
Adult			
Underweight	5 (15.2)	28 (84.8)	0.02
Average	207 (16.6)	1043 (83.4)	
Overweight	40 (25.3)	118 (74.7)	
Total	252 (17.5)	1189 (82.5)	

Table 28. Morphometrics and Health Disorders

Measurement	Bitches		P value	Dogs		P value
	Yes Number (%)	No Number (%)		Yes Number (%)	No Number (%)	
Hypothyroidism						
Height (inches)						
20 - 21	35 (17.0)	171 (83.0)	0.04 ^a	1 (20.0)	4 (80.0)	0.49
22 - 23	90 (21.3)	333 (78.7)		57 (25.2)	169 (74.8)	
24 - 25	17 (34.7)	32 (65.3)		87 (30.4)	199 (69.6)	
26+	1 (10.0)	9 (90.0)		7 (21.9)	25 (78.1)	
Total	143 (20.8)	545 (79.2)		152 (27.7)	397 (72.3)	
Weight (pounds)						
48 - 61	78 (22.3)	271 (77.7)	0.41	7 (18.4)	31 (81.6)	0.08
62 - 69	48 (17.5)	226 (82.5)		28 (25.0)	84 (75.0)	
70 - 76	27 (23.3)	89 (76.7)		50 (22.0)	177 (78.0)	
77+	11 (18.6)	48 (81.4)		78 (31.5)	170 (68.5)	
Total	164 (20.6)	634 (79.4)		163 (26.1)	462 (73.9)	
Weight/Height Index						
2.25 - 2.76	68 (23.9)	217 (76.1)	0.42	10 (17.9)	46 (82.1)	0.29
2.77 - 2.99	39 (19.4)	162 (80.6)		28 (26.4)	78 (73.6)	
3.00 - 3.25	22 (18.0)	100 (82.0)		52 (27.8)	135 (72.2)	
3.26+	14 (17.9)	64 (82.1)		61 (30.8)	137 (69.2)	
Total	143 (20.8)	543 (79.2)		151 (27.6)	396 (72.4)	
Hotspots						
Height (inches)						
20 - 21	43 (20.9)	163 (79.1)	0.25	1 (20.0)	4 (80.0)	0.44
22 - 23	92 (21.7)	331 (78.3)		72 (31.9)	154 (68.1)	
24 - 25	15 (30.6)	34 (69.4)		109 (38.1)	177 (61.9)	
26+	4 (40.0)	6 (60.0)		11 (34.4)	21 (65.6)	
Total	154 (22.4)	534 (77.6)		193 (35.2)	356 (64.8)	
Weight (pounds)						
48 - 61	70 (20.1)	279 (79.9)	0.001 ^a	10 (26.3)	28 (73.7)	0.36
62 - 69	65 (23.7)	209 (76.3)		35 (31.3)	77 (68.7)	
70 - 76	36 (31.0)	80 (69.0)		86 (37.9)	141 (62.1)	
77+	22 (37.3)	37 (62.7)		93 (37.5)	155 (62.5)	
Total	193 (24.2)	605 (75.8)		224 (35.8)	401 (64.2)	
Weight/Height Index						
2.25 - 2.76	55 (19.3)	230 (80.7)	0.15	12 (21.4)	44 (78.6)	0.06
2.77 - 2.99	49 (24.4)	152 (75.6)		33 (31.1)	73 (68.9)	
3.00 - 3.25	26 (21.3)	96 (78.7)		75 (40.1)	112 (59.9)	
3.26+	24 (30.8)	54 (69.2)		72 (36.4)	126 (63.6)	
Total	154 (22.4)	532 (77.6)		192 (35.1)	355 (64.9)	

Table 28. Morphometrics and Health Disorders

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Measurement	Bitches			Dogs		
	Yes Number (%)	No Number (%)	P value	Yes Number (%)	No Number (%)	P value
Lymphosarcoma						
Height (inches)						
20 - 21	5 (2.4)	201 (97.6)	0.30	1 (20.0)	4 (80.0)	0.25
22 - 23	23 (5.4)	400 (94.6)		12 (5.3)	214 (94.7)	
24 - 25	3 (6.1)	46 (93.9)		18 (6.3)	268 (93.7)	
26+	0 (0.0)	10 (100)		0 (0.0)	32 (100)	
Total	31 (4.5)	657 (95.5)		31 (5.6)	518 (94.4)	
Weight (pounds)						
48 - 61	12 (3.4)	337 (96.6)	0.02 ^a	5 (13.2)	33 (86.8)	0.16
62 - 69	18 (6.6)	256 (93.4)		6 (5.4)	106 (94.6)	
70 - 76	2 (1.7)	114 (98.3)		11 (4.8)	216 (95.2)	
77+	6 (10.2)	53 (89.8)		11 (4.4)	237 (95.6)	
Total	38 (4.8)	760 (95.2)		33 (5.3)	592 (94.7)	
Weight/Height Index						
2.25 - 2.76	9 (3.2)	276 (96.8)	0.25	5 (8.9)	51 (91.1)	0.19
2.77 - 2.99	14 (7.0)	187 (93.0)		9 (8.5)	97 (91.5)	
3.00 - 3.25	5 (4.1)	117 (95.9)		6 (3.2)	181 (96.8)	
3.26+	3 (3.8)	75 (96.2)		11 (5.6)	187 (94.4)	
Total	31 (4.5)	655 (95.5)		31 (5.7)	516 (94.3)	
Hemangiosarcoma						
Height (inches)						
20 - 21	7 (3.4)	199 (96.6)	0.48	0 (0.0)	5 (100)	0.24
22 - 23	25 (5.9)	398 (94.1)		14 (6.2)	212 (93.8)	
24 - 25	3 (6.1)	46 (93.9)		31 (10.8)	255 (89.2)	
26+	0 (0.0)	10 (100)		2 (6.3)	30 (93.8)	
Total	35 (5.1)	653 (94.9)		47 (8.6)	502 (91.4)	
Weight (pounds)						
48 - 61	16 (4.6)	333 (95.4)	0.62	1 (2.6)	37 (97.4)	0.12
62 - 69	14 (5.1)	260 (94.9)		5 (4.5)	107 (95.5)	
70 - 76	9 (7.8)	107 (92.2)		23 (10.1)	204 (89.9)	
77+	3 (5.1)	56 (94.9)		26 (10.5)	222 (89.5)	
Total	42 (5.2)	765 (94.8)		55 (8.8)	570 (91.2)	
Weight/Height Index						
2.25 - 2.76	9 (3.2)	276 (96.8)	0.19	3 (5.4)	53 (94.6)	0.06
2.77 - 2.99	15 (7.5)	186 (92.5)		3 (2.8)	103 (97.2)	
3.00 - 3.25	6 (4.9)	116 (95.1)		21 (11.2)	166 (88.8)	
3.26+	5 (6.4)	73 (93.6)		20 (10.1)	178 (89.9)	
Total	35 (5.1)	651 (94.9)		47 (8.6)	500 (91.4)	

Table 29. Flea Allergies and Health Disorders

	Disorder		P Value
	Yes Number (%)	No Number (%)	
Lymphosarcoma			
Flea Allergies			
Yes	12 (6.6)	170 (93.4)	0.26
No	59 (4.7)	1203 (95.3)	
Total	71 (4.9)	1373 (95.1)	
Hemangiosarcoma			
Flea Allergies			
Yes	11 (6.0)	171 (94.0)	0.62
No	89 (7.1)	1173 (93.0)	
Total	100 (6.9)	1344 (93.1)	
Hypothyroidism			
Flea Allergies			
Yes	52 (28.6)	130 (71.4)	0.05
No	278 (22.0)	984 (78.0)	
Total	330 (22.9)	1114 (77.1)	
Hot Spots			
Flea Allergies			
Yes	121 (66.5)	61 (33.5)	< .0001
No	304 (24.1)	958 (75.9)	
Total	425 (29.4)	1019 (75.6)	

Table 30. Region and Health Disorders

Region of the US	Disorder		P Value
Lymphosarcoma			
	Yes Number (%)	No Number (%)	
New England	6 (5.3)	108 (94.7)	
Mid-Atlantic	9 (3.6)	240 (96.4)	
South Atlantic	7 (4.4)	151 (95.6)	
North Central	15 (4.5)	317 (95.5)	
South Central	5 (4.0)	119 (96.0)	
Mountain ^a	7 (9.6)	66 (90.4)	
Pacific	9 (4.5)	192 (95.5)	0.56
Total	58 (4.6)	1193 (95.4)	
Hemangiosarcoma			
	Yes Number (%)	No Number (%)	
New England	10 (8.8)	104 (91.2)	
Mid-Atlantic	14 (5.6)	235 (94.4)	
South Atlantic	15 (9.5)	143 (90.5)	
North Central	19 (5.7)	313 (94.3)	
South Central	8 (6.5)	116 (93.6)	
Mountain ^b	9 (12.3)	64 (87.7)	
Pacific	16 (9.0)	185 (92.0)	0.34
Total	91 (7.3)	1160 (92.7)	
Flea Allergies			
	Yes Number (%)	No Number (%)	
New England	13 (11.4)	101 (88.6)	
Mid-Atlantic	29 (11.7)	220 (88.4)	
South Atlantic	26 (16.5)	132 (83.5)	
North Central	32 (9.6)	300 (90.4)	
South Central	21 (16.9)	103 (83.1)	
Mountain	4 (5.5)	69 (94.5)	
Pacific	33 (16.4)	168 (83.6)	0.04
Total	158 (12.6)	1093 (87.4)	

Table 30. Region and Health Disorders

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Region of the US	Disorder		P Value
Hot Spots			
	Yes	No	
	Number (%)	Number (%)	
New England	32 (28.1)	82 (71.9)	
Mid-Atlantic	84 (33.7)	165 (66.3)	
South Atlantic	52 (32.9)	106 (67.1)	
North Central	92 (27.7)	240 (72.3)	
South Central	37 (29.8)	87 (70.2)	
Mountain	13 (17.8)	60 (82.2)	
Pacific	57 (28.4)	144 (71.6)	0.20
Total	367 (29.3)	884 (70.7)	
Hypothyroidism			
	Yes	No	
	Number (%)	Number (%)	
New England	18 (15.8)	96 (84.2)	
Mid-Atlantic	41 (16.5)	208 (83.5)	
South Atlantic	36 (22.8)	122 (77.2)	
North Central	83 (25.0)	249 (75.0)	
South Central	28 (22.6)	96 (77.4)	
Mountain	23 (31.5)	50 (68.5)	
Pacific	64 (31.8)	137 (68.2)	0.001
Total	293 (23.4)	958 (76.6)	

^a Mountain region vs. all other regions for lymphosarcoma, p=0.04

^b Mountain region vs. all other regions for hemangiosarcoma; p=0.09

Table 31. Daily Diet and Health Disorders

Type of Diet Fed Daily	Disorder		P Value
	Hot Spots		
	Yes Number (%)	No Number (%)	
Dry			
Yes	402 (29.3)	971 (70.7)	0.64
No	22 (31.9)	47 (68.1)	
Canned			
Yes	68 (29.8)	160 (70.2)	0.88
No	356 (29.3)	858 (70.7)	
Table/Home Prepared			
Yes	76 (39.6)	116 (60.4)	0.001
No	348 (27.8)	902 (72.2)	
Hypothyroidism			
Dry			
Yes	305 (22.2)	1070 (77.8)	0.007 ^a
No	25 (36.2)	44 (63.8)	
Canned			
Yes	59 (25.9)	169 (74.1)	0.24
No	271 (22.3)	945 (77.7)	
Table/Home Prepared			
Yes	45 (23.4)	147 (76.6)	0.84
No	285 (33.8)	967 (77.2)	
Hemangiosarcoma			
Dry			
Yes	93 (6.8)	1280 (93.2)	0.88
No	5 (7.3)	64 (92.7)	
Canned			
Yes	20 (8.8)	208 (91.2)	0.20
No	78 (6.4)	1136 (93.6)	
Table/Home Prepared			
Yes	18 (9.4)	174 (90.6)	0.13
No	80 (6.4)	1170 (93.6)	
Lymphosarcoma			
Dry			
Yes	70 (5.1)	1303 (94.9)	0.17
No	1 (1.5)	68 (98.5)	
Canned			
Yes	16 (7.0)	212 (93.0)	0.11
No	55 (4.5)	1159 (95.5)	
Table/Home Prepared			
Yes	11 (5.7)	181 (94.3)	0.58
No	60 (4.8)	1190 (95.2)	

Table 32. Chemical Exposures and Health Disorders

Chemical Exposure	Disorder		P Value
	Lymphosarcoma		
	Yes Number (%)	No Number (%)	
Lawn Chemicals			
Yes	37 (5.6)	626 (64.4)	0.29
No	34 (4.4)	745 (95.6)	
Flea/tick Dips			
Yes	29 (5.5)	497 (94.5)	0.43
No	42 (4.6)	874 (95.4)	
Flea/tick Drops			
Yes	18 (3.4)	515 (96.6)	0.04 (↓) ^a
No	53 (5.8)	856 (94.2)	
Flea/tick Shampoo			
Yes	36 (4.0)	854 (96.0)	0.05 (↓) ^a
No	35 (6.3)	517 (93.7)	
Flea/tick Sprays			
Yes	25 (3.7)	649 (96.3)	0.05 (↓) ^a
No	46 (6.0)	722 (94.0)	
Hemangiosarcoma			
Lawn Chemicals			
Yes	51 (7.7)	612 (92.3)	0.21
No	47 (6.0)	732 (94.0)	
Flea/tick Dips			
Yes	38 (7.2)	488 (92.8)	0.62
No	60 (6.5)	856 (93.5)	
Flea/tick Drops			
Yes	27 (5.1)	506 (94.9)	0.05 (↓) ^a
No	71 (7.8)	838 (92.2)	
Flea/tick Shampoo			
Yes	62 (7.0)	828 (93.0)	0.74
No	36 (6.5)	516 (93.5)	
Flea/tick Sprays			
Yes	52 (7.7)	622 (92.3)	0.19
No	46 (6.0)	722 (94.0)	

^a Decreased risk of health disorder with chemical exposure

Table 32. Chemical Exposures and Health Disorders

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Chemical Exposure	Disorder		P Value
	Hypothyroidism		
	Yes Number (%)	No Number (%)	
Lawn Chemicals			
Yes	164 (24.7)	500 (75.3)	0.12
No	166 (21.3)	614 (78.7)	
Flea/tick Dips			
Yes	118 (22.4)	408 (77.6)	0.77
No	212 (23.1)	706 (76.9)	
Flea/tick Drops			
Yes	134 (25.1)	399 (74.9)	0.11
No	196 (21.5)	715 (78.5)	
Flea/tick Shampoo			
Yes	204 (22.9)	687 (77.1)	0.96
No	126 (22.8)	427 (77.2)	
Flea/tick Sprays			
Yes	161 (23.9)	514 (76.2)	0.40
No	169 (22.0)	600 (78.0)	
Hot Spots			
Lawn Chemicals			
Yes	214 (32.3)	449 (67.7)	0.03 (↑) ^b
No	210 (27.0)	569 (73.0)	
Flea/tick Dips			
Yes	166 (31.6)	360 (68.4)	0.17
No	258 (28.2)	658 (71.8)	
Flea/tick Drops			
Yes	176 (33.0)	357 (67.0)	0.02 (↑) ^b
No	248 (27.3)	661 (72.7)	
Flea/tick Shampoo			
Yes	284 (31.9)	140 (25.4)	0.01 (↑) ^b
No	140 (25.4)	412 (74.6)	
Flea/tick Sprays			
Yes	219 (32.5)	455 (67.5)	0.02 (↑) ^b
No	205 (26.7)	563 (73.3)	

^b (↑) Increased risk of health disorder with chemical exposure

Table 33. Yearly Vaccination and Health Disorders

Yearly Vaccination	Disorder		P Value
	Hot Spots		
	Yes Number (%)	No Number (%)	
Rabies			
Yes	137 (28.2)	349 (71.8)	0.46
No	288 (30.1)	670 (69.9)	
Distemper			
Yes	397 (30.4)	909 (69.6)	0.01
No	28 (20.3)	110 (79.7)	
Parvovirus			
Yes	395 (30.6)	898 (69.5)	0.01
No	30 (19.9)	121 (80.1)	
Total	425 (29.4)	1019 (70.6)	
Hypothyroidism			
Rabies			
Yes	114 (23.5)	372 (76.5)	0.70
No	216 (22.6)	742 (77.5)	
Distemper			
Yes	297 (22.7)	1009 (77.3)	0.76
No	33 (23.9)	105 (76.1)	
Parvovirus			
Yes	293 (22.7)	1000 (77.3)	0.61
No	37 (24.5)	114 (75.5)	
Total	330 (22.9)	1114 (77.1)	
Hemangiosarcoma			
Rabies			
Yes	29 (6.0)	457 (94.0)	0.31
No	71 (7.4)	887 (92.6)	
Total	425 (29.4)	1019 (70.6)	
Distemper			
Yes	93 (7.1)	1213 (92.9)	0.37
No	7 (5.1)	131 (94.9)	
Total	425 (29.4)	1019 (70.6)	
Parvovirus			
Yes	91 (7.0)	1202 (93.0)	0.62
No	9 (6.0)	142 (94.0)	
Total	100 (6.9)	1344 (93.1)	

Table 33. Yearly Vaccination and Health Disorders**Page 2**

Yearly Vaccination	Disorder		P Value
	Lymphosarcoma		
	Yes Number (%)	No Number (%)	
Rabies			
Yes	26 (5.4)	460 (94.7)	0.59
No	45 (4.7)	913 (95.3)	
Distemper			
Yes	67 (5.1)	1239 (94.9)	0.25
No	4 (2.9)	134 (97.1)	
Parvovirus			
Yes	66 (5.1)	1227 (94.9)	0.33
No	5 (3.3)	146 (96.7)	
Total	71 (4.9)	1373 (95.1)	

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Table 34a. Veterinary Confirmed Cause of Death by Age

Cause of Death	Age at Death (years) ^a			
	3 – 7.9	8 – 12.9	13+	Total
	Number (%)	Number (%)	Number (%)	Number (%)
Neoplasms	51 (64.6)	163 (70.0)	44 (40.7)	258 (61.4)
Cardiovascular	2 (2.5)	13 (5.6)	5 (4.6)	20 (4.8)
Allergies	0 (0.0)	0 (0.0)	1 (0.9)	1 (0.2)
Endocrine	1 (1.3)	1 (0.4)	1 (0.9)	3 (0.7)
Gastrointestinal/Pancreatitis	2 (2.5)	13 (5.6)	2 (1.9)	17 (4.1)
Hematologic	0 (0.0)	0 (0.0)	1 (0.9)	1 (0.2)
Urinary	1 (1.3)	5 (2.2)	7 (6.5)	13 (3.1)
Neurological	2 (2.5)	9 (3.9)	18 (16.7)	29 (6.9)
Musculoskeletal	0 (0.0)	3 (1.3)	6 (5.6)	9 (2.1)
Trauma/Accidents	2 (2.5)	1 (0.4)	1 (0.9)	4 (1.0)
Infections	1 (1.3)	0 (0.0)	3 (2.8)	4 (1.0)
Liver	1 (1.3)	4 (1.7)	0 (0.0)	5 (1.2)
Autoimmune	4 (5.1)	2 (0.9)	0 (0.0)	6 (1.4)
Other Causes	3 (3.8)	5 (2.2)	2 (1.9)	10 (2.4)
Unknown Cause	9 (11.4)	14 (6.0)	17 (15.7)	40 (9.5)
Total	79 (100)	233 (100)	108 (100)	420 ^a (100)

^a Age at death was missing for 10 individuals that died of veterinary confirmed cause

Table 34b. Veterinary Confirmed Cause of Death by Age for Dogs

Cause of Death	Age at Death (years)			
	3 – 7.9	8 – 12.9	13+	Total
	Number (%)	Number (%)	Number (%)	Number (%)
Neoplasms	27 (73.0)	86 (71.7)	19 (44.2)	132 (66.0)
Cardiovascular	0 (0.0)	6 (5.0)	2 (4.7)	8 (4.0)
Allergies	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Endocrine	0 (0.0)	1 (0.8)	0 (0.0)	1 (0.5)
Gastrointestinal/Pancreatitis	0 (0.0)	7 (5.9)	1 (2.3)	8 (4.0)
Hematologic	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Urinary	0 (0.0)	3 (2.5)	2 (4.7)	5 (2.5)
Neurological	1 (2.7)	4 (3.3)	6 (14.0)	11 (5.5)
Musculoskeletal	0 (0.0)	2 (1.7)	2 (4.7)	4 (2.0)
Trauma/Accidents	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Infections	0 (0.0)	0 (0.0)	3 (7.0)	3 (1.5)
Liver	0 (0.0)	3 (2.5)	0 (0.0)	3 (1.5)
Autoimmune	3 (8.1)	1 (0.8)	0 (0.0)	4 (2.0)
Other Causes	2 (5.4)	0 (0.0)	1 (2.3)	3 (1.5)
Unknown Cause	4 (10.8)	7 (5.8)	7 (16.3)	18 (9.0)
Total	37 (100)	120 (100)	43 (100)	200 (100)

Table 34c. Veterinary Confirmed Cause of Death by Age for Bitches

Cause of Death	Age at Death (years)			
	3 – 7.9	8 – 12.9	13+	Total
	Number (%)	Number (%)	Number (%)	Number (%)
Neoplasms	24 (58.5)	76 (67.9)	25 (38.5)	125 (57.3)
Cardiovascular	2 (4.9)	7 (6.3)	3 (4.6)	12 (5.5)
Allergies	0 (0.0)	0 (0.0)	1 (1.5)	1 (0.5)
Endocrine	1 (2.4)	0 (0.0)	1 (1.5)	2 (1.0)
Gastrointestinal/Pancreatitis	2 (4.9)	6 (5.4)	1 (1.5)	9 (4.1)
Hematologic	0 (0.0)	0 (0.0)	1 (1.5)	1 (0.5)
Urinary	1 (2.5)	2 (1.8)	5 (7.7)	8 (3.7)
Neurological	1 (2.5)	5 (4.5)	12 (18.5)	18 (8.3)
Musculoskeletal	0 (0.0)	1 (0.9)	4 (6.2)	5 (2.3)
Trauma/Accidents	2 (4.9)	1 (0.9)	1 (1.5)	4 (1.8)
Infections	1 (2.4)	0 (0.0)	0 (0.0)	1 (0.5)
Liver	1 (2.4)	1 (0.9)	0 (0.0)	2 (1.0)
Autoimmune	1 (2.4)	1 (0.9)	0 (0.0)	2 (1.0)
Other Causes	1 (2.4)	5 (4.5)	1 (1.5)	7 (3.2)
Unknown Cause	4 (9.8)	7 (6.3)	10 (15.4)	21 (9.6)
Total	41 (100)	112 (100)	65 (100)	218 (100)

Table 35a. Age & Gender Specific Death ^a Rates

Category	0 –2.9 years		3 – 7.9 years ^b		8 – 12.9 years ^b		13+ years	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Individuals	6	1.4	86	13.2	291	95.8	165	435.9 ^c
Bitches	1	0.4	46	12.6	146	83.5	101	449.0
Dogs	5	2.7	39	13.6	144	111.8	64	416.7

^a Death rates per 1,000 dog years

^b Gender missing for 1 individual

^c This indicates that 43.5% of individuals in this age group will die each year, assuming a 10 year lifespan

Table 35b. Cause & Gender^a Specific Death Rates^b

Cause of Death	All Individuals		Bitches		Dogs	
	Number (%) ^c	Rate	Number (%) ^c	Rate	Number (%) ^c	Rate
Neoplasms	264 (61.4)	18.7	128 (57.7)	16.1	135 (65.5)	22.0
Cardiovascular	21 (4.9)	1.5	12 (5.4)	1.5	9 (4.4)	1.5
Allergies	1 (0.2)	0.1	1 (0.5)	0.1	0 (0.0)	0.0
Endocrine	3 (0.7)	0.2	2 (0.9)	0.3	1 (0.5)	0.2
Gastrointestinal/ Pancreatitis	17 (4.0)	1.2	9 (4.1)	1.1	8 (3.9)	1.3
Hematologic	1 (0.2)	0.1	1 (0.5)	0.1	0 (0.0)	0.0
Urinary	14 (3.3)	1.0	9 (4.1)	1.1	5 (2.4)	0.8
Neurological	30 (7.0)	2.1	18 (8.1)	2.3	12 (5.8)	2.0
Musculoskeletal	9 (2.1)	0.6	5 (2.3)	0.6	4 (1.9)	0.7
Trauma/Accidents	4 (0.9)	0.3	4 (1.8)	0.5	0 (0.0)	0.0
Infections	4 (0.9)	0.3	1 (0.5)	0.1	3 (1.5)	0.5
Liver	5 (1.2)	0.4	2 (0.9)	0.3	3 (1.5)	0.5
Autoimmune	6 (1.4)	0.4	2 (0.9)	0.3	4 (1.9)	0.7
Other Causes	11 (2.6)	0.8	7 (3.2)	0.9	4 (1.9)	0.7
Unknown Cause	40 (9.3)	2.8	21 (9.5)	2.6	18 (8.7)	2.9
Cause of Death Not Confirmed by Veterinarian	81	5.7	53	6.7	28	4.6
Total	511 ^d	36.2	275	34.5	234	38.2

^a Gender missing for two individuals^b Death rates per 1,000 dog years^c Percent of deaths confirmed by a veterinarian^d Cause of death information missing for 45 individuals

Table 35c. Age & Cause Specific Death Rates^a for Three Leading Veterinary Confirmed Causes of Death (Excludes Unknown Causes)

Cause of Death	0 – 2.9 years		3 – 7.9 years		8 – 12.9 years		13+ years	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All Individuals								
Neoplasms	2	0.5	51	7.8	163	53.6	44	116.2 ^b
Cardiovascular	1	0.2	2	0.3	13	4.3	5	13.2
Neurological	1	0.2	2	0.3	9	3.0	18	47.5
Bitches								
Neoplasms	1	0.4	24	6.6	76	43.4	25	111.1
Cardiovascular	0	0.0	2	0.5	7	4.0	3	13.3
Neurological	0	0.0	1	0.3	5	2.9	12	53.3
Dogs								
Neoplasms	1	0.5	27	9.4	86	66.7	19	123.7
Cardiovascular	1	0.5	0	0.0	6	4.7	2	13.0
Neurological	1	0.5	1	0.3	4	3.1	6	39.1

^a Death rates per 1,000 dog years

^b This indicates that 11.6% of individuals in this age group will die due to a neoplasm each year, assuming a 10 year life span

Table 36. Years of Potential Life Lost for Veterinary Confirmed Cause of Death

Cause of Death	Number	Average Age at Death (\pm SD) ^a	Years of Potential Life Lost
Hemangiosarcoma	69	10.3 (\pm 2.3)	20.7
Lymphosarcoma	43	8.5 (\pm 2.9)	101.1
Osteosarcoma	16	9.7 (\pm 3.1)	14.4
Liver Cancer	15	10.5 (\pm 2.1)	1.5
Gastric Dilatation Volvulus	11	10.5 (\pm 1.8)	1.1
Brain Cancer	9	10.2 (\pm 3.5)	3.6
Lung Cancer	8	10.2 (\pm 1.8)	3.2
Neurological/Epilepsy	7	8.9 (\pm 3.3)	11.2
Mast Cell Tumor	7	10.5 (\pm 2.1)	0.7
Breast Cancer	6	10.3 (\pm 3.2)	1.8
Autoimmune Disorder	6	6.3 (\pm 3.5)	25.8
Leukemia	5	8.5 (\pm 4.3)	10.5
Heart Tumors	5	10.4 (\pm 1.4)	1.0
Trauma	4	8.9 (\pm 4.4)	6.8
All Other Causes	225	11.4 (\pm 3.2)	0.0
Total	430	10.6 (\pm 3.1)	192.6

^aSD = Standard Deviation

Table 37. Lifetime Risk of Veterinary Confirmed Health Disorders Based on 427 Golden Retrievers That Expired

Health Disorders	Number of Dogs Affected		Lifetime Risk ^a
	Number	Percent	
Neoplasms			
Total	292	68.3	1 in 2
Hemangiosarcoma	80	18.7	1 in 5
Lymphosarcoma	49	11.5	1 in 8
Mast Cell	35	8.2	1 in 13
Lipoma	32	7.5	1 in 13
Osteosarcoma	22	5.2	1 in 20
Breast	21	4.9	1 in 20
Melanoma	12	2.8	1 in 33
Testicular	4	0.9	1 in 100
Squamous Cell	3	0.7	1 in 100
Other	98	23.0	1 in 4
Cardiovascular			
Total	65	15.2	1 in 7
Heart Murmur	19	4.4	1 in 25
Heart Failure-Unknown Cause	17	4.0	1 in 25
Heart Arrhythmia	14	3.3	1 in 33
Cardiomyopathy	9	2.1	1 in 50
Valve Dysfunction	4	0.9	1 in 100
Heartworm Infection	3	0.7	1 in 100
Subaortic Stenosis	3	0.7	1 in 100
Pulmonic Stenosis	--	--	--
Other	5	1.2	1 in 100
Allergies			
Total	105	24.5	1 in 4
Allergic dermatitis due to:			
Fleas	66	15.5	1 in 6
Inhaled Allergens	26	6.1	1 in 17
Food	18	4.2	1 in 25
Contact	11	2.6	1 in 33
Other	7	1.6	1 in 50
Anesthesia Allergy	4	0.9	1 in 100
Atopic Rhinitis	--	--	--
Drug Allergy	--	--	--
Other Allergy	5	1.1	1 in 100

Table 37. Lifetime Risk of Veterinary Confirmed Health Disorders Based on 427 Golden Retrievers That Expired

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Health Disorder	Number of Dogs Affected		Lifetime Risk ^a
	Number	Percent	
Endocrine			
Total	109	25.5	1 in 4
Hypothyroidism	96	22.5	1 in 4
Cushings Syndrome (Hyperadrenal)	7	1.6	1 in 50
Hyperthyroidism	6	1.4	1 in 100
Addison's Disease (Hypoadrenal)	3	0.7	1 in 100
Diabetes Mellitus	--	--	--
Pancreatic Insufficiency	--	--	--
Other	4	0.9	1 in 100
Gastrointestinal			
Total	55	12.8	1 in 8
Excessive Diarrhea	15	3.5	1 in 25
Bloat with torsion	14	3.3	1 in 33
Excessive Vomiting	14	3.3	1 in 33
Gastritis	12	2.8	1 in 33
Bloat without torsion	10	2.3	1 in 50
Esophageal Disorder	3	0.7	1 in 100
Excessive Flatulence	3	0.7	1 in 100
Malabsorbtion	2	0.5	1 in 100
Colitis	2	0.5	1 in 100
Foreign Body	--	--	--
Other	--	--	--
Hematologic			
Total	16	3.7	1 in 25
Von Willebrand's Disease	7	1.6	1 in 50
Thrombocytopenia	4	0.9	1 in 100
Chronic Anemia	3	0.7	1 in 100
Autoimmune Hemolytic Anemia	2	0.5	1 in 100
Bone Marrow Failure	1	0.2	1 in 100
Hemophilia	--	--	--
Other	--	--	--
Urinary Tract/ Renal			
Total	54	12.6	1 in 8
Bladder Infections	28	6.6	1 in 14
Kidney Failure	19	4.4	1 in 25
Kidney Disease	14	3.3	1 in 33
Bladder Stones	8	1.9	1 in 50
Other	--	--	--

Table 37. Lifetime Risk of Veterinary Confirmed Health Disorders Based on 427 Golden Retrievers That Expired

Page 3

Health Disorders	Number of Dogs Affected		Lifetime Risk ^a
	Number	Percent	
Neurological			
Total	63	14.7	1 in 7
Seizures (Unknown origin)	32	7.5	1 in 13
Seizures (Known origin)	18	4.2	1 in 25
Nerve degeneration	8	1.9	1 in 50
Dementia	4	0.9	1 in 100
Tremors (Generalized)	4	0.9	1 in 100
Wobbler Syndrome	2	0.5	1 in 100
Other	--	--	--
Musculoskeletal			
Total	154	36.1	1 in 3
Hip Dysplasia	71	16.6	1 in 6
Arthritis (not autoimmune)	53	12.4	1 in 8
Spondylosis	14	3.3	1 in 33
Anterior Cruciate Ligament Tear	12	2.8	1 in 33
Eosinophilic Panosteitis	11	2.6	1 in 33
Osteochondritis Dissecans	10	2.3	1 in 50
Degenerative Disk Disease	10	2.3	1 in 50
Arthritis (autoimmune)	9	2.1	1 in 33
Elbow Dysplasia	3	0.7	1 in 100
Patella Luxation	1	0.2	1 in 100
Other	13	3.0	1 in 33
Eyes			
Total	83	19.4	1 in 5
Cataracts	49	11.5	1 in 8
Distichiasis	16	3.7	1 in 25
Injury	4	0.9	1 in 100
Progressive Retinal Atrophy	3	0.7	1 in 100
Glaucoma	3	0.7	1 in 100
Entropion	2	0.5	1 in 100
Ectropion	1	0.2	1 in 100
Prolapsed 3rd Eyelid	--	--	--
Other	25	5.9	1 in 17
Ears			
Total	96	22.4	1 in 4
Chronic/Intermittent Infection	76	17.8	1 in 6
Hearing Problem	21	4.9	1 in 20
Other	5	2.5	1 in 33

Table 37. Lifetime Risk of Veterinary Confirmed Health Disorders Based on 427 Golden Retrievers That Expired

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Health Disorders	Number of Dogs Affected		Lifetime Risk ^a
	Number	Percent	
Reproductive System			
Total	65	15.2	1 in 7
Bitches			
Pyometra	15	3.5	1 in 25
Difficult Whelping (Dystocia)	10	2.3	1 in 50
Mastitis	7	1.6	1 in 50
Chronic False Pregnancy	5	1.2	1 in 100
Malformed Puppies	3	0.7	1 in 100
Failure to Carry to Term	2	0.5	1 in 100
Infertility	1	0.2	1 in 100
Irregular Heat Cycles	1	0.2	1 in 100
Insufficient Milk	1	0.2	1 in 100
Poor Mothering Instinct	1	0.2	1 in 100
Dogs			
Enlarged Prostate	12	2.8	1 in 33
Infertility	6	1.4	1 in 100
Testicular Atrophy	3	0.7	1 in 100
Unilateral Cryptorchidism	2	0.5	1 in 100
Abnormal Semen	2	0.5	1 in 100
Bilateral Cryptorchidism	1	0.2	1 in 100
Lack of Libido	1	0.2	1 in 100
Other	2	0.5	1 in 100
Skin/Coat			
Total	183	42.8	1 in 2
Hot Spots	137	32.1	1 in 3
Sebaceous Cysts	64	15.0	1 in 7
Dull and Dry	18	4.2	1 in 25
Seborrhea	10	2.3	1 in 50
Pigment Abnormalities	5	1.2	1 in 100
Coat Color Change	1	0.2	1 in 100
Sebaceous Adenitis	1	0.2	1 in 100
Other	11	2.6	1 in 33

Table 37. Lifetime Risk of Veterinary Confirmed Health Disorders Based on 427 Golden Retrievers That Expired

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Health Disorders	Number of Dogs Affected		Lifetime Risk ^a
	Number	Percent	
Trauma/Accidents			
Total	73	17.1	1 in 6
Laceration Requiring Stitches	32	7.5	1 in 13
Lameness Requiring Treatment	21	4.9	1 in 20
Fracture/Broken Bone	17	4.0	1 in 25
Other	11	2.6	1 in 33
Infections/Infestations			
Infections/Infestations	213	49.0	1 in 2
Bacterial			
External Ear (Otitis Externa)	47	11.0	1 in 9
Cystitis	21	4.9	1 in 20
Anal Sacculitis	14	3.3	1 in 33
Lyme Disease	12	2.8	1 in 33
Pneumonia	7	1.6	1 in 50
Tonsillitis	5	1.2	1 in 100
Prostatitis	3	0.7	1 in 100
Interdigital Infection	3	0.7	1 in 100
Septicemia	2	0.5	1 in 100
Other	12	2.8	1 in 33
Viral			
Tracheobronchitis	41	9.6	1 in 10
Parvovirus	7	1.6	1 in 50
Corona Virus	3	0.7	1 in 100
Distemper	1	0.2	1 in 100
Other	1	0.2	1 in 100
Fungal			
Ringworm	6	1.4	1 in 100
Other	3	0.7	1 in 100
Oral			
Abnormal Dentition	7	1.6	1 in 50
Missing Teeth	5	1.2	1 in 100
Malocclusion	4	0.9	1 in 100
Other	1	0.2	1 in 100

Table 37. Lifetime Risk of Veterinary Confirmed Health Disorders Based on 427 Golden Retrievers That Expired**Page 6**

Health Disorders	Number of Dogs Affected		Lifetime Risk ^a
	Number	Percent	
Parasitic			
Roundworms	43	10.1	1 in 10
Whipworms	40	9.4	1 in 11
Giardia	36	8.4	1 in 13
Coccidia	29	6.8	1 in 14
Hookworms	27	6.3	1 in 17
Demodectic Mange	14	3.3	1 in 33
Other	17	3.9	1 in 25
Behavior Problems			
Total	5	1.1	1 in 100
Dominance Aggression	2	0.5	1 in 100
Fear Aggression	1	0.2	1 in 100
Inappropriate Urination	1	0.2	1 in 100
Other	2	0.5	1 in 100
Congenital (Birth) Defects			
Total	5	1.1	1 in 100
Umbilical Hernia	2	0.5	1 in 100
Cleft lip or Palate	--	--	--
Other	4	0.9	1 in 100

[†]Rounded to next integer

Table 38. Twenty Most Common Veterinary Confirmed Health Disorders and Their Outcome

Disorder	Number Diagnosed with Disorder	Number (%) Died of Disorder	Mean Age at Death (years)
Hotspots	425	0 (0.0)	
Hypothyroidism	330	0 (0.0)	
Chronic/repeated infection	270	3 (1.1)	14.6
Hip dysplasia	253	0 (0.0)	
Sebaceous cysts	197	0 (0.0)	
Allergies (flea)	182	0 (0.0)	
Cataracts	162	0 (0.0)	
Arthritis (not autoimmune)	151	0 (0.0)	
Roundworms	139	0 (0.0)	
External ear infection	138	0 (0.0)	
Tracheobronchitis	118	0 (0.0)	
Whipworms	116	0 (0.0)	
Allergies (inhaled)	107	1 (0.9)	14.1
Lipoma	105	0 (0.0)	
Hemangiosarcoma	100	70 (70.0)	10.4
Giardia	98	0 (0.0)	
Bladder infection	96	0 (0.0)	
Coccidia	93	0 (0.0)	
Laceration requiring stitches	90	0 (0.0)	
Lameness requiring treatment	77	0 (0.0)	

Table 39. Twenty-Six Most Common Causes of Death^a

Cause of Death	Cause of Death Confirmed by a Veterinarian					
	Yes			Yes + Unconfirmed Deaths		
	Number	Percent	Mean Age at Death (\pm SD) ^b	Number	Percent	Mean Age at Death (\pm SD)
Hemangiosarcoma	69	18.5	10.3 (\pm 2.3)	74	17.1	10.3 (\pm 2.3)
Cancer (unspecified type)	66	17.7	10.9 (\pm 2.9)	75	17.3	11.0 (\pm 2.8)
Lymphosarcoma	43	11.5	8.5 (\pm 2.9)	49	11.3	8.8 (\pm 3.0)
Old age, dementia	23	6.2	14.2 (\pm 1.5)	38	8.8	14.1 (\pm 1.6)
Heart failure	22	5.9	11.0 (\pm 3.2)	25	5.8	11.2 (\pm 3.0)
Osteosarcoma	16	4.3	9.7 (\pm 3.1)	18	4.2	10.0 (\pm 3.0)
Kidney failure	15	4.0	12.3 (\pm 3.1)	18	4.2	12.2 (\pm 3.0)
Liver cancer	15	4.0	10.5 (\pm 2.1)	17	3.9	10.3 (\pm 2.2)
Gastrointestinal adenocarcinoma	13	3.5	12.0 (\pm 2.5)	13	3.0	12.0 (\pm 2.5)
Gastric Dilatation-Volvulus	11	2.9	10.5 (\pm 1.8)	13	3.0	10.9 (\pm 2.6)
Brain cancer	9	2.4	10.2 (\pm 3.5)	9	2.1	10.2 (\pm 3.5)
Musculoskeletal/arthritis	8	2.1	13.8 (\pm 1.0)	12	2.8	13.2 (\pm 2.8)
Lung cancer	8	2.1	10.2 (\pm 1.8)	9	2.1	10.3 (\pm 1.7)
Neurological/epilepsy	7	1.9	8.9 (\pm 3.3)	9	2.1	9.8 (\pm 3.6)
Mast cell tumor	7	1.9	10.5 (\pm 2.1)	8	1.8	11.0 (\pm 2.4)
Breast cancer	6	1.6	10.3 (\pm 3.2)	7	1.6	11.3 (\pm 3.9)
Autoimmune disorder	6	1.6	6.3 (\pm 3.5)	6	1.4	6.3 (\pm 3.5)
Liver failure	5	1.3	10.6 (\pm 3.7)	7	1.6	11.2 (\pm 3.5)
Leukemia	5	1.3	8.5 (\pm 4.3)	5	1.2	8.5 (\pm 4.3)
Heart tumors	5	1.3	10.4 (\pm 1.4)	5	1.2	10.4 (\pm 1.4)
Trauma	4	1.1	8.9 (\pm 4.4)	5	1.2	10.5 (\pm 5.2)
Infections	4	1.1	12.8 (\pm 3.8)	4	0.9	12.8 (\pm 3.8)
Endocrine disorder	4	1.1	10.6 (\pm 3.4)	4	0.9	10.6 (\pm 3.4)
Cancer of the spleen	3	0.8	12.0 (\pm 3.0)	3	0.9	11.8 (\pm 2.5)
Total	374	100	10.6 (\pm 3.0)	434	100	10.8 (\pm 3.1)

^a Does not include 'unknown cause' ^b SD=Standard Deviation

Table 40. Longevity by Source of Individual

Source	Bitches		Dogs	
	Mean Age at Death (years) \pm SD ^a	Number (%)	Mean Age at Death (years) \pm SD	Number (%)
Breeder – Self	10.5 \pm 3.3	63 (21.4)	10.7 \pm 2.7	54 (21.5)
Breeder – Kennel	10.9 \pm 2.9	81 (27.6)	10.4 \pm 3.4	89 (35.5)
Breeder – Home	11.9 \pm 2.9	139 (47.3)	10.9 \pm 3.0	90 (35.9)
Shelter or Rescue	14.1 \pm 3.0	5 (1.7)	10.9 \pm 3.7	6 (1.4)
Pet Store	8.3 \pm 1.2	4 (1.4)	9.0 \pm 4.1	3 (1.2)
Adopted from Private Party	10.5 \pm 3.2	2 (0.7)	11.9 \pm 3.0	6 (2.4)
Service Dog	--	--	10.0 \pm 4.5	3 (1.2)
Total	11.3 \pm 3.1	294 (100)	10.7 \pm 3.1	251 (100)

^a SD=Standard Deviation

Table 41. Longevity by Height, Weight, Weight/Height Index, and Body Condition

Measurement	Bitches		Dogs	
	Mean Age at Death (years) \pm SD ^a	Number of Individuals	Mean Age at Death (years) \pm SD	Number of Individuals
Height (inches)				
20 - 21	11.5 \pm 3.4	59	12.9 \pm 1.9	4
22 - 23	11.5 \pm 2.8	166	11.2 \pm 3.0	76
24 - 25	11.1 \pm 3.1	14	10.4 \pm 3.0	119
26+	10.4 \pm 2.9	6	10.7 \pm 3.6	14
Weight (pounds)				
48 - 61	11.8 \pm 3.1	118	11.2 \pm 3.8	14
62 - 69	11.0 \pm 3.2	99	10.5 \pm 3.1	41
70 - 76	10.7 \pm 2.7	48	10.6 \pm 3.3	90
77+	11.4 \pm 2.6	26	10.8 \pm 2.7	104
Weight/Height Index				
2.25 - 2.76	12.3 \pm 2.9	95	11.8 \pm 2.9	19
2.77 - 2.99	11.3 \pm 2.9	77	9.9 \pm 3.3	44
3.00 - 3.25	10.2 \pm 3.1	40	11.1 \pm 3.1	68
3.26+	11.3 \pm 2.3	32	10.7 \pm 2.7	82
Puppy Body Condition				
Underweight	11.4 \pm 2.9	19	11.7 \pm 3.1	18
Average	11.3 \pm 3.0	258	10.6 \pm 3.1	215
Overweight	11.2 \pm 2.8	11	11.5 \pm 2.1	9
Adult Body Condition				
Underweight	11.7 \pm 3.8	6	11.0 \pm 4.1	12
Average	11.3 \pm 3.1	257	10.7 \pm 3.1	224
Overweight	11.4 \pm 2.4	29	10.7 \pm 1.6	15

^a SD=Standard Deviation

Table 42. Longevity by Age at Neutering

Age at Neuter (years)	Bitches ^a		Dogs ^b	
	Mean Age at Death (years) ±SD ^c	Number of Individuals	Mean Age at Death (years) ±SD	Number of Individuals
Intact	9.0±3.6	37	10.7±2.9	107
0 – 4.9	11.0±3.0	134	9.7±3.5	80
5 – 7.9	11.6±2.7	55	11.4±2.8	26
8+	13.6±1.7	33	12.7±1.9	22
Any Age	11.6±2.9	222	10.6±3.3	128

^a Age at neutering missing for 35 bitches

^b Age at neutering missing for 17 dogs

^c SD=Standard Deviation

Figure 1. Health Related Disorders* in Golden Retrievers (N=1444)

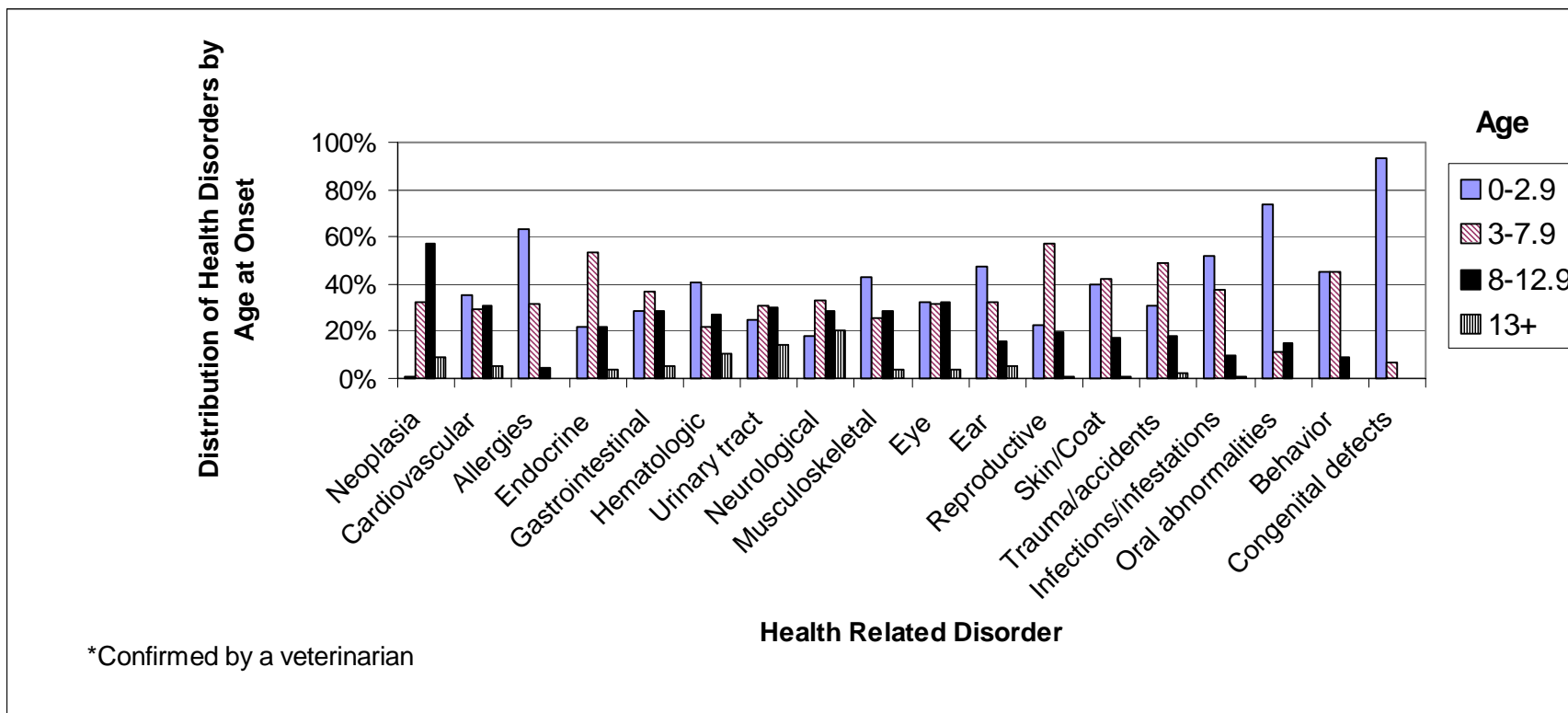


Figure 2. Health Related Disorders* in Golden Retriever Dogs (N=634)

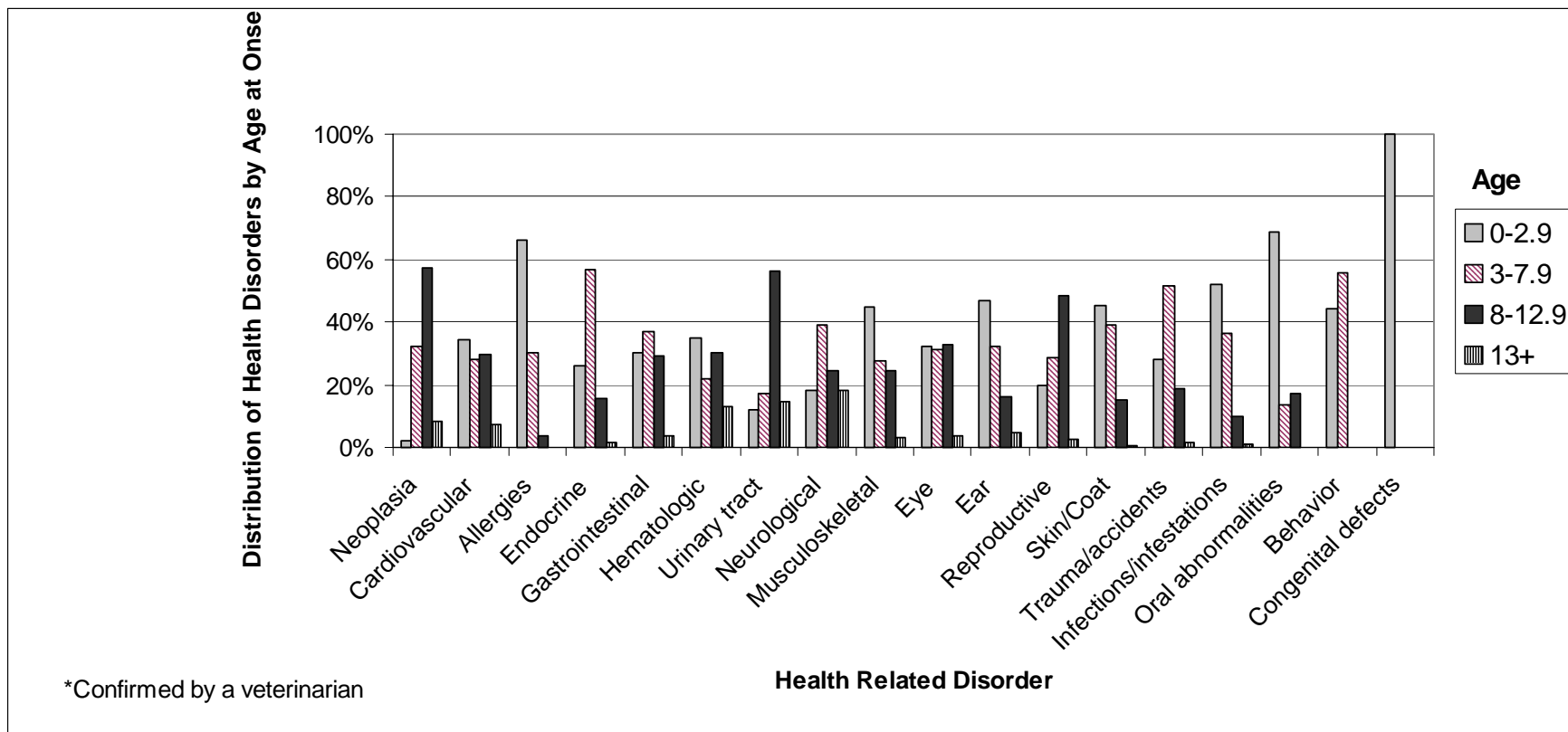


Figure 3. Health Related Disorders* in Golden Retriever Bitches (N=808)

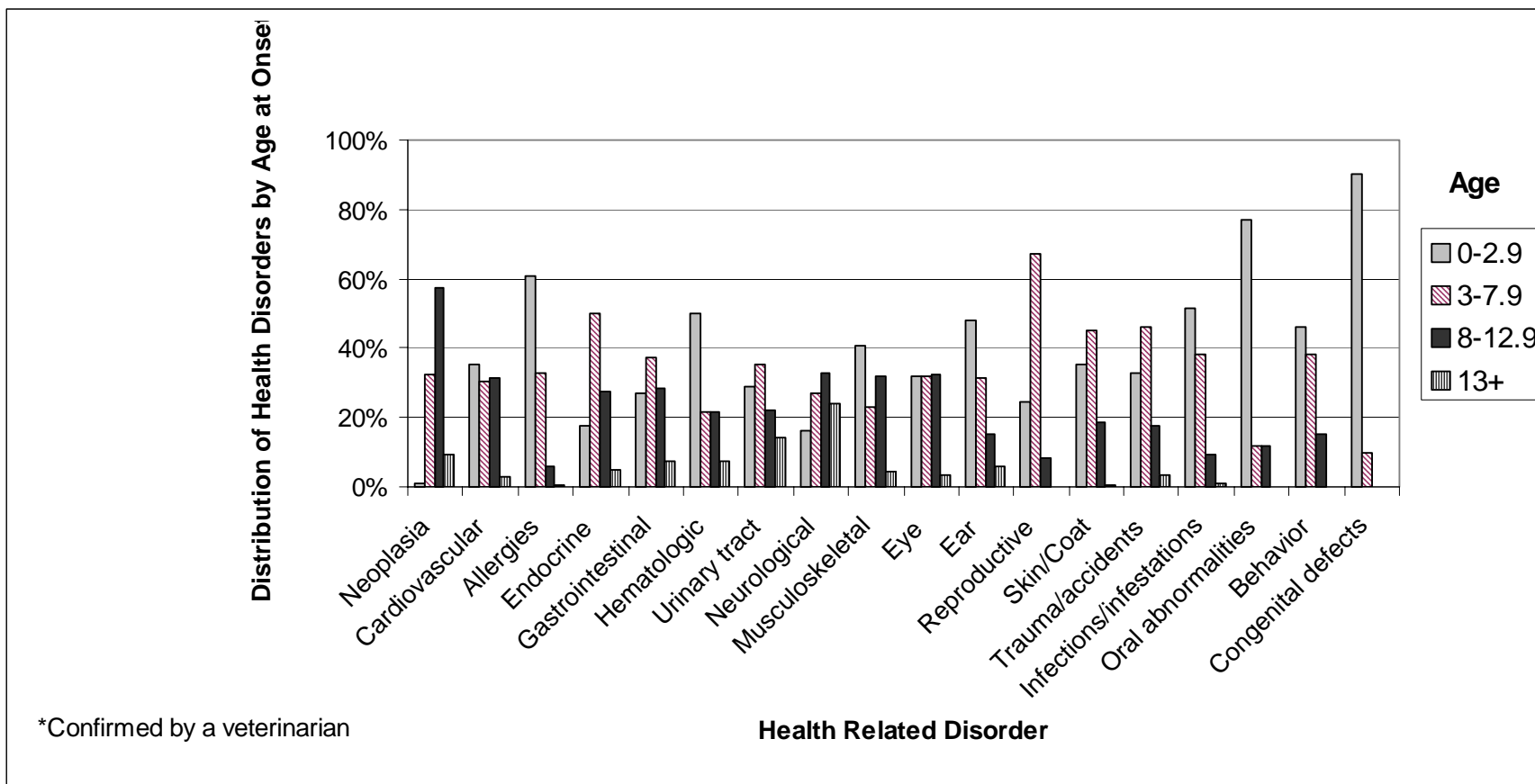


Figure 4. Cause of Death

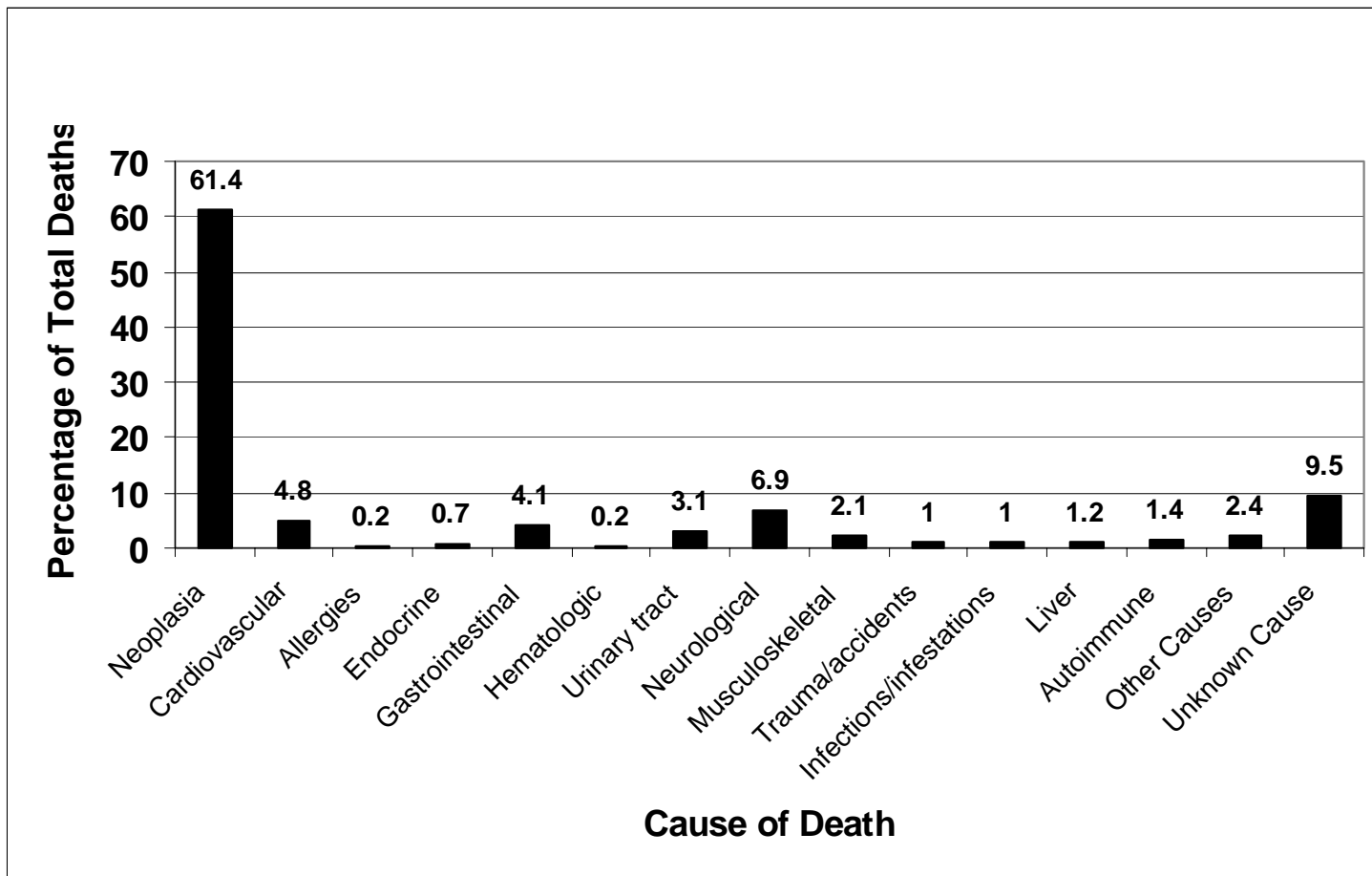


Figure 5. Cause of Death at 3 - 7.9 Years of Age

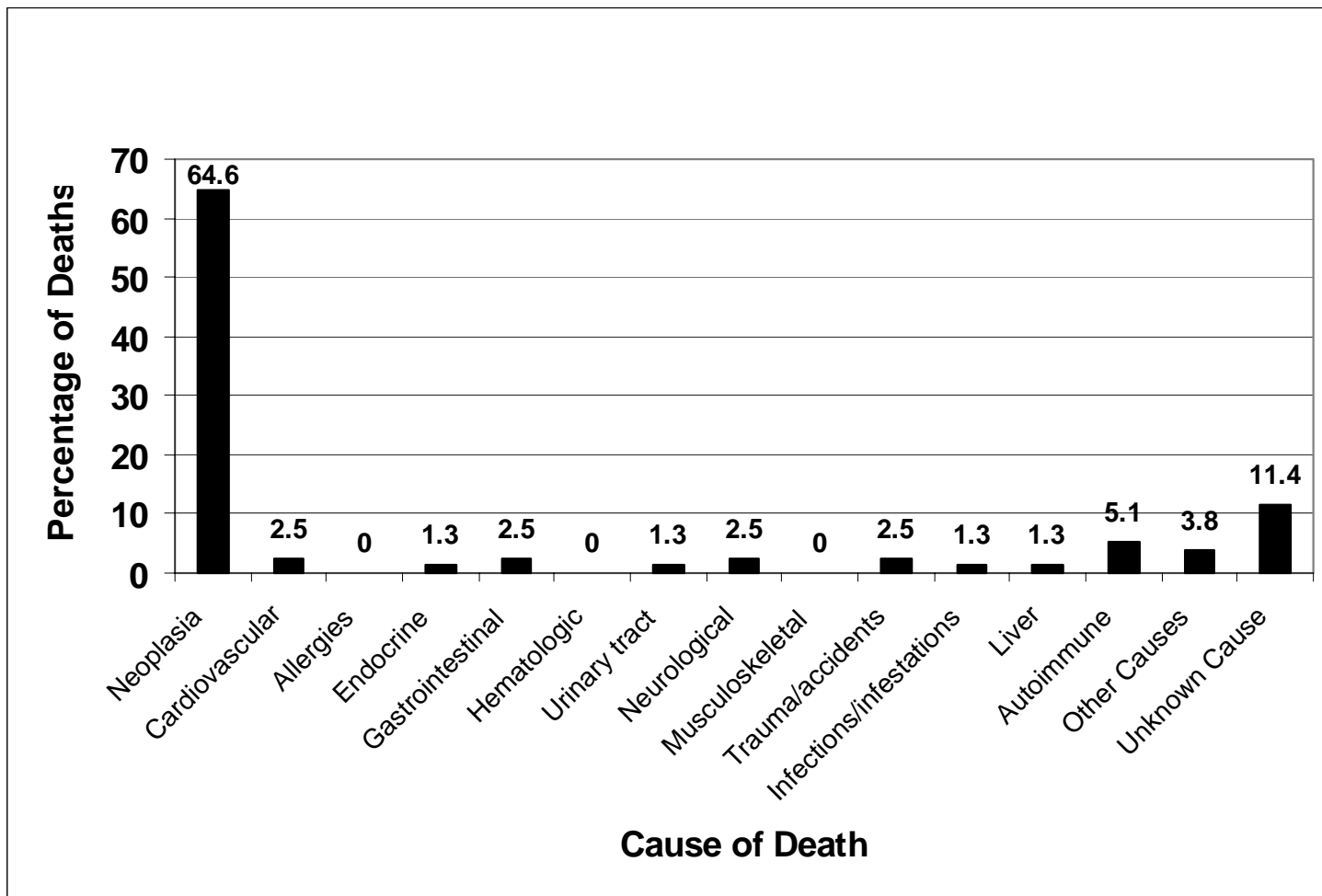


Figure 6. Cause of Death at 8-12.9 Years of Age

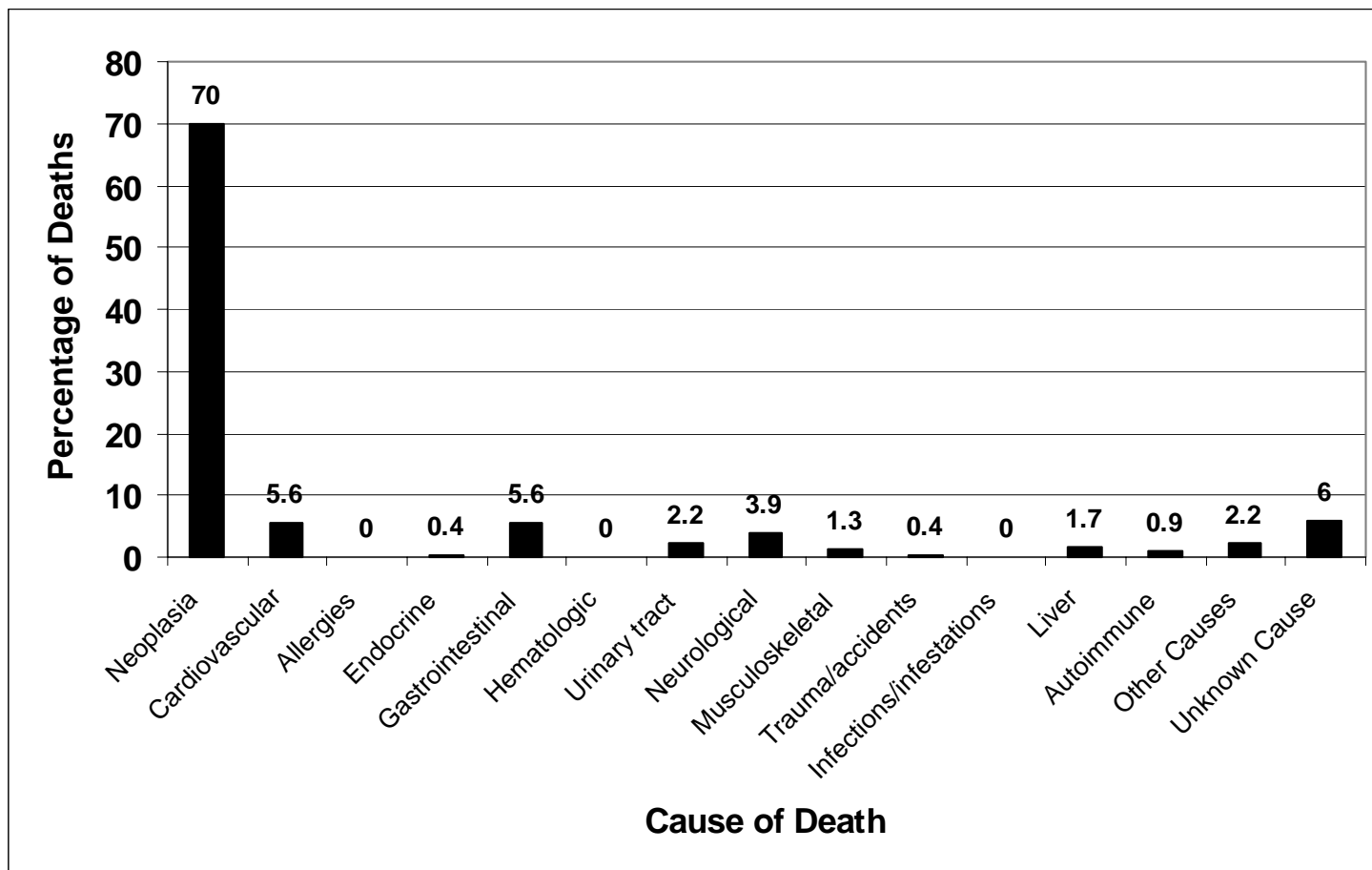


Figure 7. Cause of Death at 13+ Years of Age

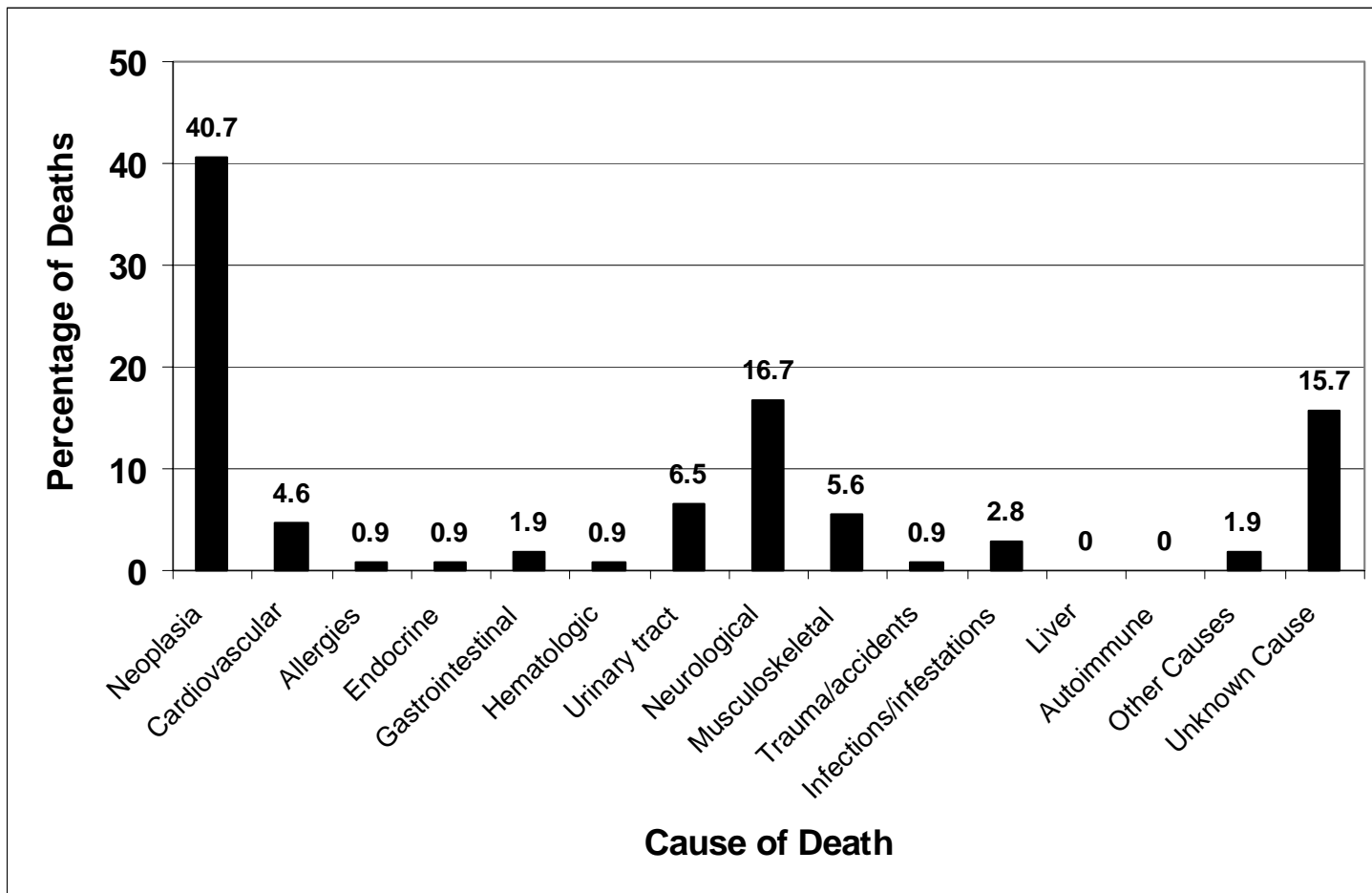


Figure 8. Age & Gender Specific Death Rates

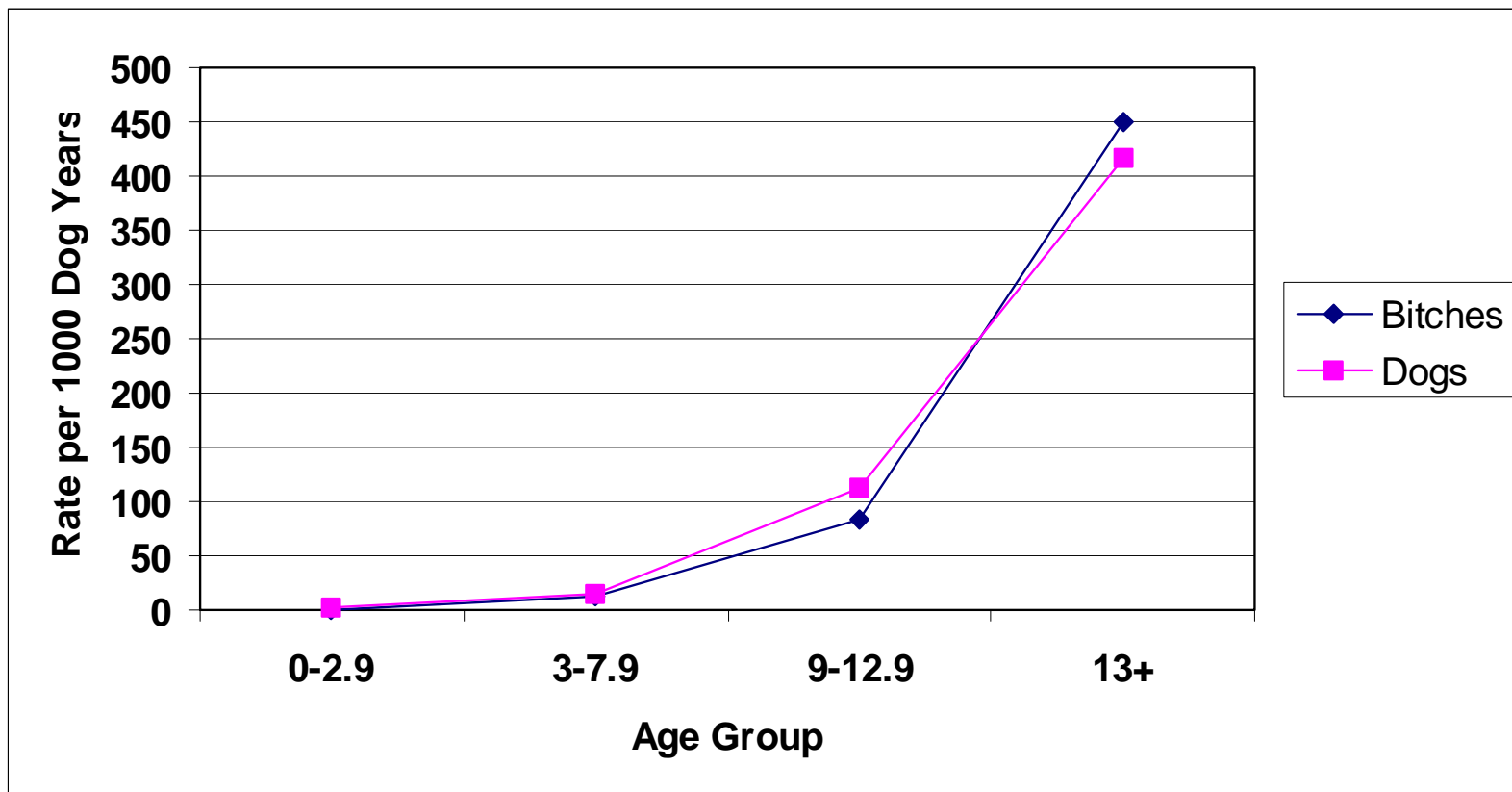


Figure 9. Cause & Gender Specific Death Rates

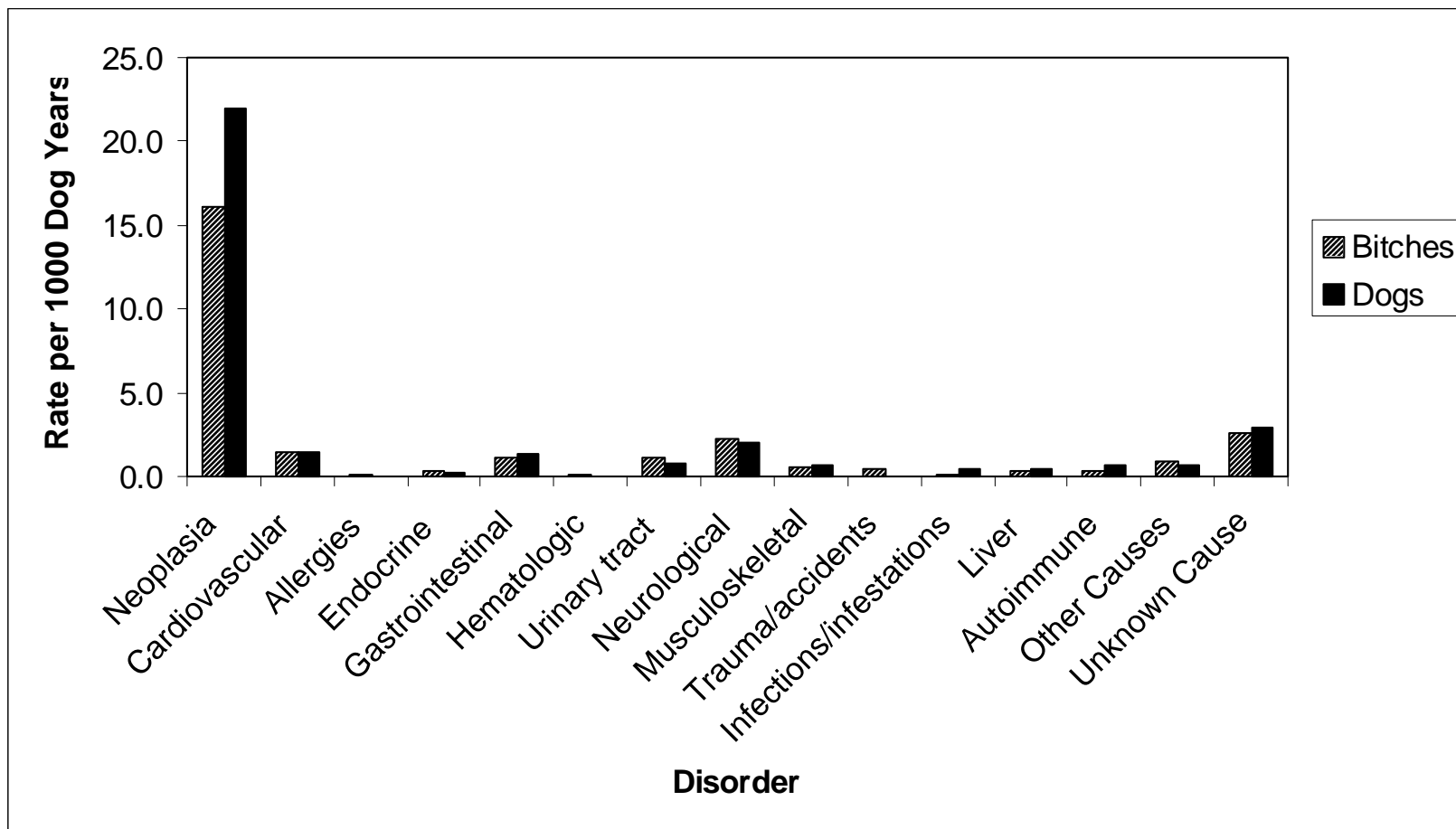
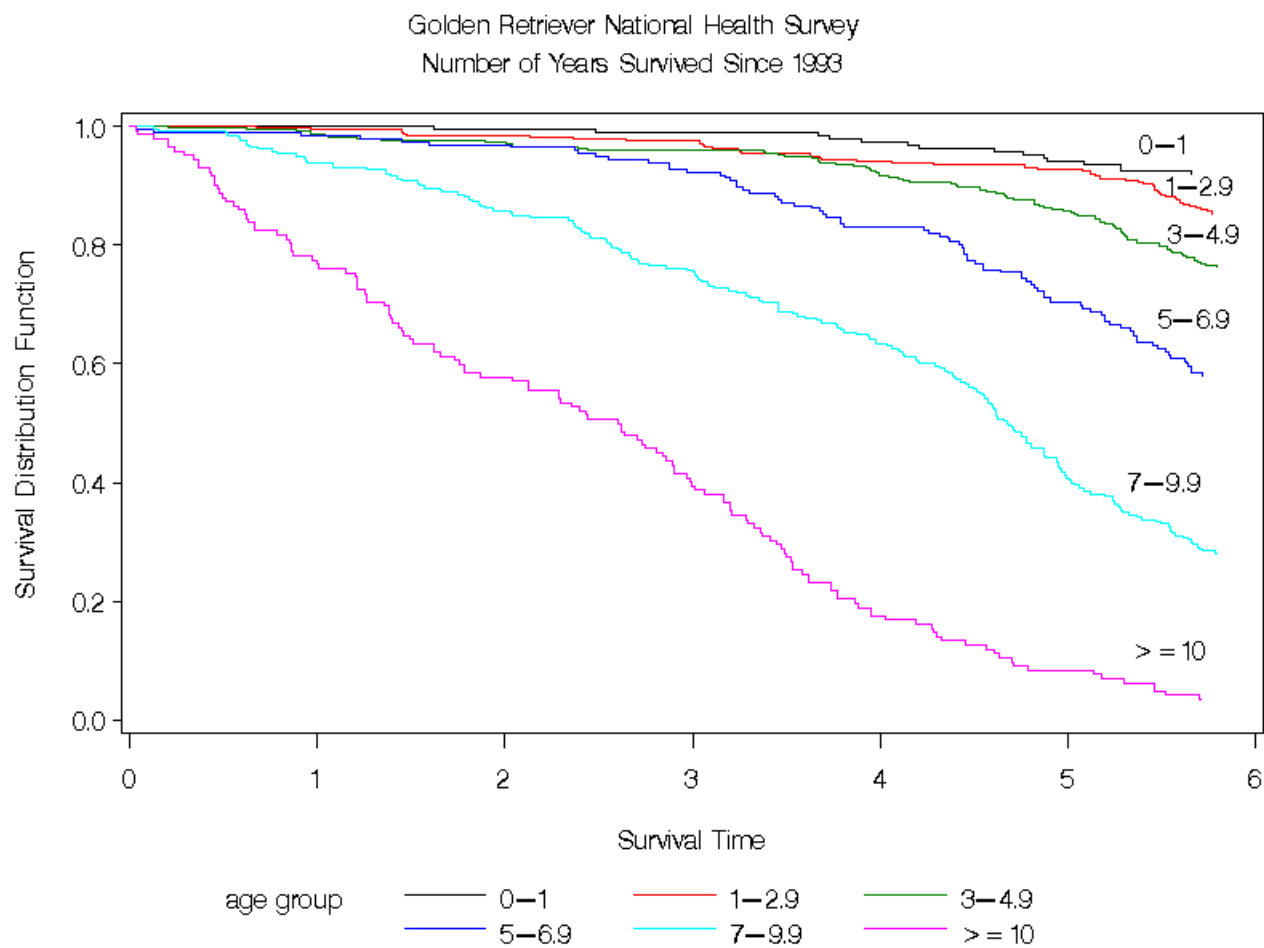


Figure 10. Number of Years Survived Since 1993



Interpretive Summaries and Comments on the Results

Tables 1a & b

1. Seven hundred and forty six dog owners returned usable questionnaires. It was not possible to determine the exact response rate, since the questionnaire was also placed on the web as well as mailed directly. To our knowledge, this is the largest breed survey conducted to date.
2. Of the 1444 Goldens entered into the survey that were alive on January 1, 1993, 556 (38.5%) died in the ensuing five years. Of the 556 deaths, 335 (60%) were the result of euthanasia and the remainder (40%) occurred naturally. These deaths were used to calculate cause-specific death rates. The proportion of bitches and dogs that died was 37.1% and 38.5%, respectively.
3. A veterinarian 77.3% of the time confirmed the cause of death, but a necropsy was performed for only 80 (14.4%) of all deaths. Thus, many underlying causes of death probably went undetected.
4. The majority of owners (about 60%) live with 2-5 Goldens and have been in the breed for >10 years.
5. The majority of participants in this survey were interested in their dogs as companion animals (82%) for obedience (73%) and for conformation (58%) purposes. Only 30% and 25% expressed an interest in agility or hunting and field trials, respectively.

Table 2

1. Approximately 84% of the bitches and 57% of the dogs had been neutered and this was performed at a mean age of 4 years.
2. The mean age of the participating Goldens in 1993 was approximately 5 years.
3. The mean age for 294 bitches that died was 11.3 years versus 10.7 years for 252 dogs. In dogs as in humans, females generally outlive their male counterpart.
4. The mean weight of the bitches and dogs in the survey was 64.1 and 75.4 lbs., respectively.
5. The mean height of the bitches and dogs in the survey was 22.1 and 23.8 in, respectively.

Table 3a

1. About half of the bitches had never whelped a litter. Of the remainder, 16% had whelped one litter. The maximum number of litters whelped was 4.

2. The first litter was whelped at a mean age of 3.3 years and the fourth litter at 6.5 years.
3. The mean number of live born pups per litter was about 7.5 and this decreased only slightly with increasing litter order. There was a mean of approximately 0.7 stillborn pups per litter and this did not increase significantly with increasing litter order.
4. Almost all of the live born puppies per litter were weaned, indicating a very low neo-natal mortality rate.

Table 3b

1. Most litters resulted from natural breeding; the second most common method used was artificial insemination with fresh semen.
2. When controlling for litter order, the mean number of live born puppies per litter was higher for litters resulting from natural breeding compared with artificial breeding. However, one cannot tell from this data if the difference in litter size occurred because bitches that were bred artificially had a prior history of reproductive problems such as failure to conceive using natural methods.

Table 3c

1. The mean number of puppies live born per litter resulting from natural breeding (7.7) was higher than for any of the artificial breeding methods. However, this is difficult to interpret as explained above (Table 3b-comment 2).
2. The mean number of stillborn puppies per litter (1.1) was slightly higher for the litters resulting from artificial insemination using fresh semen than for litters resulting from natural insemination (0.8).

Table 4

1. Most bitches were bred to produce offspring for use as pets (61%), followed by dogs for conformation (54%), or for obedience (40%). Very few Goldens were specifically bred for hunting, tracking, or agility.
2. Approximately one-fourth of the Goldens in this survey had never competed at a show. The largest proportion had competed in obedience trials (67%) followed by conformation shows (48%), and field events (31%).

Table 5

1. The largest proportion of Goldens in this survey had been whelped in another home (40%), followed by in a kennel (34%), or in one's own home (22%). Few had been rescued, adopted or obtained in a pet store.
2. The vast majority (83%) of the Goldens was kept primarily in the house or in a kennel (10%). Very few were crated (2%)
3. The majority of the Goldens (65%) slept in the owner's bed at least some of the time. This finding is similar to that reported for other pet dogs in the United States and indicated that these animals are considered part of the "human" family.

Table 6

1. The mean weight of bitches and dogs was constant until about 13 years of age and then declined significantly. As in humans, this indicates that malnutrition is common in the oldest animals and they should be fed foods of higher caloric density. Such life-stage commercial dog diets are becoming more available for the eldest of the old.
2. In contrast to weight, height remained fairly constant with age. In humans, declining height is associated with age due to weakening of bone structure (osteoporosis), but this same phenomenon has not been reported to occur in dogs.
3. In humans, body mass index calculated as $\text{body weight}/\text{height}^2$, is often used as a measure to assess risk of chronic disease. However, because dogs come in such a variety of heights and body shapes, we created used a different measure of body mass index, namely $\text{weight}/\text{height}$. Later in this report, this measure is related to the occurrence of different diseases in Goldens.
4. The information contained in this table may be useful to the Golden Retriever Club in reassessing breed standards for height and weight.

Table 7

1. Puppies fed to achieve a maximum growth rate are not taller as adults, but they do weigh more than puppies fed for average or slow rates of growth. For this and other reasons addressed later, I recommend that a puppy's rate of growth not be pushed.
2. There is a very significant correlation between the body condition of Goldens as reported by their owner and the Golden's actual weight or body mass index. This makes me confident

that owners can objectively assess the body condition of their animal in health surveys.

Note, there was no obvious relationship between body condition and height.

3. As expected, bigger boned Goldens tend to weigh more, be taller, and have a greater body mass index.

Table 8a & b

1. The large majority (87%) of adult Goldens were fed at least some dry food on a daily basis, whereas only 12% were fed canned food daily.
2. Only 5% of owners of adult Goldens reported never feeding dry dog food.
3. Only about 5% of owners of adult Goldens reported cooking for their dog or feeding table scraps on a daily basis
4. Most adult Goldens are fed dry food twice daily (70%) while 21% are fed once daily. Multiple daily feedings have been shown to reduce the risk of gastric torsion in large breed dogs.

Table 9a & b

1. While 87% of adult Goldens were reported to be fed some dry food daily, the proportion of senior Goldens fed dry food daily was 78%.
2. More senior Goldens appear to be fed some canned food daily (17%) compared with adult Goldens (12%). As noted elsewhere in this report, the oldest Goldens appear to lose weight and body condition and this may explain why more owners are adding canned food to the diet.

Table 10

1. Owners were asked to provide us with a list of ingredients for the dry and canned foods they fed most often. The most common first ingredient for dry food was red meat followed by white meat and some type of plant protein, usually soy. The first two ingredients listed for the canned foods were also red meat and white meat.

Tables 11a & b

1. The most commonly fed ingredient in foods prepared by owners was white meat, followed by unspecified types of meats, vegetables, red meat, and yogurt. Fish was prepared for very few animals.
2. Other types of foods fed regularly included dog biscuits/treats and eggs.

Table 12

1. Thirty nine percent of owners gave their adult Golden a daily multivitamin supplement while 19% did so for their senior animals. It seems to me that seniors would have greater need for multivitamins than would adults.
2. A similar relationship held for daily mineral supplements, which was given to 12% of adults, but to only 7% of seniors.
3. Other types of supplements were given daily to 17% and 20% of adult and senior Golden, respectively. However, the types of supplements given were so varied, it was difficult to categorize them. They included herbs, cartilage-building substances such as glucosamine, brewers yeast, specific vitamins, etc.

Table 13a

1. This table describes the relationship between the type of foods consumed daily and body condition. Overall, 95% and 14% of adult Golden consume dry and canned dog foods daily, respectively, and this does not seem to differ significantly with body condition. In contrast, only 8% of adult Golden consume table scraps, but this proportion is higher in underweight animals (15%). Two interpretations are possible: either feeding table scraps causes dogs to be underweight, for example, by displacing more balanced dry foods from the diet, or more likely, table scraps are preferentially fed to dogs whose owners judge them to be underweight.
2. Overall, 82% and 20% of senior Golden consume dry and canned dog foods daily, respectively. However, dry dog foods were fed less frequently (69%) to underweight animals and canned foods more frequently (35%) to overweight animals. As with adult animals, table scraps are more likely to be fed to underweight animals (31%) than to senior

animals in general (21%). A similar relationship exists for home prepared foods, which is more commonly used in underweight senior dogs.

Table 13b

1. This table relates the type of foods fed to adult and senior dogs with their weight, height, and body mass index.
2. The feeding of different types of foods showed no obvious relationship to body size, except as noted previously, senior Goldens that received home prepared foods or table scraps tended to weigh less than those not being fed such foods.

Table 14

1. The vast majority (74%) of owners fed their Golden as a puppy to achieve an average rate of growth while only 3% were trying to maximize the rate.
2. Most (87%) of the Goldens in this survey were reported to be in optimal body condition as a puppy or an adult, while about 3% and 11% were overweight or obese as a puppy or an adult, respectively. This differs from published studies of pet dogs in which approximately one-third are considered to be overweight. This may reflect the fact that many Goldens in this study were show dogs, or Goldens are less prone to obesity than such breeds as the Labrador Retriever, and Miniature Poodle.
3. Most (63%) of the Goldens were reported to be medium boned while 24% were large boned.

Table 15

1. As part of a long-range project, we are trying to characterize the personality of different breeds. This information is very useful to individuals trying to decide what breed to acquire.
2. Owners on a scale of 1-10 scored each of 10 personality traits. Based on these ratings, Goldens ranked highest for being happy, trainable, and active. The breed scored the lowest on aggressiveness to dogs and people and on fearfulness.
3. Personality of dogs should continue to be one of the most important traits considered when selecting animals for breeding. After all, these personality traits are what makes the Golden such a desirable pet.

Table 16

1. As expected, virtually all Goldens in this survey received regular vaccination. Only 5 (< 0.5%) of owners reported their animal never having received a distemper or parvovirus vaccination. About 7% of owners reported their Golden received a distemper or parvovirus vaccination less frequently than once a year. One might expect the proportion of dogs receiving yearly vaccination to decrease in the future due to concern over vaccine-induced autoimmune diseases and published evidence that the immunity resulting from distemper and parvovirus vaccination lasts significantly longer than one year, and perhaps for life.
2. All but two Goldens in the survey had been previously vaccinated against rabies with most (49%) receiving it every three years.
3. Forty-seven percent of Goldens were never vaccinated against Lyme disease while 13% were not vaccinated against kennel cough. The need for Lyme disease will vary by geographic region, but all Goldens should be considered at risk for kennel cough and be immunized yearly using a parenteral or preferably an intranasal vaccine.

Table 17

1. Most (86%) Goldens receive medication either daily or monthly to prevent heartworm infection.
2. Yearly routine worming for intestinal parasites is practiced by 23% of owners. Most dogs receive worm medications sporadically as needed.

Table 18

1. This table describes the frequency of contact with lawn chemicals, insecticides, and water outside the home.
2. More than half the Goldens were reported to never have contact with owner or commercially applied lawn chemicals. The reliability of this information is uncertain, since the meaning of the term exposure was not clearly defined in the questionnaire. Similarly, approximately half of the Goldens were reported as never having been exposed to flea or tick products.
3. Goldens are often swim in fresh water outside the home, 26% on a daily basis. Immersion in pool or salt water is much less common. The club requested this question, and I am not sure of its significance.

Table 19

1. Twenty-six owners in this survey reported seeking professional counseling or behavior modification for their Golden. Twenty individuals received some type of medical treatment for a behavior problem and 14 (1%) were considered for euthanasia as a result. This indicates that severe behavioral problems are infrequent in Golden Retrievers, but the frequency of these conditions merit continual monitoring.

Table 20.

1. Owners were asked to list what they thought were the three most important health-related conditions in the breed. It should be noted that the term "important" was not further defined. Neoplasia was ranked first by owners followed by hip dysplasia and cardiovascular disease. This is consistent with the survey results showing that neoplasia accounted for >60% of all reported deaths. However, in terms of its frequency of occurrence, hot spots followed by hypothyroidism were the most common health conditions reported with a lifetime risk of 1 in 3 and 1 in 4, respectively.
2. It appears that what one owner considers important might not be important to another. For example, some might consider as important only a condition that results in high mortality (e.g., cancer), while others might focus on how common or difficult to control a condition might be (e.g., hypothyroidism and epilepsy).

Table 21

1. This table constitutes the real meat and potatoes of this survey. It describes the frequency of occurrence of veterinary confirmed health related disorders by organ system/disease type. Within each category, we present both the total number of incidents and the total number of individuals affected, because each individual could have had more than one episode of a given condition.
2. The most frequently reported health problems were related to the skin and coat. However, the most frequently reported life-threatening conditions were a wide variety of cancers. Among the cancers, hemangiosarcoma and lymphosarcoma were the most common. Lipoma occurred more frequently, but it is benign and not life threatening. Other very commonly reported problems were musculoskeletal, allergic, and parasitic.

3. It is often difficult to precisely categorize a condition. For example, a dog with cardiomyopathy may have a heart murmur or arrhythmia due to cardiomyopathy. However, cardiomyopathy may not have been diagnosed. Also, a Golden with cardiomyopathy may develop heart failure, but only heart failure and not cardiomyopathy could have been reported in the survey. Both of these situations would lead to an under-reporting of cardiomyopathy.
4. No attempt was made in this survey to document what procedures or tests veterinarians used to confirm each condition.

Table 22

1. This table expands on the previous table. For each condition it shows the number and percent of individuals that were treated and cured. For some cancers like osteosarcoma, the cure rate among those individuals treated was low (27%) while for others like squamous cell carcinoma the cure rate was relatively high (89%). This information indicates where better treatments are needed.
2. Other fairly common conditions with a low cure rate include food allergy (44%) and fleabite dermatitis (50%). Fortunately, while hot spots are the most frequently reported condition in the breed, the cure rate is reported to be 84%. However, the condition is likely to recur. Ear infections and tracheobronchitis (kennel cough) typically follow a similar pattern.

Table 23

1. A disease may be important not only because it occurs in high frequency, but also because it affects younger animals and may contribute to premature mortality. For example, most cancers occur in relatively older animals ages 8-10 years, whereas allergies hypothyroidism, and epilepsy tend to occur in younger animals.
2. When describing the frequency and pattern of some diseases, it is important to distinguish between dogs and bitches.

Tables 24, 25a, & 25b

1. These tables describe the pattern of disease for all Golden combined and separately for bitches and dogs, in each of three age groups, namely 0-2.9, 3-7.9, 8-12.9, and 13+ years.
2. The prevalence of disease is expressed as the percentage of individuals within the specified age group that develop the diseases indicated.

Table 26

1. This table is similar to Tables 24 & 25 in that it describes the frequency of occurrence of different conditions by age. However, the method used to calculate the frequency in this table is very different. In previous tables disease frequency was based on the number of incidents or individuals affected which provides no measure of the probability (risk) that any individual will develop a specific disease in a given unit of time or over an entire lifetime. In this table, the frequency is expressed as the incidence rate per 1000 dog years at risk. The frequency is expressed this way because dogs were of different ages at the start of the survey in 1993. Thus, individual Goldens may have been observed for varying lengths of time. In using dog years at risk as the reference, one dog living for one year would contribute one dog year at risk.
2. In order to get some idea of how dog years at risk relates to lifetime risk, one can assume that the average lifespan is about 10 years and then divide the rate in dog years by 100 to obtain a lifetime risk (i.e., 1000 years = 100 10-year lifetimes). For example, if one takes the risk of neoplasia for dogs 3-7.9 years of age, which is 32 per 1000 dog years at risk and divides it by 100, it gives you .32 cases of neoplasia per lifetime. One can then multiply this by 100 to get the lifetime risk of neoplasia as a percentage, which gives you 32%. This means that the lifetime risk of a dog developing any neoplasia is approximately 32% or 1 in 3, provided that this rate persisted over the dog's entire 10-year lifetime. However, we know that this rate is lower earlier in life and then increases markedly later in life.
3. A better way to estimate the lifetime risk of developing a disease or condition is to just utilize animals that have died (i.e., that lived their entire lifetime). This approach is shown in Table 37 where the lifetime risk of neoplasia is estimated at 1 in 2 or approximately 50%.

Table 27

1. In humans, body condition is a good predictor of the probability of developing many chronic conditions over time including adult onset diabetes, cardiovascular disease, and some cancers, e.g., breast. Such relationships have not been evaluated however, in animals. In this table, we examined the relationship between body condition, both as a puppy and an adult, with the occurrence of specific health disorders. Comparisons of body condition were made between animals with specific conditions and all those without this condition. A probability

(P) value <0.05 indicates a statistically significant association. In other words, a P value <0.05 means that we would expect to observe an association like the one shown less than 5% of the time due to chance.

2. There was a significant association between being overweight as either a puppy or an adult, and the occurrence of any musculoskeletal condition. For example, 57% of adult dogs that were overweight as puppies developed a musculoskeletal condition compared with only 33% that were average weight as puppies. Forty two percent of adult dogs that were overweight as adults developed a musculoskeletal condition compared with only 33% that were average weight as adults. Thus, being overweight is a risk factor for musculoskeletal disease, and being overweight as a puppy has a stronger effect than being overweight as an adult.
3. The relationship between being overweight as a puppy or an adult and subsequently developing hip dysplasia is also highly significant. Once again, being overweight as a puppy is a stronger predictor of developing hip dysplasia than is being overweight as an adult. For example, of the dogs that were overweight as a puppy, 31% subsequently developed hip dysplasia versus only 17% for those that were average weight as puppies. The comparable percentages for adults that were either overweight or average weight, as adults were 25 and 17%, respectively.
4. The above findings strongly suggest that keeping a puppy from becoming overweight will result in a significant reduction in the incidence and or severity of musculoskeletal disease in general and hip dysplasia specifically, as an adult. This is a particularly important finding in larger breeds that have a high risk of these conditions. Experimental feeding trials performed in kennels where littermates were randomized to receive either ad lib feeding or restricted caloric feeding support this relationship.

Table 28

1. Further relationships were explored between body measurements and the probability of developing specific health related conditions. One significant finding was that bitches that were taller were more likely to have hypothyroidism. For example, the percentage of bitches with hypothyroidism in the following height categories 20-21, 22-23, and 24-24 in., was 17, 21, and 35%, respectively. However, there was only one case of hypothyroidism in the tallest group of bitches. A similar relationship between height and hypothyroidism was

observed in dogs, but it was not statistically significant. This may turn out to be yet another disease that is related to increasing height, such as osteosarcoma.

2. Based on the finding of an association between hypothyroidism and height in bitches (point #1 above), additional analyses were performed. The following were the results:
 - a) Both bitches and dogs neutered at < 1 year of age were significantly taller as adults than those neutered at > or = 1 year of age or intact animals.
 - b) There was no difference in weight by neuter status among dogs. However, bitches neutered at < 1 year of age were significantly heavier than those neutered at > or = 1 year of age or intact bitches.
 - c) When controlling for any differences in weight and height, bitches neutered at either < 1 year or > or = 1 year of age had a significantly increased risk of hypothyroidism (approximately 60% increase) compared with intact bitches.
 - d) When controlling for any differences in weight and height, dogs neutered at > or = 1 year of age had a significantly increased risk of hypothyroidism (approximately 80% increase) compared with intact dogs. The risk of hypothyroidism in dogs neutered at < 1 year of age was increased by about 50%, but this increase was not statistically significant.
 - e) The bottom line is there does appear to be an association between neutering and hypothyroidism independent of the effect of neutering on height or weight. This relationship should be studied further before recommendations are made regarding the optimal age for neutering Golden Retrievers.
3. In bitches there was a highly significant association between increasing body weight and the probability of developing hot spots. For example, the proportion of bitches developing hot spots in the following weight categories, 48-61, 62-69, 70-76, and 77+ lbs. was 20, 24, 31, and 37%, respectively. A similar, but not statistically significant relationship was observed for dogs.
4. The heaviest bitches weighing 77+ lbs. were more likely to develop lymphosarcoma (10%) than were bitches in the other weight categories. This same relationship was not observed for dogs.

Table 29

1. Flea allergies are common in Goldens, and are treated with a variety of insecticide chemicals. Therefore, we looked for associations between the occurrence of flea allergies and other common diseases.
2. A very strong association was found between flea allergies and hot spots. For example, 67% of Goldens with flea allergies developed hot spots versus only 24% of Goldens without hot spots. The nature of this relationship should be explored further to determine if this is related to a common mechanism for flea allergy and hot spots such as hypersensitivity, or results from the use of chemicals to treat fleas.
3. Another possible explanation for the observed association between flea allergies and hot spots is that dogs with fleas scratch and bite their skin, which results in skin abrasions and infection or hot spots. If true, aggressive flea control should reduce the likelihood of hot spots.

Table 30

1. The club requested that we look for a relationship between the frequency of diseases such as cancer and geographic location.
2. A significant association was found between the occurrence of flea allergies and region of the U.S. For example, flea allergies were more commonly reported in the South Atlantic, South Central, and Pacific regions than in the colder and less humid North Central and Mountain regions. This relationship was expected.
3. An unexpected finding was the highly significant association of region and the occurrence of hypothyroidism. Hypothyroidism was twice as likely to be reported in the Mountain and Pacific regions than in the New England and Mid-Atlantic regions. There are several possible explanations. First, there might be environmental differences between the west and east coasts that favor development of hypothyroidism. However, I am not aware of what these might be. Second and more likely, is that this reflects differences among veterinarians in practice patterns or diagnostic testing for hypothyroidism. This finding should be further evaluated using more stringent criteria for a diagnosis of hypothyroidism than were used in this health survey.

Table 31

1. An attempt was made to relate the daily diet of Goldens to the frequency of occurrence of more common health problems.
2. The only significant findings were that Goldens fed table/home prepared foods were more likely to have hot spots (40%) than animals not receiving such foods (28%). Also, Goldens that were on daily dry food were less likely to be diagnosed with hypothyroidism (22%) than animals not receiving daily dry food (36%). However, in both instances, it is not possible to determine if the diet preceded the disease or was changed as a result of the disease. These findings warrant further study. In older cats for example, consumption of canned cat foods may be a risk factor for hyperthyroidism.

Table 32

1. The club was very interested in looking for a relationship between various types of chemical exposures and the frequency of cancer and other health related conditions.
2. A significant decrease in the frequency of lymphosarcoma was found for Goldens whose owners reported exposure to flea/tick drop, shampoos, and sprays. Similarly, a significant decrease in hemangiosarcoma was found in association with use of flea/tick drops. The results provide no evidence that these products increase the risk of these two cancers in Goldens.
3. A very consistent and statistically significant increase in the frequency of hot spots was found for Goldens exposed to lawn chemicals or flea/tick drops, shampoos, and sprays. To me this raises the possibility that hot spots might result from a chemical hypersensitivity in predisposed animals. These associations require further study to determine what types of chemicals pose the greatest risk and whether there is a dose-response relationship between these exposures and the risk of hot spots.

Table 33

1. The need for yearly vaccination of dogs and cats is being questioned because of growing concern they may cause autoimmune conditions. We examined the relationship between yearly vaccination for rabies, distemper, and parvovirus and the occurrence of several common health related conditions.

2. The only statistically significant finding is that 31% of Goldens receiving yearly parvovirus vaccination developed hot spots versus only 20% in those not vaccinated yearly. This finding provides further evidence that hot spots might be a manifestation of hypersensitivity and that multiple insults (e.g., chemicals or vaccines) may trigger an acute episode. Further research is needed to determine the temporal relationship between parvovirus vaccination and the onset of hot spots. Also, it is not clear if this association holds for all of the parvovirus vaccines available.

Table 34a

1. This table and the following four figures describe the major causes of death for the 420 dogs that died since 1993 and for whom the cause had been confirmed by a veterinarian.
2. Neoplasms were the major cause of death in Goldens accounting for 65, 70, and 41% of all deaths in the 3-7.9, 8-12.9, and 13+ years of age categories, respectively. Overall, neoplasms accounted for 61% of all deaths. In other breeds that we have surveyed such as the Irish Setter, neoplasms accounted for only 23% of all deaths. No other disease category accounted for more than 10% of all deaths in Goldens.
3. Approximately 7% of all deaths were attributed to neurological conditions. Many of the animals in this category had been euthanized late in life for cognitive dysfunction and urinary and bladder incontinence. Cardiovascular causes such as cardiomyopathy accounted for about 5% of all deaths
4. Because death certificates are not required for all dogs and necropsy exams are infrequently performed, many deaths are attributed to unknown causes (10%).

Tables 34 b and c

1. These tables break down the causes of death for dogs and bitches separately.
2. Neoplasms generally kill more dogs (66%) than bitches (57%).

Table 35a

1. Death rates were lower among bitches at all ages up to 13+ years of age. After 13 years of age, the death rate for bitches (449 per 1000 dog years) exceeded the death rate for dogs (417 per 1000). This same pattern of death is often observed in other animal species as well, eg., humans.

Tables 35 b and c

1. Cancer deaths in dogs and bitches occurred in all age groups beginning at 3 years of age.
The highest proportion of cancer deaths were in 8-12.9 year old Goldens.
2. The causes of death in dogs and bitches were very similar.
3. Most of the deaths in older animals in the neurological category were probably due to a general decline of cognitive function rather than to a specific disease entity. It is unlikely therefore, that any of these can be prevented. However, there is a drug licensed for dogs that might be useful in slowing the rate of decline in cognitive function.
4. It is likely that if more Goldens were autopsied, the number of deaths in the "unknown cause" category would decline.

Table 36

1. This table examines the years of potential life lost due to different diseases. The way this is done is to subtract the average age of death for animals dying of a specific condition from the average age of death for all other animals and then multiply this difference by the total number of animals dying of the specific condition. The resulting number describes the total number of years of life that were lost among the 430 Goldens because of a specific disease. Disease that affect younger animals e.g., autoimmune disease, will make a greater contribution than diseases that occur at an older age, e.g., cancer.
2. The greatest number of potential years of life lost among the Goldens that died in this survey was attributed to lymphosarcoma (102 years). Each of the 43 Goldens with lymphosarcoma lost approximately 2.9 ($11.4 - 8.5 = 2.9$) years of life. In contrast, each dog dying of hemangiosarcoma lost approximately 1.1 years of life. This approach tells you how many years of extra life might be gained if you could completely prevent a specific disease.

Table 37

1. Probably the easiest way to understand how likely a disease is to affect an individual is to express it as a lifetime risk. In this table we describe the lifetime risk for all of the major health related conditions reported in the survey.

2. The lifetime risk of a Golden developing a neoplasm is approximately 1 in 2 or 50%. Hemangiosarcoma was the most frequently reported cancer with a lifetime risk of 1 in 5 followed by lymphosarcoma with a lifetime risk of 1 in 8.
3. The lifetime risk of breast cancer in Goldens is approximately 1 in 20. Compare this with a lifetime risk of breast cancer in women of approximately 1 in 9. However, keep in mind that the risk of breast cancer in bitches will be reduced by over 95% if they undergo ovariectomy before their first heat cycle.
4. While hemangiosarcoma appears to be the most commonly occurring cancer in Goldens, the exact risk of this disease as determined by this survey may not be accurate. Some owners reported that their dog developed a hemangiosarcoma, but did not specify the specific anatomic site. Other owners stated that their Golden developed a tumor of the spleen, but did not know the specific type. We assumed for the purposes of analysis, that all of the primary tumors of the spleen were hemangiosarcoma. This will likely result in an overestimate of the incidence of hemangiosarcoma. Regardless of the exact incidence of hemangiosarcoma in Goldens, clinical experience indicates it is a common cancer and a leading cause of death in the breed.

Table 38

1. This table describes outcome for the 20 most common health related disorders. Most of the common health related conditions are not life threatening, with the exception of cancer. Seventy percent of the dogs with hemangiosarcoma died during the five-year time frame of the survey. It is likely that some of the surviving dogs with a history of hemangiosarcoma would have died of the disease had they been followed longer.

Table 39

1. The mean age at death is reported both for Goldens that died of diseases that were confirmed and unconfirmed by a veterinarian. Using either classification of death, the mean ages at death were similar.

Table 40

1. The mean age at death was compared for dogs that originated from different sources. The longevity of bitches bred in another home was approximately one year longer (11.9 years)

compared with bitches bred in a kennel (10.9 years), or in the owner's home (self; 10.5 years). For dogs, the place where it was bred did not seem to make a difference in lifespan.

2. There were too few Goldens adopted from other owners or purchased from pet stores to make a reliable estimation of longevity.

Table 41

- 1 Longevity was significantly related to the height, but not to body weight or body mass. Among bitches and dogs, the taller the animal as an adult, the shorter the lifespan. There was a difference of 1.1 and 2.2 years in the mean age at death between the tallest and the shortest bitches and dogs, respectively. This is the same relationship that is known to exist across different breeds, where the tallest breeds have the shortest lifespan. The difference in mean age at death between the tallest and shortest breeds may be as much as 8 years!!! One interpretation of these findings is that whatever genes control height are also somehow involved with, or near the genes on the chromosomes that control the rate of aging in dogs.
- 2 The fact that height is highly correlated with longevity, whereas weight is not, can be explained by the fact that height is primarily genetically controlled; in contrast, weight is strongly influenced by environmental factors such as diet and exercise.

Table 42

1. Neutered bitches and dogs generally live longer than intact animals and the longer neutering is delayed, the greater the effect.
2. The difference in age at death between intact and neutered dogs probably resulted from selection bias rather than from any biological advantage to neutering. For example, for a dog to be neutered at 8+ years of age, it must first live at least 8 years. Thus, only older dogs fall in this age category and this artificially results in an older age at death. Also, Goldens in this population were probably neutered earlier in life if they had physical or medical problems that made them unsuitable for breeding. Such Goldens would be less likely to live as long as others, which were neutered later in life when their breeding was completed.

Figure 10

1. This figure describes the probability that dogs of a specified age that were alive in 1993 will live additional years. It is the kind of information used by actuaries to price life insurance policies for people. Such information is not available for pet dogs.
2. This actuarial information can be used to predict how long Goldens of a given age are likely to live. For example, it predicts that approximately half of all Goldens >10 years of age will probably die within the following 2.5 years. In contrast, half of the Goldens in the 7-9.9 year age bracket can be expected to live for approximately 5 additional years.
3. Another way to use this information is to express the probability that a dog of a given age will survive for one more year. For dogs >10 years of age the one-year survival rate is approximately 80% whereas for dogs 7-9.9 years of age the one-year survival rate is approximately 96%.

Appendix I

1998 Golden Retriever Club of America Health Survey

1998 Golden Retriever Health Survey

A Collaborative Effort of the
Golden Retriever Foundation,
Board of Directors of the Golden Retriever Club of America,
Health & Genetics Committee of the Golden Retriever Club of America,
and
The Purdue University School of Veterinary Medicine, Section of Clinical Epidemiology
(Dr. Larry Glickman, Head)

The Golden Retriever Club of America (GRCA) and the Purdue University School of Veterinary Medicine would like your participation in a survey to identify the frequency of health related conditions of Golden Retriever dogs. This information will be useful in prioritizing health research resources and will provide a baseline against which to measure the impact of future breeding and health promotion programs. All information collected will be tabulated by Dr. Glickman at Purdue University and a report of the findings submitted to the GRCA for distribution to its members. All responses will be kept confidential, i.e., the names of the respondents will be kept anonymous and separate from the responses. The study is funded by the Golden Retriever Foundation. Its success and accuracy depends on a high rate of cooperation.

Please take the time to complete **one questionnaire for each eligible dog** and return it promptly to:

Golden Retriever 1998 Health Survey
c/o Professor Larry Glickman
Purdue University School of Veterinary Medicine
West Lafayette, IN 47907-1243

Please feel free to make copies of this survey as needed. Additional copies may also be downloaded from the GRCA's web page at <http://www.grca.org/> or by contacting the GRCA Administrative Assistant, Jolene Carey at (405)-752-8400.

The deadline for responses is November 1, 1998, after which time your questionnaire will not be included.

Thanks for your participation in this most important study. If you have any questions concerning this survey, please call Melissa Goodman, DVM at 215-248-2956.

Selecting Dogs for Entry into the 1998 GRCA Health Survey

Each **GRCA member** may enter **up to 5 dogs** in this survey. Eligible dogs are those which were **alive on January 1, 1993** and for which you know their life history. These dogs can either be alive now or have died since January 1, 1993. If you owned more than 5 dogs on January 1, 1993, arrange them according to the month of birth and select the first 5 for inclusion. Please complete a separate survey form for each of the dogs entered.

I. General Owner Information

1. How many Golden Retrievers were living with you on Jan. 1, 1993: _____
2. How many Golden Retrievers are currently living with you: _____
3. How many years have you been in the breed: _____
4. What are your primary interests: (Check all that apply)
 - _____ Breeder _____ Show _____ Obedience _____ Agility
 - _____ Field Trials _____ Tracking _____ Search & Rescue
 - _____ Companion/pet _____ Rescue _____ Hunting
5. What three diseases or health-related conditions do you feel are of the most concern for Golden Retrievers:
 - a) _____
 - b) _____
 - c) _____

Please fill out a separate form for *each* dog

II. General Dog Information

1. Date of birth: ___ month ___ day ___ year

2. Sex: ___ male ___ female

3. Neutered ___ no ___ yes

If neutered, date of surgery: ___ month ___ year

4. For bitches only, has this dog ever had a litter: ___ yes ___ no

If yes, please complete following table:

Litter #	Month/Year	# Live born	# Still born	# Weaned	Type of Breeding (use code below)
#1					
#2					
#3					
#4					

For Type of Breeding, please use the following code:

1=natural; 2=artificial insemination-fresh semen; 3=artificial insemination-chilled semen

4=artificial insemination-frozen semen

5. Where did you obtain this dog: ___ bred yourself ___ breeder (kennel)

___ breeder (home) ___ shelter or rescue ___ pet store

___ other (specify) _____

6. For what purpose was this dog bred?

___ conformation ___ field trial/hunt test ___ obedience

___ companion/pet ___ agility ___ tracking ___ hunting

7. State or country in which this dog spent most of its lifetime: _____

8. As a puppy (< 9 months), what rate of growth did you try to achieve:

___ maximum ___ average ___ slow ___ don't know

9. As a puppy (< 9 months), would you characterize your dog as:

___ obese ___ overweight ___ average or optimum weight

___ underweight

10. As an adult (>9 mo.), what was the dog's usual: ___ weight (lb.) ___ height (in)

11. As an adult (>9 mo.), would you characterize your dog as:

___ obese ___ overweight ___ average/optimum weight ___ underweight

12. As an adult (>9 mo.), would you characterize your dog as:

____ large boned ____ medium boned ____ small boned

13. Please record the **number of times** fed in the appropriate boxes based on your dog's adult (9 mos.- 7 yr.) and senior (>7 yr.) diet:

Type of Food	Frequency of Feeding					
	Daily		Weekly		Monthly	
	Adult	Senior	Adult	Senior	Adult	Senior
Dry						
Canned						
Home prepared						
Table scraps						
Other (specify)						

14. For the commercial foods **fed daily** for the longest period of time, list the first four ingredients as stated on the label:

Dry: 1) _____ 2) _____ 3) _____ 4) _____

If don't know, what is the Brand _____ & Specific Food Type _____

Canned *1) _____ 2) _____ 3) _____ 4) _____

* Do not include water as an ingredient

If don't know, what is the Brand _____ & Specific Food Type _____

15. For the home prepared foods fed daily for the longest period of time, list the most common types fed:

1) _____ 2) _____ 3) _____ 4) _____

16. Please check the boxes based on the supplements given your dog as an adult (9 mos.- 7 yr.) and senior (>7 yr.):

Type of Supplement	Frequency Supplements Given					
	Daily		Weekly		Monthly	
	Adult	Senior	Adult	Senior	Adult	Senior
Multivitamins						
Minerals						
Other (specify)						

17. On average, how many shows a year did/does this dog attend (choose a typical year during which the dog was actively competing):

___ field events ___ agility trials ___ obedience trials
 ___ tracking tests ___ conformation shows

18. How is your dog primarily housed:

___ in a crate in the house ___ kennel (indoor) ___ free in the house
 ___ kennel (inside/outside) ___ fenced yard ___ garage
 ___ Other (specify) _____

19. Does your dog sleep on your bed

___ never ___ sometimes ___ usually

20. What is the current vital status of this dog:

___ alive ___ died ___ euthanatized

21. If died, date of death: ___ month ___ day ___ year

22. If died, what was the cause(s): _____

23. If died, was the above cause of death verified by a veterinarian: ___ yes ___ no

24. If died, was an autopsy performed: ___ yes ___ no

III. Personality and Temperament

How would you rank your dog on a scale of 1 to 10 for each of the following characteristics? Please check the rank that applies:

	Never (Low)					Sometimes Always (High)				
	1	2	3	4	5	6	7	8	9	10
1. Active or energetic (activity level)	1	2	3	4	5	6	7	8	9	10
2. Excitable	1	2	3	4	5	6	7	8	9	10
3. Aggressive to dogs	1	2	3	4	5	6	7	8	9	10
4. Aggressive to people	1	2	3	4	5	6	7	8	9	10
5. Submissive to dogs	1	2	3	4	5	6	7	8	9	10
6. Submissive to people	1	2	3	4	5	6	7	8	9	10
7. Fearful of people	1	2	3	4	5	6	7	8	9	10
8. Fearful of environmental changes*	1	2	3	4	5	6	7	8	9	10
9. Happy	1	2	3	4	5	6	7	8	9	10
10. Trainable	1	2	3	4	5	6	7	8	9	10

* Environmental changes include thunder, guns, firecrackers, other loud noises, etc.

IV. Health Related Conditions

1. For each of the conditions listed below, please indicate those that affected your dog, the age at **first** diagnosis, whether a veterinarian confirmed that diagnosis, and if the condition was treated, cured, or a recurrent problem. Room is provided for you to list additional conditions.

Condition	Age at Onset	Diagnosed by Veterinarian		Treated		Cured		Recurrent Problem	
	Years	Yes	No	Yes	No	Yes	No	Yes	No
Neoplasms (Cancer)									
Osteosarcoma									
Lymphosarcoma									
Testicular									
Breast									
Hemangiosarcoma									
Mast cell									
Squamous cell									
Melanoma									
Lipoma									
Other _____									
Cardiovascular									
Heart failure-unknown cause									
Cardiomyopathy									
Heartworm Infection									
Heart arrhythmia									
Heart murmur									
Pulmonic stenosis									
Subaortic stenosis									
Valve dysfunction									
Other _____									

Condition	Age at Onset	Diagnosed by Veterinarian		Treated		Cured		Recurrent Problem	
	Years	Yes	No	Yes	No	Yes	No	Yes	No
Allergies									
Allergic dermatitis due to:									
Fleas									
Food									
Inhaled allergens									
Contact _____									
Other _____									
Atopic rhinitis									
Anesthesia allergy _____									
Drug allergy _____									
Other Allergy _____									
Endocrine									
Hypothyroid									
Hyperthyroid									
Cushings (hyperadrenal)									
Addison (hypoadrenal)									
Diabetes mellitus									
Pancreatic insufficiency									
Other _____									
Gastrointestinal									
Bloat without torsion									
Bloat with torsion									
Esophageal disorder									
Gastritis (chronic or intermittent)									
Excessive vomiting									
Excessive diarrhea									
Excessive flatulence									
Malabsorbtion									

Condition	Age at Onset	Diagnosed by Veterinarian		Treated		Cured		Recurrent Problem	
	Years	Yes	No	Yes	No	Yes	No	Yes	No
Hematologic									
Hemophilia									
Autoimmune hemolytic anemia									
Chronic anemia									
Thrombocytopenia (or platelet dysfunction)									
von Willebrand's disease									
Bone marrow failure									
Other _____									
Urinary Tract / Renal									
Kidney disease									
Kidney failure									
Bladder stones									
Bladder infection(s)									
Other _____									
Neurological									
Seizures of unknown origin									
Seizures of known origin									
Wobbler syndrome									
Dementia (senility)									
Nerve degeneration									
Tremors - generalized									
Other _____									
Musculoskeletal									
Eosinophilic panosteitis									
Osteochondritis dissecans									
Hip dysplasia									
Elbow dysplasia									

Condition	Age at Onset	Diagnosed by Veterinarian		Treated		Cured		Recurrent Problem	
	Years	Yes	No	Yes	No	Yes	No	Yes	No
Musculoskeletal continued									
Spondylosis									
Degenerative disk disease- weakness or paralysis									
Anterior cruciate ligament tear									
Arthritis (autoimmune)									
Arthritis (not autoimmune)									
Patella luxation									
Other _____									
Eyes									
Progressive retinal atrophy									
Cataracts									
Glaucoma									
Entropion									
Ectropion									
Prolapsed 3 rd eyelid									
Distichiasis									
Injury									
Other _____									
Ears									
Hearing problem									
Chronic or intermittent infection									
Other _____									

Condition	Age at Onset	Diagnosed by a Veterinarian		Treated		Cured		Recurrent Problem	
	Years	Yes	No	Yes	No	Yes	No	Yes	No
Reproductive									
<u>Female</u>									
Infertility									
Failure to carry to term									
Irregular heat cycles									
Chronic false pregnancy									
Difficult whelping (dystocia)									
Mastitis									
Pyometra									
Insufficient milk									
Malformed puppies									
Poor mothering instinct									
<u>Male</u>									
Infertility									
Cryptorchidism									
unilateral									
bilateral									
Enlarged prostate									
Lack of libido									
Abnormal semen									
Testicular atrophy									
Other _____									
Skin/Coat									
Dull and dry									
Seborrhea									
Pigment abnormalities									
Coat color change									
Sebaceous cysts									

Condition	Age at Onset	Diagnosed by Veterinarian		Treated		Cured		Recurrent Problem	
	Years	Yes	No	Yes	No	Yes	No	Yes	No
Skin continued									
Sebacous adenitis									
Hot spots									
Other _____									
Trauma/Accidents									
Fracture/broken bone									
Lameness requiring treatment (not due to fracture or cruciate tear)									
Laceration requiring stitches									
Other _____									
Infections/Infestations									
Bacterial									
Anal sacculitis									
Pneumonia									
Prostatitis									
Cystitis									
External ear (otitis externa)									
Tonsillitis									
Septicemia									
Lyme disease									
Interdigital infection									
Other _____									
Viral									
Parvovirus									
Corona virus									
Distemper									
Tracheobronchitis(kennel cough)									
Other _____									

Condition	Age at Onset	Diagnosed by Veterinarian		Treated		Cured		Recurrent Problem	
	Years	Yes	No	Yes	No	Yes	No	Yes	No
Fungal									
Ringworm									
Other _____									
Parasitic continued									
Giardia									
Coccidia									
Roundworms									
Hookworms									
Whipworms									
Demodectic mange									
Other _____									
Oral									
Abnormal dentition									
Missing teeth									
Malocclusion (bite problem)									
Behavior Problems									
Fear aggression									
Dominance aggression									
Inappropriate urination									
Other _____									
Congenital (birth) defects									
Umbilical hernia									
Cleft lip or palate									
Other _____									

2. Please check the appropriate boxes according to your dog's vaccination schedule:

Type of Vaccination	Frequency of Vaccination				
	Sporadic	Yearly	Every 2 years	Every 3 years	Never
Rabies					
Distemper					
Parvovirus					
Leptospirosis					
Lyme disease					
Kennel cough					
Other_____					

3. Frequency of routine worming:

___ Sporadic ___ Yearly ___ Every 2 years ___ Every 3 years ___ Never

Use of heartworm preventative:

___ Sporadic ___ Monthly ___ Never

4. Please check the appropriate boxes based on your dog's exposure to chemicals and pesticides:

Type of Exposure	Frequency of Exposure			
	Never	Sporadic	Weekly	Monthly
Contact with lawn chemicals Owner applied Commercial applied				
Tick/Flea dips				
Tick/Flea products applied as drops on skin				
Tick/Flea shampoos				
Tick/Flea sprays				
Tick/Flea - other Specify				
Swimming				
Pool				
Fresh water				
Salt water				

- 5. Was this dog ever involved in an automobile accident that required treatment by a veterinarian:
 yes no
- 6. Did this dog ever receive professional counseling or behavior modification for a behavior problem?
 yes no
- 7. Was this dog ever medically treated for a behavior problem? yes no
- 8. Was euthanasia ever considered for a behavior problem? yes no
- 9. Has this dog ever had any adverse drug reactions? yes no
 - a. If yes, what was the specific drug involved: _____
 - b. Was this drug reaction diagnosed by a veterinarian ? yes no
 - c. How old was the dog when this adverse drug reaction occurred? ____ years ____ months
- 10. Was this dog ever hospitalized for any health-related conditions other than those noted in the table starting on page 6? If YES, please specify _____

V. Additional Comments

Please use the back of this page, if needed, to tell us anything about the health of this dog that was not covered in the questionnaire.

If you would like this dog entered into a future GRCA health and longevity survey or study, please indicate your willingness to participate by providing the information below.

Dog's registered name: _____

Dog's call name: _____

Your name: _____

Your address: _____

 number street city state zip

Your telephone number: _____

 area code number

The above information will be kept at Purdue University and will remain **confidential**.

Thank you for your participation in this health survey of Golden Retrievers. Please return your questionnaires to Purdue University in the envelope provided by **November 1, 1998**. Be assured that all information will be kept strictly confidential and names of participants will not be released. After Dr. Glickman analyzes the data at Purdue University, a detailed report will be sent to the Golden Retriever Club of America for publication.