The Irish Setter Club of America
National Health Survey
2003

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A Collaborative Effort of

The Irish Setter Club of America

and

The Purdue University School of Veterinary Medicine
Section of Clinical Epidemiology
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Dr. Malathi Raghavan

This report is dedicated to our best friends, the Irish Setters.

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I Introduction

There are approximately 150 breeds eligible for American Kennel Club (AKC) registration. 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 in its phenotypic diversity, 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 and health between the smaller and larger breeds. For example, 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 many diseases than do purebred dogs of the same size. For these reasons, the canine pet population must be evaluated breed by breed to fully appreciate 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, both mixed and pure breeds. However, the VMDB primarily includes animals referred to veterinary teaching hospitals in North America, because of severe or live-threatening conditions that are difficult to diagnose and treat in private veterinary practice. Thus, these dogs are not necessarily 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 might be carriers of these inherited diseases. Few of these health surveys however, have been comprehensive. Also, persons unfamiliar with the principles of research design and statistical data analysis have conducted many of these breed surveys.

The breed survey described in this report represents a collaborative effort between the Irish Setter 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 Irish Setters. A secondary

objective was to relate physical traits, diet, environment, and personality of individual animals to certain diseases and longevity. A third objective was to compare the results of this survey with one previously conducted in Irish Setters. We hope the results of this survey will serve to better familiarize veterinarians and owners with the Irish Setter breed and provide Irish Setter breed clubs nationwide with information for prioritizing future health-related research and disease prevention efforts. It should serve to stimulate further studies on the causes of diseases that affect Irish Setters.

II Methods

The Health Committee of the Irish Setter Club of America (ISCA) in collaboration with Dr. Larry Glickman, Dr. Nita Glickman and Dr. Malathi Raghavan from Purdue University School of Veterinary Medicine developed the questionnaire that was made accessible to Irish Setter owners through the Irish Setter Club's website and by direct mailing. In addition to helping develop the health survey, Connie Vanacore coordinated communications between Purdue University and individuals of the Club. Each owner was asked to complete a separate questionnaire for up to five dogs that were alive on January 1, 1996. Usable responses were submitted directly to Purdue University for 565 Irish Setters by 291 owners.

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 The SAS System version 8.2 was used for data analysis. The SAS system is a comprehensive data management and analysis application from the SAS Institute (Cary, NC). A probability (P) value of <0.05 was used as a measure of statistical significance in some of the analyses to test for a possible association between a disease and a potential risk factor such as a particular diet, a chemical exposure, or vaccination. A P value of <0.05 implies that the likelihood of observing the exposure-disease relationship by chance alone was less than one in twenty (i.e., a level widely considered as being statistically significant).

List of Abbreviations / Glossary of Terms

N = Number
% = Percent
SD = Standard Deviation
Puppy ≤ 9 months of age
Adult ≥ 9 months to 7 years of age
Senior ≥ 7 years of age

Section I. Description

Table 1—Number of Owners and Irish Setters Participating in 1997 and 2003 Irish Setter Club of America (ISCA) Surveys

	1997	2003
Owners	217	291
Irish setters	436	565

Table 2—Detailed Information for 291 Owners Participating in the 2003 ISCA Survey.

	Owners	
	N	%
Number of Irish Setters entered into the study by each owner		
1	156	53.6
2	58	19.9
3	37	12.7
4	20	6.9
≥5	20	6.9
These **291 owners** contributed **565 Irish Setters** to this survey		
Number of Irish Setters currently living with each owner		
None	5	1.7
1	62	21.3
2 – 5	176	60.5
6 – 10	36	12.4
>10	8	2.7
Unknown / missing	4	1.4
Total number of Irish Setters currently living with **291 owners** is **973**		
Number of years each owner has been associated with Irish Setters		
1 – 5	6	2.1
6 – 10	21	7.2
11 –15	20	6.9
16 – 20	28	9.6
21 – 25	40	13.7
26 – 30	78	26.8
> 30	91	31.3
Unknown / missing	7	2.4
Total number of years **291 owners** were associated with Irish Setters is **7811**		

Table 2—Detailed Information for 291 Owners Participating in the 2003 ISCA Survey
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	Owners	
	N	%
Primary interest (More than one response per owner possible)		
Companion / pet	246	84.5
Show	238	81.8
Breeder	141	48.5
Obedience	140	48.1
Hunt test	79	27.1
Breed rescue	71	24.4
Agility	69	23.7
Assistance	47	16.2
Hunting	31	10.7
Fields trials	29	10.0
Tracking	12	4.1
Search & Rescue	2	0.7
Other	8	2.7

Table 3—Background of Irish Setters participating in 2003 survey

	N	%
Place of birth		
US	514	91.0
Canada	14	2.5
Australia	1	0.2
England	1	0.2
Unknown/missing	35	6.2
Place where obtained		
Breeder—other home	219	38.8
Breeder—self	195	34.5
Breeder—kennel	123	21.8
Adopted from private owner	14	2.5
Shelter or rescue	6	1.1
Pet store	3	0.5
Service dog agency	1	0.2
Other or Unknown / missing	5	0.8
Purpose for breeding (more than one response per Irish Setter possible)		
Conformation	485	85.8
Companion / pet	358	63.4
Obedience	130	23.0
Hunting	56	9.9
Dual hunt / show	53	9.4
Agility	23	4.1
Tracking	9	1.6

Table 4—Country of Current Residence for Irish Setters Participating in the 2003 Survey

	N	%
Country		
USA	544	96.3
Canada	11	1.9
Netherlands	3	0.5
Missing	7	1.2

Table 5—State of Residence in the United States for Irish Setters Participating in the 2003 Survey

	N	%
Alabama	7	1.3
Arizona	5	0.9
California	118	21.7
Colorado	28	5.2
Connecticut	15	2.8
Delaware	1	0.2
Florida	10	1.8
Georgia	3	0.6
Idaho	1	0.2
Illinois	18	3.3
Indiana	3	0.6
Kansas	4	0.7
Massachusetts	8	1.5
Maryland	12	2.2
Maine	6	1.1
Michigan	34	6.3
Minnesota	20	3.7
Missouri	6	1.1
Mississippi	3	0.6
Montana	1	0.2
North Carolina	3	0.6
New Hampshire	5	0.9
New Jersey	26	4.8
New Mexico	2	0.4
Nevada	4	0.7
New York	45	8.3
Ohio	18	3.3
Oklahoma	6	1.1
Oregon	20	3.7
Pennsylvania	14	2.6
Rhode Island	9	1.7
South Dakota	5	0.9
Tennessee	3	0.6
Texas	24	4.4
Utah	3	0.6
Virginia	10	1.8
Vermont	1	0.2
Washington	25	4.6
Wisconsin	16	2.9
West Virginia	2	0.4

Table 6—Vital Status of Irish Setters Participating in the 2003 ISCA Survey

	N		%	
Alive as of January 1, 1996	479		100.0	
Bitches	291		60.8	
Dogs	188		39.3	
Born after January 1,1996	86		100.0	
Bitches	40		46.5	
Dogs	46		53.5	
Vital status as of December 31, 2003 (study end)				
Bitches	331			
Alive	192		58.0	
Died	139		42.0	
Euthanized				
Yes		107		77.0
No		30		21.6
Unknown / missing		2		1.4
Dogs	234			
Alive	131		56.0	
Died	103		44.0	
Euthanized				
Yes		78		75.7
No		22		21.4
Unknown / missing		3		2.9
Cause of **242 deaths** diagnosed by a veterinarian	186		76.9	
Bitches	105		75.5	
Dogs	81		78.6	
Necropsy performed	17		7.0	
Bitches	9		6.5	
Dogs	8		7.8	

Table 7—Comparison of Age at Death of Irish Setters Participating in 1997 and 2003 ISCA Surveys

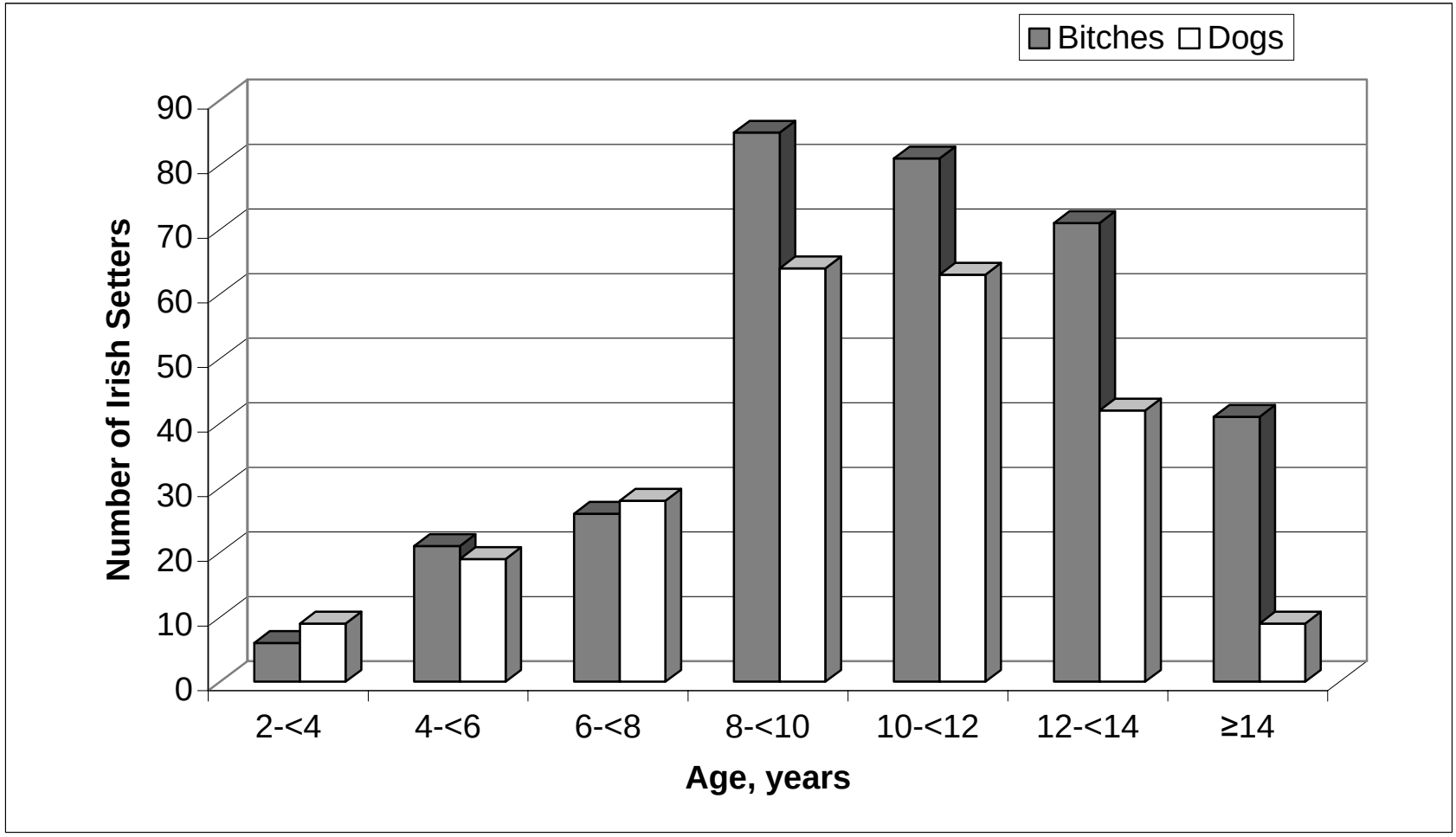
	Age at Death in Years					
	1997			2003		
	N	Mean	± SD	N	Mean	± SD
All	209	11.2	2.8	242	11.3	2.6
Bitches	122	11.9	2.5	139	11.5	2.7
Dogs	87	10.1	2.8	103	11.0	2.5

Table 8—Age of Irish Setters in 2003 ISCA Survey

	N	Mean	± SD
Age obtained as puppy (months)*	307	2.9	1.4
Bitches	172	2.9	1.3
Dogs	135	3.0	1.5
Unknown / missing	6		
Age obtained as adult (years) *	57	2.8	1.6
Bitches	35	2.7	1.8
Dogs	22	2.9	1.3
Age as of January 1, 1996 (years)	479	4.6	3.2
Bitches	291	4.7	3.3
Dogs	188	4.4	3.2
Age as of December 31, 2003, if alive (years)	323	9.5	2.9
Bitches	192	9.9	2.9
Dogs	131	8.8	2.7
Age at death (years), for all deaths	242	11.3	2.6
Bitches	139	11.5	2.7
Euthanized	107	11.6	2.6
Not euthanized	30	11.0	3.0
Dogs	103	11.0	2.5
Euthanized	78	11.0	2.5
Not euthanized	22	10.7	2.8
Age at death (years), veterinary confirmed deaths	186	11.1	2.5
Bitches	105	11.3	2.7
Euthanized	89	11.5	2.6
Not euthanized	16	10.0	3.1
Dogs	81	10.9	2.3
Euthanized	67	10.9	2.4
Not euthanized	12	10.8	1.6

* One hundred and ninety five (123 bitches and 72 dogs) were bred in the homes of their current owners

Figure 1—Distribution of Ages by Gender as of December 1, 2003 or at Death*



* This indicates the maximum age reached during the survey.

Table 9—Activities Participated In by Irish Setters in 2003 Survey

	N	%	Number of events per year		
			Range	Mean	± SD
Events*					
None	101	17.9	--	--	--
Agility	38	6.7	2 – 60	15.6	14.2
Obedience	133	23.5	1 – 50	8.1	7.7
Field trial / hunt test	113	20.0	1 – 32	6.6	5.4
Conformation	413	73.1	1 - 130	21.2	19.1
Hunting*					
None	448	79.3	--	--	--
Game birds	54	9.6	1 – 300	30.8	61.3
Field hunt	107	18.9	1 – 200	11.4	22.6

* More than one response per Irish Setter possible

Table 10—Housing and Management of Irish Setters Participating in 1997 and 2003 ISCA Surveys

	1997		2003	
	N	%	N	%
Primary housing type (> 50% of the time)				
Free in house	305	69.3	454	80.3
Yard	51	11.6	27	4.8
Kennel	51	11.6	58	10.3
Crate	15	3.4	14	2.5
Other or Missing / unknown	18	4.1	12	2.1
Sleeps in owner's bed				
Never	121	27.8	115	20.4
Sometimes	168	38.5	239	42.3
Usually / Always	147	33.7	210	37.2
Unknown / missing	0	0.0	1	0.2

Table 11—Body Characteristics of Irish Setters Participating in 1997 and 2003 ISCA Surveys

	1997			2003		
	N	Mean	± SD	N	Mean	± SD
Height (inches)	387	26.4	1.6	530	26.3	1.6
Bitches	227	25.5	1.3	314	25.5	1.0
Dogs	160	27.6	1.2	216	27.5	1.6
Unknown/ missing	49			35		
Weight (pounds)	426	69.0	12.0	549	67.6	10.6
Bitches	250	63.0	9.5	322	62.3	8.0
Dogs	176	77.6	9.8	227	75.0	9.4
Unknown / missing	10			16		

Table 12—Body Mass Index (Weight/Height) of Irish Setters Participating in 2003 Survey by Age and Gender

	N	Mean	± SD
All	529	2.5	0.3
Bitches	314	2.4	0.3
Dogs	215	2.7	0.3
Unknown / missing	36		
Ages 0 - 8 years	99	2.5	0.3
Bitches	51	2.4	0.3
Dogs	48	2.7	0.3
Unknown / missing	10		
Ages 8+ years	430	2.6	0.3
Bitches	263	2.4	0.3
Dogs	167	2.7	0.3
Unknown / missing	26		

Figure 2—Distribution of Heights by Gender

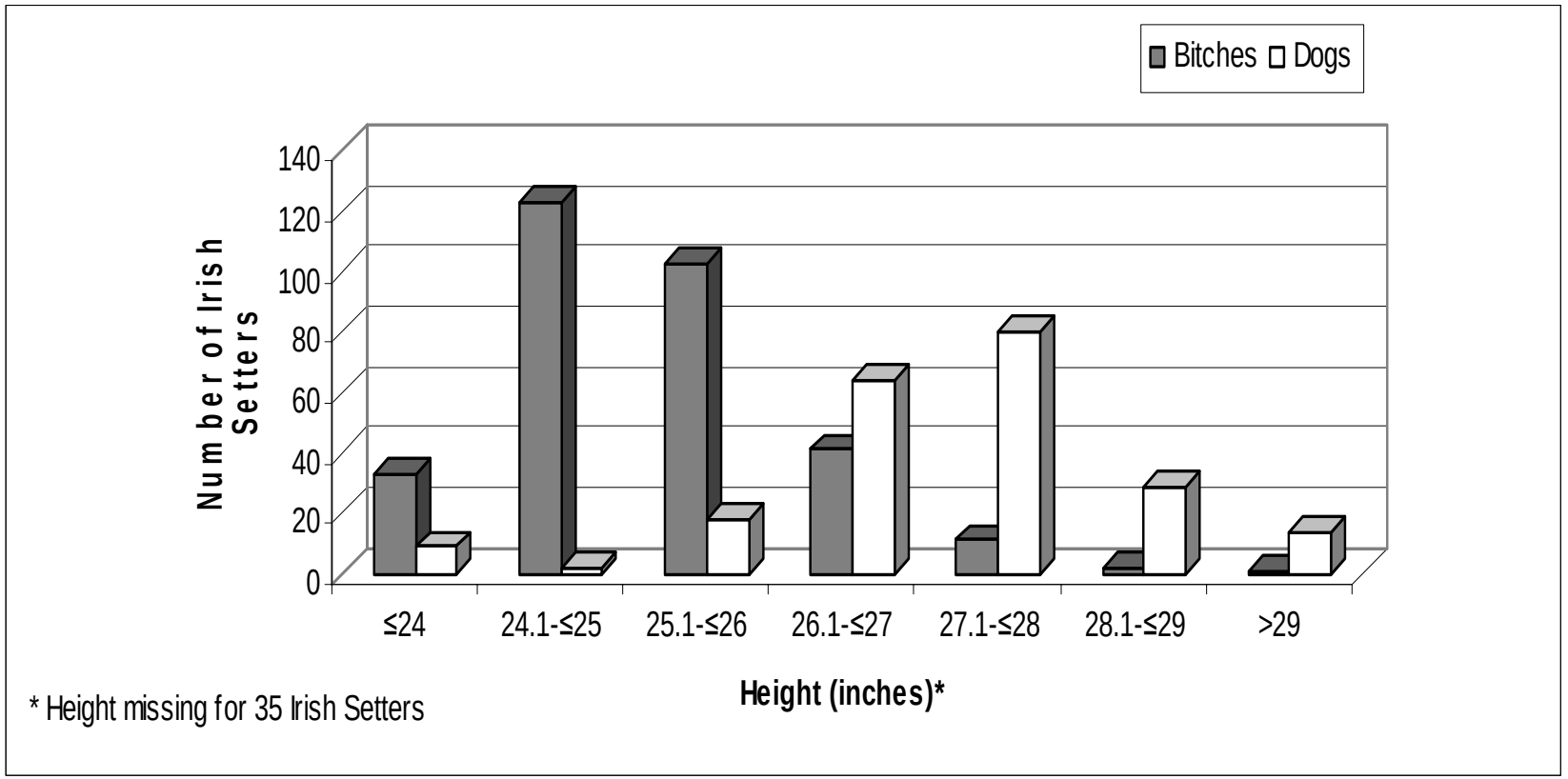


Figure 3—Distribution of Weights by Gender

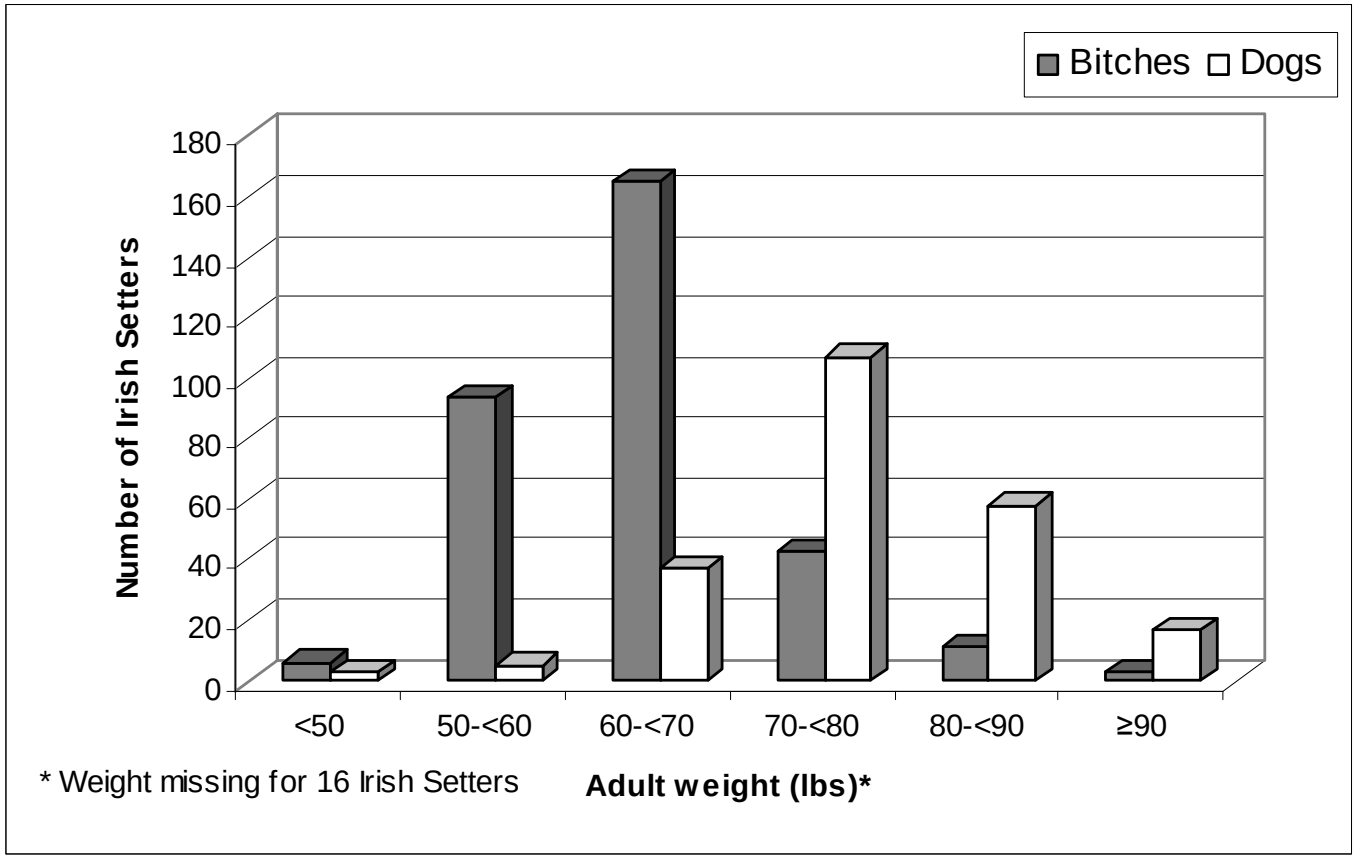
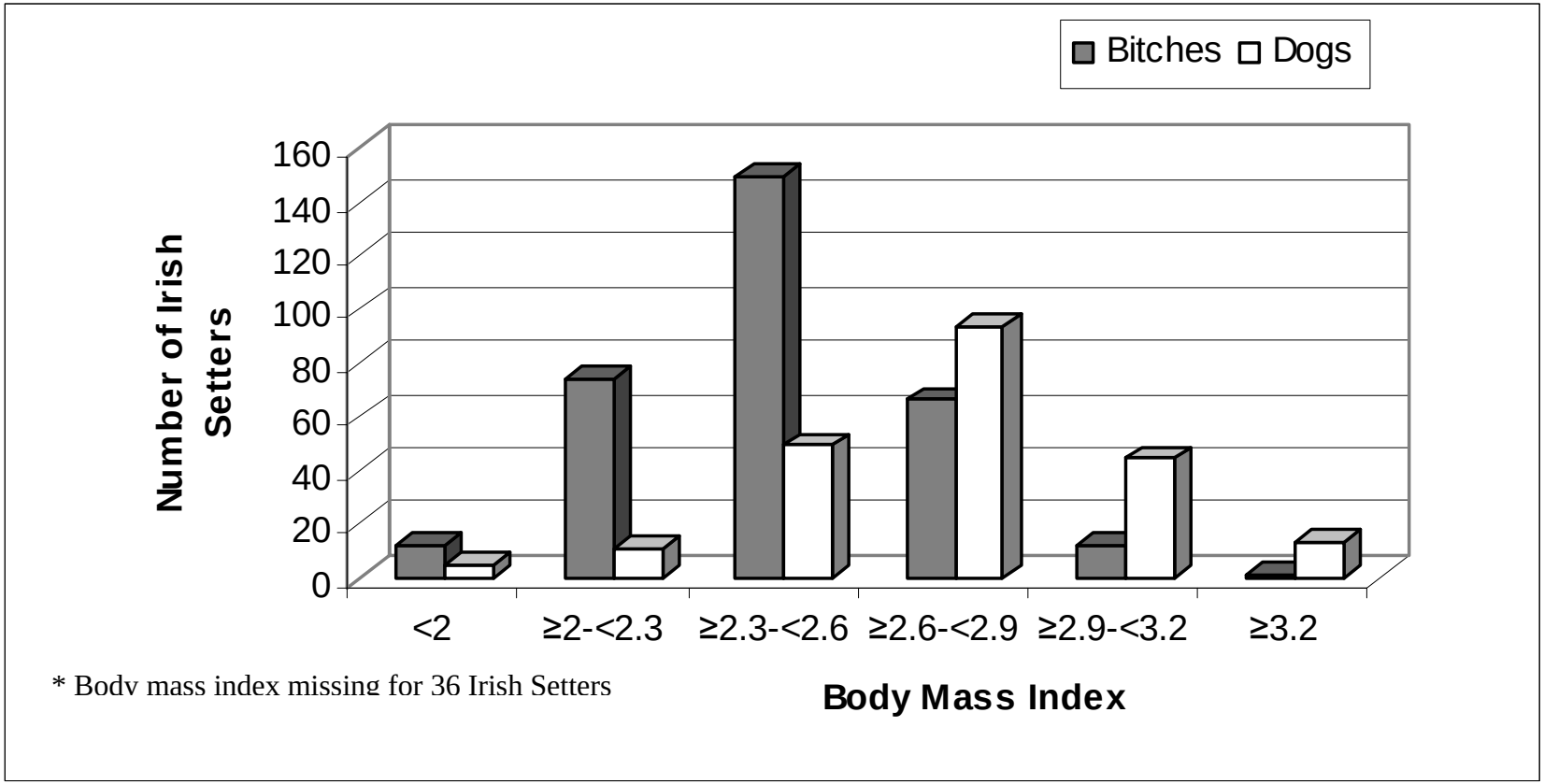


Figure 4—Distribution of Body Mass Index (Weight/Height) by Gender



* Body mass index missing for 36 Irish Setters

Table 13—Body Measurements of Irish Setters Participating in 2003 Health Survey [a]

Bitches

	Weight[c] (lb)		Height[c] (in)		Weight/Height Index	
	N	Mean±SD	N	Mean±SD	N	Mean±SD
Age[b] (years)						
0 – 2.9	0	--	0	--	0	--
3 – 7.9	50	60.4±7.0	50	25.4±1.0	50	2.4±0.3
8 – 12.9	200	63.2±8.3	194	25.6±1.1	194	2.5±0.3
13+	72	61.3±7.5	70	25.3±1.0	70	2.4±0.2

Dogs

	Weight[c] (lb)		Height[c] (in)		Weight/Height Index	
	N	Mean±SD	N	Mean±SD	N	Mean±SD
Age[b] (years)						
0 – 2.9	1	65.0	1	24.0	1	2.7
3 – 7.9	48	73.3±8.6	45	27.2±2.1	45	2.7±0.3
8 – 12.9	151	76.0±9.8	143	27.7±1.5	143	2.7±0.3
13+	27	73.0±8.3	27	27.3±0.9	26	2.7±0.3

[a] Numbers do not total to 331 bitches and 234 dogs due to missing information
[b] Age as of December 31, 2003, or age at death.
[c] Weight and height as of December 31, 2003, or as last reported.

Table 14—Differences in Body Measurements by Age of Irish Setter Bitches Participating in 1997 and 2003 Health Surveys

Age (years)	1997		2003		% Difference
	N	Mean	N	Mean	
Weight (lb)					
3 – 7.9	28	63.2	50	60.4	-4.4
8 – 12.9	152	63.0	200	63.2	0.3
13+	68	62.9	72	61.3	-2.5
Height (in)					
3 – 7.9	22	25.0	50	25.4	1.6
8 – 12.9	141	25.5	194	25.6	0.4
13+	62	25.5	70	25.3	-0.8
Weight/Height Index					
3 – 7.9	22	2.4	50	2.4	0
8 – 12.9	141	2.5	194	2.5	0
13+	62	2.5	70	2.4	-4.0

Table 15—Differences in Body Measurements by Age of Irish Setter Dogs Participating in 1997 and 2003 Health Surveys

Age (years)	1997		2003		% Difference
	N	Mean	N	Mean	
Weight (lb)					
3 – 7.9	36	78.8	48	73.3	-7.0
8 – 12.9	121	77.6	151	76.0	-2.1
13+	18	75.7	27	73.0	-3.6
Height (in)					
3 – 7.9	34	27.8	45	27.2	-2.2
8 – 12.9	111	27.7	143	27.7	0
13+	15	26.7	27	27.3	2.2
Weight/Height Index					
3 – 7.9	34	2.9	45	2.7	-6.9
8 – 12.9	111	2.9	143	2.7	-6.9
13+	15	2.9	26	2.7	-6.9

Figure 5—Relationship of Body Weight to Age in Irish Setter Bitches

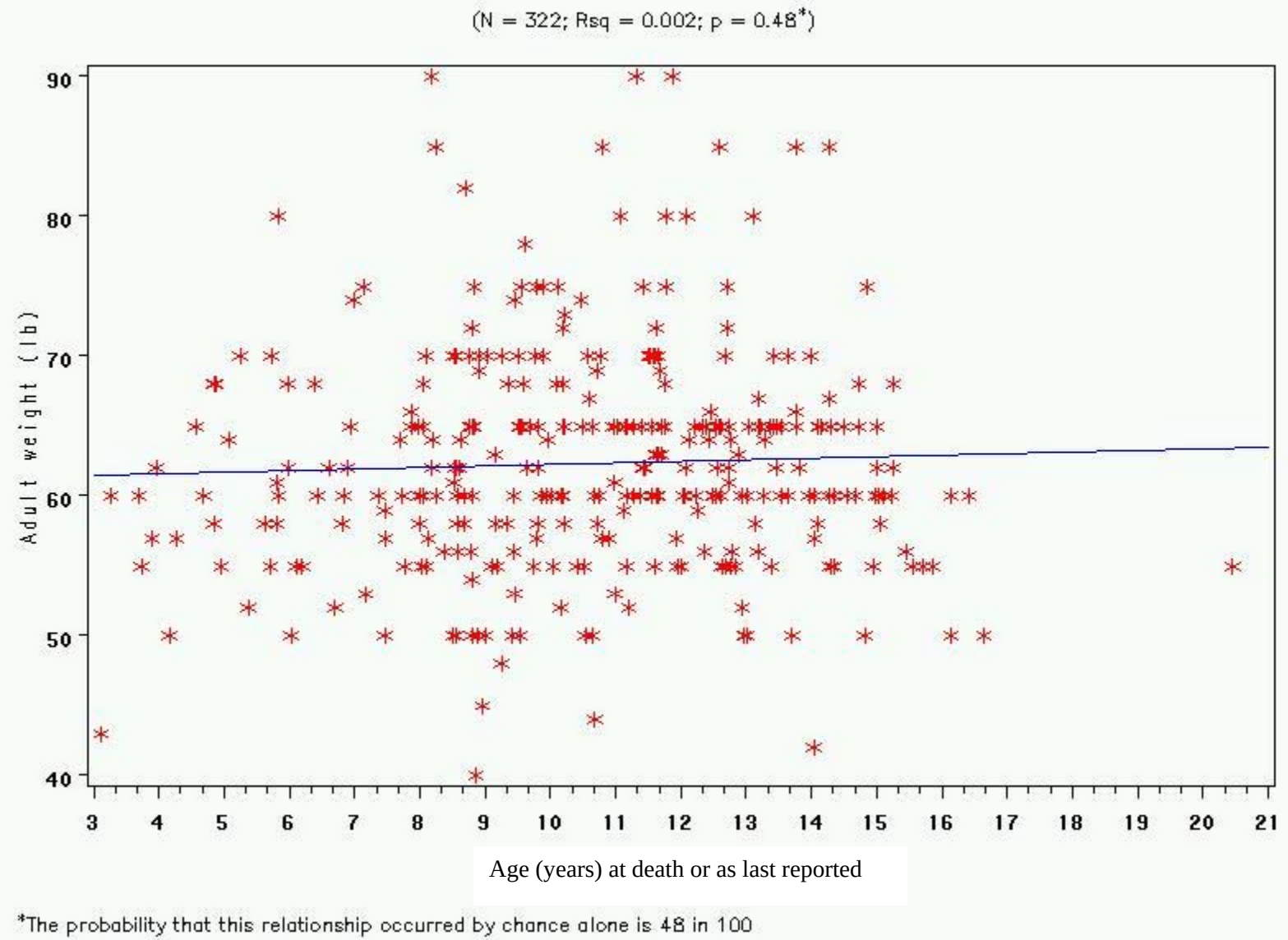


Figure 6—Relationship of Body Weight to Age in Irish Setter Dogs

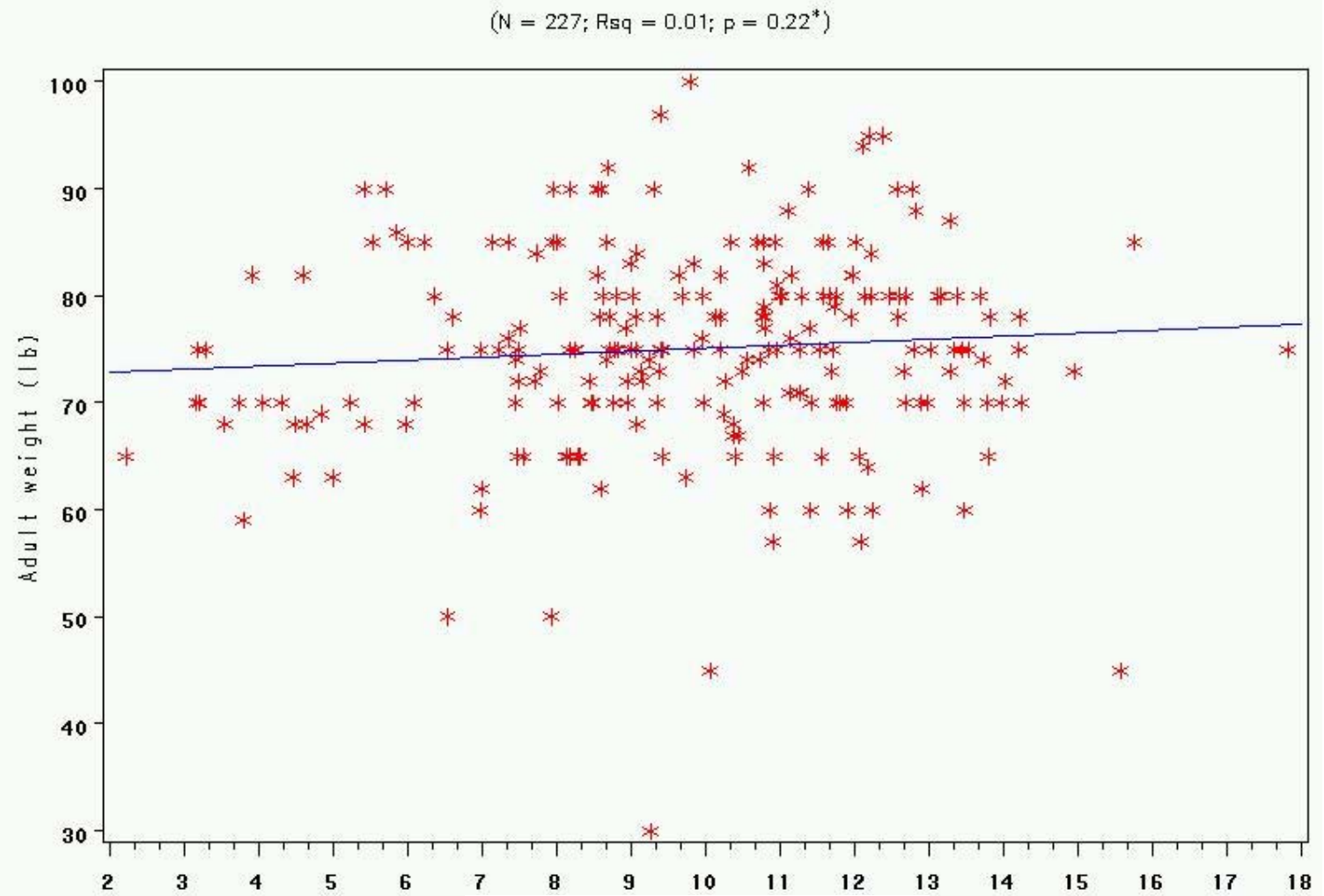


Table 16—Rate of Growth, Body Condition, and Bone Type

	Lifestage			
	Puppy		Adult	
	N	%	N	%
Growth rate as puppy				
Slow	94	18.8	--	--
Average	397	79.4	--	--
Maximum	9	1.8	--	--
Body condition				
Bitches				
Underweight	38	12.0	12	3.7
Average	272	85.8	290	88.2
Overweight	7	2.2	27	8.2
Dogs				
Underweight	34	15.5	22	9.5
Average	183	83.2	201	85.6
Overweight	3	1.4	9	3.9
Bone type				
Bitches				
Small	--	--	40	12.2
Medium	--	--	230	69.9
Large	--	--	59	17.9
Dogs				
Small	--	--	10	4.3
Medium	--	--	144	61.8
Large	--	--	79	33.9

Table 17—Owner's Assessment of Growth and Body Condition in Irish Setter Bitches [a]

	Adult weight[b] (lb)		Adult height[b] (in)		Adult Weight/Height Index	
	N	Mean±SD	N	Mean±SD	N	Mean±SD
Desired puppy growth rate						
Slow	54	61.0±8.0	53	25.4±1.0	53	2.4±0.3
Average	231	62.3±7.4	227	25.6±1.0	227	2.4±0.2
Maximum	4	67.0±4.8	4	25.3±1.0	4	2.7±0.2
Puppy body condition						
Underweight	38	60.2±7.2	38	25.4±1.2	38	2.4±0.3
Average	268	62.4±7.9	261	25.5±1.0	261	2.4±0.2
Overweight	7	69.7±10.0	7	26.0±1.1	7	2.7±0.4
Adult body condition						
Underweight	12	55.3±6.7	12	25.9±1.3	12	2.1±0.3
Average	283	61.8±7.3	277	25.4±1.0	277	2.4±0.2
Overweight	27	71.4±9.4	25	25.9±1.1	25	2.7±0.3
Adult bone structure						
Small	39	55.3±5.5	39	24.9±0.9	39	2.2±0.2
Medium	222	61.7±6.6	217	25.4±0.9	217	2.4±0.2
Large	59	69.9±8.1	56	26.2±1.2	56	2.6±0.2

[a] Numbers do not total to 331 bitches due to missing information
[b] Weight and height as of December 31, 2003, or as last reported.

Table 18—Owner's Assessment of Growth and Body Condition in Irish Setter Dogs [a]

	Adult weight[b] (lb)		Adult height[b] (in)		Adult weight/height Index	
	N	Mean±SD	N	Mean±SD	N	Mean±SD
Desired puppy growth rate						
Slow	35	73.9±7.3	35	27.5±1.2	35	2.7±0.2
Average	162	75.4±9.4	155	27.5±1.4	154	2.7±0.3
Maximum	4	78.5±14.5	4	28.8±1.9	4	2.7±0.4
Puppy body condition						
Underweight	31	71.7±8.9	32	27.4±1.7	31	2.6±0.3
Average	179	75.6±9.2	168	27.6±1.6	168	2.7±0.3
Overweight	3	78.3±2.9	3	26.8±1.6	3	2.9±0.2
Adult body condition						
Underweight	20	68.8±5.5	21	27.6±1.6	20	2.5±0.2
Average	198	75.6±9.5	186	27.6±1.6	186	2.7±0.3
Overweight	9	76.9±10.5	9	26.6±2.3	9	2.9±0.4
Adult bone structure						
Small	9	67.1±9.7	9	27.2±1.7	9	2.5±0.3
Medium	139	72.6±7.8	132	27.2±1.6	131	2.7±0.3
Large	78	80.7±8.9	74	28.1±1.6	74	2.9±0.3

[a] Numbers do not total 234 dogs due to missing information
[b] Weight and height as of December 31, 2003, or as last reported

Table 19—Reproductive Status for 565 Irish Setters in 2003 Health Survey

	N	(%)	Age at neutering, years		
			Median	Mean	± SD
Neutered					
Bitches	212	(64	6.6	6.1	3.2
Dogs	74	(31	5.1	4.8	3.4
Unknown / missing	8	(1.4			

Figure 7—Distribution of adult body weight by gender and neuter status

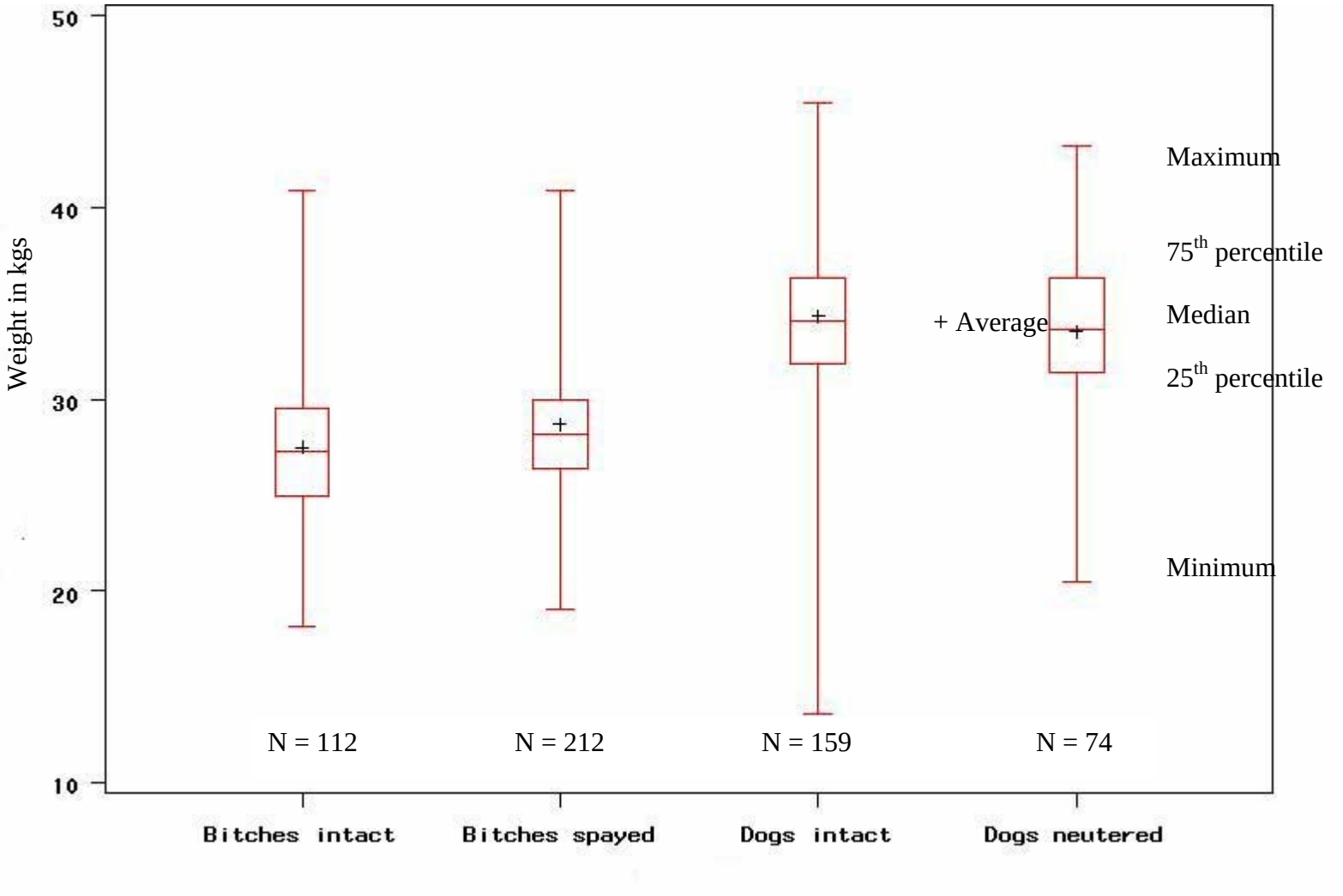


Figure 8—Distribution of adult body weight by age and gender

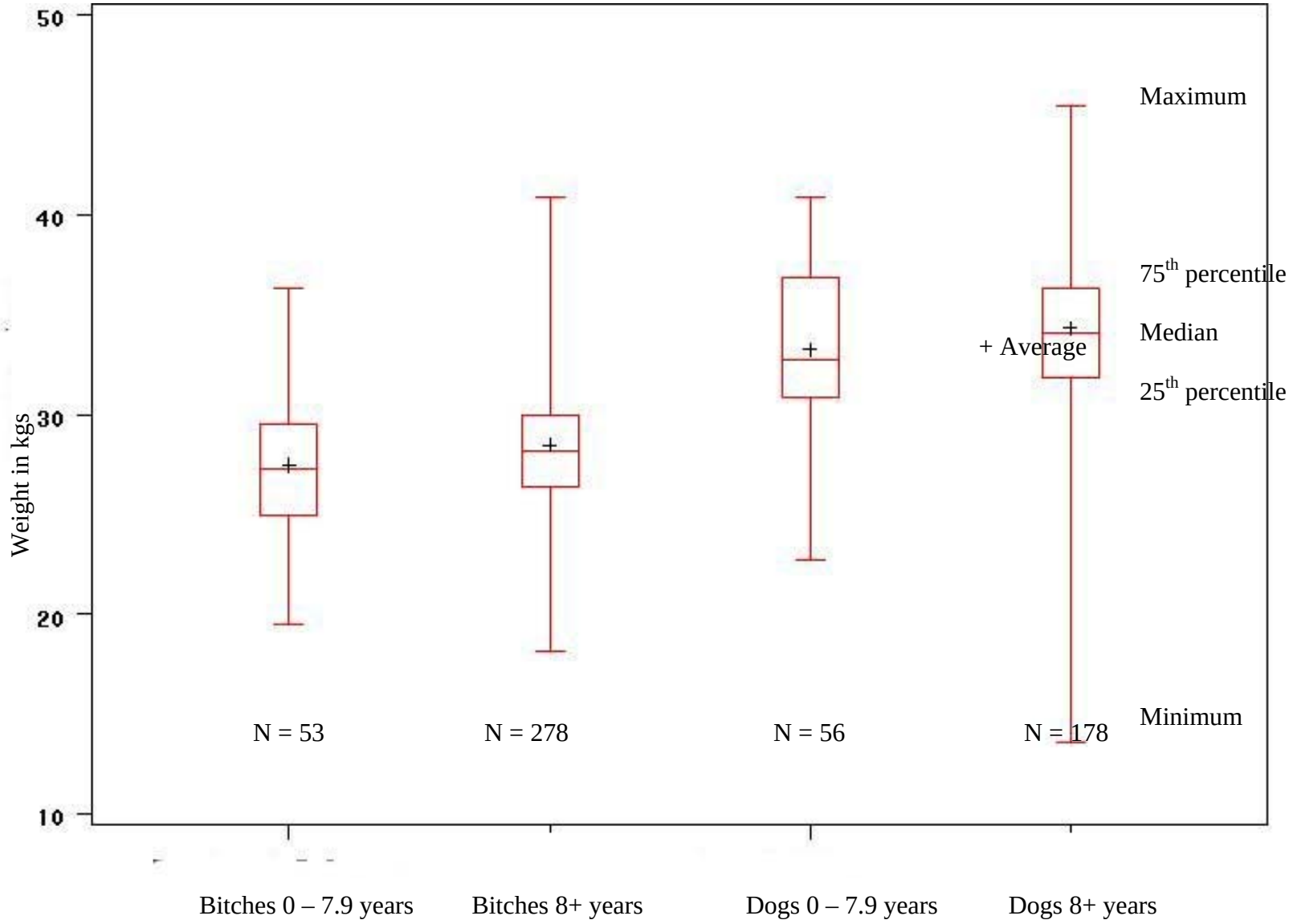


Figure 9—Distribution of adult body weight by age, gender and neuter status

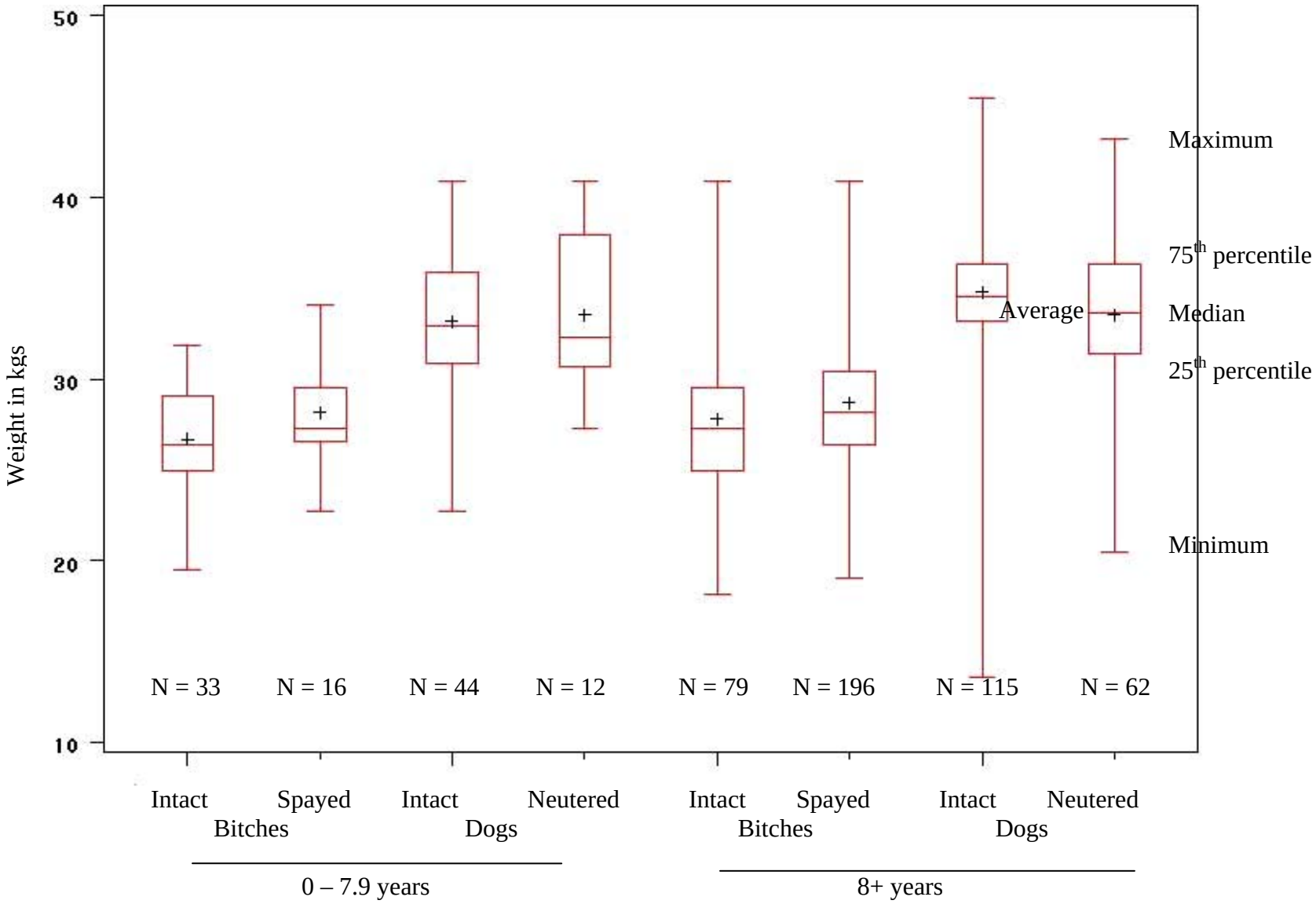


Table 20—Reproductive Performance of 331 Irish Setter Bitches Participating in 2003 Survey

Number of bitches that whelped	Total no. litters	Bitches				
		N	%			
	0	173	52.3			
	1	91	27.5			
	2	46	13.9			
	3	15	4.5			
	4	6	1.8			
Bitches	**Litter order**	**Bitches N**		**Median**	**Mean**	**±SD**
				Age at whelp (years)		
	1	162		4.7	4.8	1.8
	2	70		6.0	5.9	1.6
	3	22		7.4	7.3	2.0
	4	6		7.1	7.5	1.2
Live born	**Litter order**	**Litters N**			**Pups per litter**	
	1	162		7.0	6.8	3.7
	2	70		7.5	7.2	3.6
	3	22		8.0	7.2	3.8
	4	6		7.0	5.5	4.2
Stillborn	**Litter order**	**Litters N**			**Pups per litter**	
	1	157		0.0	0.9	1.6
	2	66		0.0	0.9	1.5
	3	21		0.0	0.3	0.6
	4	6		0.5	0.8	1.2
Euthanized	**Litter order**	**Litters N**			**Pups per litter**	
	1	143		0.0	0.2	0.9
	2	59		0.0	0.2	0.4
	3	20		0.0	0.3	0.9
	4	5		0.0	0.0	0.0
Weaned	**Litter order**	**Litters N**			**Pups per litter**	
	1	158		6.0	6.4	3.7
	2	70		7.0	6.7	3.5
	3	22		7.0	6.9	3.8
	4	6		5.5	5.0	3.8

Table 21—Reproductive Performance by Method of Insemination

Method of Insemination	Litter order	Number of litters	Number live born pups per litter		
			Median	Mean	±SD
Natural					
	1	126	7.0	7.2	3.6
	2	54	8.0	7.6	3.5
	3	16	8.5	7.6	4.1
	4	3	9.0	6.3	4.6
Artificial—Fresh semen					
	1	25	5.0	5.5	3.8
	2	10	6.5	6.1	3.1
	3	4	7.5	6.5	3.1
	4	1	5.0	5.0	--
Artificial—Chilled semen					
	1	6	8.0	7.5	3.3
	2	3	0.0	1.0	1.7
	3	1	6.0	6.0	--
	4	0	--	--	--
Artificial—Frozen semen					
	1	5	1.0	1.8	1.3
	2	2	11.5	11.5	0.7
	3	0	--	--	--
	4	1	0.0	0.0	--
Unknown					
	1	0	--	--	--
	2	1	7.0	7.0	--
	3	1	5.0	5.0	--
	4	1	9.0	9.0	--

Table 22—Reproductive Performance by Method of Insemination

Method of insemination	Number of bitches	Number of litters	Number of pups per litter		
			Median	Mean	±SD
Natural	131	199			
Live born			7.5	7.4	3.2
Stillborn			0.5	0.9	1.4
Euthanized			0.0	0.2	0.8
Weaned			7.3	6.8	3.2
Artificial—Fresh semen	33	40			
Live born			5.0	5.7	3.2
Stillborn			0.7	0.8	0.8
Euthanized			0.0	0.1	0.4
Weaned			5.0	5.3	3.5
Artificial—Chilled semen	9	10			
Live born			6.5	5.4	3.5
Stillborn			1.0	0.7	0.7
Euthanized			0.0	0.0	0.0
Weaned			7.0	5.8	3.5
Artificial—Frozen semen	8	8			
Live born			1.5	4.0	4.8
Stillborn			0.0	0.3	0.5
Euthanized			0.0	0.0	0.0
Weaned			1.0	3.9	4.9
Unknown	3	3			
Live born			7.0	7.0	2.0
Stillborn			2.0	2.0	1.4
Euthanized			2.0	2.0	2.8
Weaned			6.0	5.3	1.2

Table 23—Comparison of Personality Scores [a] of Irish Setters Participating in 1997 and 2003 Health Surveys

	1997	2003	%
	Mean	Mean	Difference
Personality trait			
Active / energetic	7.3	7.2	-1.4
Aggressive to dogs	2.7	2.5	-7.4
Aggressive to people	1.5	1.4	-6.7
Excitable	5.5	5.9	7.3
Fearful	2.5	--	NA
Fearful of loud noise	--	2.7	NA
Fearful of strange people	--	2.2	NA
Happy	9.0	9.1	1.1
Submissive to dogs	3.6	3.5	-2.8
Submissive to people	5.1	4.4	-13.7
Trainable	8.4	8.6	2.4

[a] Possible scores are 1 – 10 where 1 = never (low)…10 = always (high).

Table 24—Personality Score[a] as Characterized by Owners for Irish Setters Participating in 2003 Survey vs Wirehaired Pointing Griffons, Weimaraners, Bloodhounds, Airedale Terriers, Golden Retrievers and Akitas

	Irish Setters N = 565	Wirehaired Pointing Griffon[b] N = 182	Weimaraner[b] N = 92	Bloodhound[b] N = 117	Airedale Terrier[b] N = 519	Golden Retriever[b] N = 1442	Akita[b] N = 603
	Mean ± (SD)	Mean ± (SD)	Mean ± (SD)	Mean ± (SD)	Mean ± (SD)	Mean ± (SD)	Mean ± (SD)
Personality trait							
Active / energetic	**7.2 (1.8)**	7.9 (1.4)	8.1 (1.6)	7.4 (1.7)	7.4 (1.8)	6.9 (1.9)	6.3 (2.1)
Aggressive to dogs	**2.5 (2.0)**	3.1 (2.1)	3.6 (2.2)	3.3 (2.3)	4.1 (2.6)	2.4 (2.0)	4.9 (2.9)
Aggressive to people	**1.4 (1.2)**	1.9 (1.8)	1.5 (0.9)	1.5 (1.2)	2.0 (1.9)	1.3 (0.9)	2.0 (1.6)
Excitable	**5.9 (2.1)**	6.5 (1.9)	7.2 (2.0)	6.1 (2.0)	6.1 (2.1)	5.6 (2.2)	5.3 (2.3)
Fearful of loud noise	**2.7 (2.5)**	1.9 (1.9)	3.6 (2.5)	3.5 (2.4)	4.6 (3.3)	--	--
Fearful of strange people	**2.2 (2.1)**	2.6 (2.1)	2.9 (1.9)	3.2 (1.8)	1.8 (1.5)	1.5 (1.3)	2.1 (2.0)
Happy	**9.1 (1.2)**	9.2 (1.0)	9.0 (1.4)	8.6 (1.5)	8.8 (1.5)	9.0 (1.3)	8.6 (1.6)
Submissive to dogs	**3.5 (2.5)**	3.4 (2.2)	3.8 (2.4)	4.0 (2.3)	2.5 (2.1)	3.4 (2.5)	2.9 (2.3)
Submissive to people	**4.4 (3.3)**	4.2 (2.9)	4.8 (2.9)	5.2 (3.0)	3.7 (2.7)	4.2 (3.2)	5.3 (3.0)
Trainable	**8.6 (1.6)**	8.6 (1.4)	8.6 (1.4)	7.4 (1.9)	7.8 (1.9)	8.5 (1.7)	7.8 (1.9)

[a] Possible scores are 1 – 10 where 1 = never (low)…10 = always (high).
[b] Based on previous breed health surveys

Section II. Diet and Body Measurements

Table 25—Puppy Diet of 565 Irish Setters

	N	%	Median	Mean	± SD
Puppy food fed as a puppy	307	54.3	--	--	--
Bitches	181	54.7	--	--	--
Dogs	126	53.9	--	--	--
Age in months switched to adult food	337*		9.0	8.9	5.4
Bitches	201		8.0	8.5	4.9
Dogs	136		9.0	9.5	6.1

* Includes 36 owners who did not feed puppy food but started feeding adult food

Table 26—Usual Diet of 565 Adult Irish Setters

Foods fed	Frequency of feeding							
	Daily		Weekly		Monthly		Never	
	N	%	N	%	N	%	N	%
Dry	554	98.1	0	0.0	0	0.0	11	1.9
Canned	316	55.9	28	5.0	6	1.1	215	38.1
Home prepared	149	26.4	33	5.8	10	1.8	373	66.0
Table scraps	124	21.9	81	14.3	20	3.5	340	60.2
Other*	40	7.1	3	0.5	0	0.0	522	92.4

* Includes fresh and frozen raw meats, treats

Table 27—Usual Diet of 460 Senior (>7 Years of Age) Irish Setters

Foods fed	Frequency of feeding							
	Daily		Weekly		Monthly		Never	
	N	%	N	%	N	%	N	%
Dry	432	93.9	1	0.2	0	0.0	27	5.9
Canned	256	55.7	24	5.2	13	2.8	167	36.3
Home prepared	140	30.4	30	6.5	5	1.1	285	62.0
Table scraps	87	18.9	64	13.9	18	3.9	291	63.3
Other*	33	7.2	5	1.1	0	0.0	422	91.7

* Includes fresh and frozen raw meats, treats

Table 28—Number of Meals Fed Daily to Irish Setters

Food type	Number of meals	Adults		Seniors	
		N	%	N	%
Dry		554	100.0	432	100.0
	1	43	7.8	29	6.7
	2	355	64.1	274	63.4
	3	4	0.7	5	1.2
	4	0	0.0	2	0.5
	Unspecified	152	27.4	122	28.2
Canned		315	100.0	256	100.0
	1	66	21.0	55	21.5
	2	154	48.9	122	47.5
	3	0	0.0	2	0.8
	Unspecified	95	30.2	77	30.1
Home prepared		149	100.0	140	100.0
	1	33	22.2	23	16.4
	2	67	45.0	71	50.7
	3	1	0.7	2	1.4
	Unspecified	48	32.2	44	31.4
Table scraps		124	100.0	87	100.0
	1	53	42.7	32	36.8
	2	18	14.5	17	19.5
	3	4	3.2	1	1.1
	Unspecified	49	39.5	37	42.5
Other		40	100.0	33	100.0
	1	15	37.5	14	42.4
	2	18	45.0	15	45.5
	3	1	2.5	0	0.0
	5	1	2.5	1	3.0
	Unspecified	5	12.5	3	9.1

Table 29—The Brands of Dry Foods Fed

Brand name*	N	%	Rank
BilJac	2	0.5	
Breeders' Choice	2	0.5	
California Natural	4	1.0	
Canidae	9	2.3	
Cornucopia	1	0.3	
Cycle	1	0.3	
Dad's	1	0.3	
Diamond	2	0.5	
Eagle	13	3.3	
Eukanuba	66	16.7	2
Flint River Ranch	13	3.3	
Hill's Science Diet	18	4.6	
Iams	38	9.6	4
Innova	10	2.5	
Innovative Veterinary Diet	4	1.0	
Kal Kan	1	0.3	
Ken'L Biscuit	2	0.5	
Lamaderm	1	0.3	
Maxximum	3	0.8	
Natural Balance	1	0.3	
Natural Choice	5	1.3	
Natural Life	1	0.3	
Nature's Recipe	13	3.3	
Nutra	4	1.0	
Nutro	70	17.7	1
Pedigree	14	3.5	
Pinnacle	6	1.5	
Precise	6	1.5	
Pro Plan	40	10.1	3
Purina	20	5.1	5
Sensible Choice	9	2.3	
Show Bound	1	0.3	
Solid Gold	7	1.8	
Wellness	3	0.8	
Wysong	4	1.0	
Total	395	100.0	

* Brand information not reported for 159 Irish Setters that were fed dry food

Table 30—The Brands of Canned Foods Fed

Brand name*	N	%	Rank
	252	100.0	
Albertson's	5	2.0	
Alpo	10	4.0	4
Authority	2	0.8	
Award Gourmet	1	0.4	
Breeders Choice	1	0.4	
California Natural	3	1.2	
Canidae	3	1.2	
Cornucopia	1	0.4	
Eagle	3	1.2	
Eukanuba	6	2.4	
Evolve	1	0.4	
Iams	21	8.3	2
Innova	6	2.4	
Innovative Veterinary Diet	5	2.0	
John Burns	1	0.4	
Kal-Kan	9	3.6	5
Mighty Dog	3	1.2	
Nature's Recipe	4	1.6	
Neura	5	2.0	
Nutra	1	0.4	
Nutro	4	1.6	
Old Mother Hubbard	2	0.8	
Pedigree	115	45.6	1
President's Choice	3	1.2	
Red Barn	1	0.4	
Safeway	1	0.4	
Science Diet	12	4.8	3
Solid Gold	2	0.8	
Strongheart	1	0.4	
Tripett	4	1.6	
Tyrell	9	3.6	5
Wellness	2	0.8	
Whole Food 365	2	0.8	
Various brands	3	1.2	
Total	252	100.0	

* Brand information not reported for 81 Irish Setters that were fed canned food

Table 31—First Ingredients Listed on the Label of Commercial Foods Fed Daily

Foods fed	N	%
Dry*	357	100.0
White meat	206	57.7
Red meat	103	28.9
Plant origin	43	12.0
Fish or fish meal	5	1.4
Canned†	224	100.0
Red meat	102	42.0
White meat	98	40.3
Meat by products	18	7.4
Plant origin	6	2.5

* Label ingredients missing for 197 Irish Setters that were fed dry food
† Label ingredients missing for 109 Irish Setters that were fed canned food

Table 32—Most Commonly Fed Home Prepared Foods[a]

	First		Second	
	N	%	N	%
White meat	126	37.3	68	23.6
Red meat	67	19.8	51	17.7
Vegetables	56	16.6	64	22.2
Yogurt	36	10.7	24	8.3
Eggs	18	5.3	14	4.9
Dairy	12	3.6	9	3.1
Pasta	7	2.1	5	1.7
Bones	7	2.1	22	7.6
Other	5	1.5	10	3.5
Other meat	2	0.6	1	0.4
Fish	1	0.3	8	2.8
Fruit	1	0.3	12	4.2
Total	338	100.0	288	100.0

[a] Thirty percent of the owners feeding meat feed it raw

Table 33—Usual Supplements Given to 565 Adults

Supplements	Daily		Weekly		Monthly		Never	
	N	%	N	%	N	%	N	%
Vitamins	267	47.3	27	4.8	4	0.7	267	47.3
Minerals	136	24.1	12	2.1	1	0.2	416	73.6
Cartilage / joint	97	17.2	1	0.2	0	0.0	467	82.7
Food supplements	185	32.7	6	1.1	1	0.2	373	66.0
Other	12	2.1	0	0.0	0	0.0	553	97.9

Table 34—Usual Supplements Given to 460 Seniors (>7 Years of Age)

Supplements	Daily		Weekly		Monthly		Never	
	N	%	N	%	N	%	N	%
Vitamins	230	50.0	17	3.7	2	0.4	211	45.9
Minerals	115	25.0	8	1.7	1	0.2	336	73.0
Cartilage / joint	202	43.9	3	0.7	4	0.9	251	54.6
Food supplements	167	36.3	4	0.9	0	0.0	289	62.8
Other	27	5.9	0	0.0	0	0.0	433	94.1

Table 35—Daily Diet Compared with Body Condition of Adults

Type of Diet	Body Condition[a]					
	Underweight		Average		Overweight	
	N	%	N	%	N	%
Dry						
Yes	34	100.0	480	97.8	36	100.0
No	0	0.0	11	2.2	0	0.0
Canned						
Yes	20	58.8	269	54.8	24	66.7
No	14	41.2	222	45.2	12	33.3
Home prepared						
Yes	13	38.2	122	24.8	12	33.3
No	21	61.8	369	75.2	24	66.7
Table scraps						
Yes	13	38.2	100	20.4	10	27.8
No	21	61.8	391	79.6	26	72.2

[a] Body condition missing for 4 Irish Setters

Table 36—Daily Diet Compared with Weight and Height in Adult Bitches

Type of Diet	Weight[a]			Height[a]			Weight/Height		
	N	Mean ± (SD)		N	Mean ± (SD)		N	Mean ± (SD)	
Dry									
Yes	318	62.3	(8.1)	312	25.5	(1.0)	312	2.4	(0.3)
No	4	64.3	(4.3)	2	26.3	(0.4)	2	2.5	(0.2)
Canned									
Yes	177	63.5	(8.3)	172	25.6	(1.0)	172	2.5	(0.3)
No	145	61.0	(7.4)	142	25.4	(0.9)	142	2.4	(0.3)
Home prepared									
Yes	75	63.8	(7.6)	74	25.6	(0.9)	74	2.5	(0.3)
No	247	61.9	(8.1)	240	25.5	(1.1)	240	2.4	(0.3)
Table scraps									
Yes	69	62.7	(9.1)	68	25.6	(1.0)	68	2.4	(0.3)
No	253	62.2	(7.7)	246	25.5	(1.0)	246	2.4	(0.2)

[a] Weight in lbs and height in inches as of December 31, 2003 or as last reported

Table 37—Daily Diet Compared with Weight and Height in Adult Dogs

Type of Diet	Weight[a]			Height[a]			Weight/Height		
	N	Mean ± (SD)		N	Mean ± (SD)		N	Mean ± (SD)	
Dry									
Yes	221	74.9	(9.5)	210	27.5	(1.6)	209	2.7	(0.3)
No	6	78.2	(7.1)	6	27.8	(1.2)	6	2.8	(0.2)
Canned									
Yes	129	74.4	(10.0)	122	27.6	(1.5)	122	2.7	(0.3)
No	98	75.9	(8.5)	94	27.4	(1.7)	93	2.8	(0.3)
Home prepared									
Yes	64	76.3	(8.3)	63	27.6	(1.2)	62	2.8	(0.3)
No	163	74.5	(9.8)	153	27.5	(1.8)	153	2.7	(0.3)
Table scraps									
Yes	49	75.3	(8.8)	48	27.7	(1.9)	48	2.7	(0.3)
No	178	74.9	(9.6)	168	27.5	(1.5)	167	2.7	(0.3)

[a] Weight in lbs and height in inches as of December 31, 2003 or as last reported

Section III. Health and Environmental Management

Table 38—Frequency of Vaccination[a]

Type of vaccines	Yearly		Every 2 years		Every 3 years		Sporadic		Puppy only		Never	
	N	%	N	%	N			%	N	%	N	%
Rabies	105	18.6	82	14.5	346	61.2	11	2.0	7	1.2	4	0.7
Distemper	360	63.7	61	10.8	45	8.0	63	11.2	23	4.1	1	0.2
Parvovirus	359	63.5	61	10.8	41	7.3	63	11.2	28	5.0	1	0.2
Leptospirosis	223	39.5	30	5.3	18	3.2	36	6.4	46	8.1	120	21.2
Lyme disease	69	12.2	7	1.2	4	0.7	26	4.6	10	1.8	298	52.7
Kennel cough	246	43.5	10	1.8	8	1.4	67	11.9	21	3.7	133	23.5
Coronavirus	182	32.2	16	2.8	8	1.4	41	7.3	44	7.8	162	28.7
Other (e.g., Adenovirus, Giardia)	15	2.7	7	1.2	2	0.4	0	0.0	2	0.4	249	44.1

[a] Numbers may not add to 565 Irish Setters because of missing information.

Table 39—Frequency of Routine Deworming

	Yearly		Sporadic		Based on positive fecal tests		Never[a]	
	N	%	N	%	N	%	N	%
Routine deworming[a]	41	7.5	124	22.6	281	51.1	104	18.9

[a] Information on routine deworming missing on 15 Irish Setters.

Table 40—Frequency of Heartworm Prevention

	Regular		Sporadic		Never	
	N	%	N	%	N	%
Heartworm prevention[a]	403	72.6	67	12.1	85	15.3
	Year-round		Spring to fall			
	N	%	N	%		
Pattern of regular heartworm prevention[b]	214	53.1	188	46.7		
	Daily		Monthly		Every 6 months	
	N	%	N	%	N	%
Frequency of regular heartworm prevention[c]	35	8.7	355	88.1	10	2.5

[a] Heartworm prevention information missing for 10 Irish Setters.
[b] Pattern of regular heartworm prevention missing for 1 Irish Setter
[c] Frequency of regular heartworm prevention missing for 3 Irish Setters

Table 41—State of Residence of Irish Setters That Did Not Receive Heartworm Preventative

State or country of residence	N	%
United States		
California	38	44.7
Washington	12	14.1
Maryland	5	5.9
Arizona	3	3.5
New York	3	3.5
Oregon	3	3.5
Colorado	2	2.4
Michigan	2	2.4
Delaware	1	1.2
Georgia	1	1.2
Idaho	1	1.2
Montana	1	1.2
New Jersey	1	1.2
Nevada	1	1.2
Canada	5	5.3
Netherlands	3	3.2
Missing	3	3.5
Total	85	100.0

Table 42—Screening Tests Performed

	N[a]	%
Hip dysplasia		
Yes	445	79.6
No	114	20.4
Progressive retinal atrophy		
Yes	264	47.9
No	287	51.8
Canine Leukocyte Adhesion Disorder		
Yes	33	6.2
No	503	93.8
Thyroid function		
Yes	402	72.4
No	153	27.6

[a] Numbers may not add to 565 Irish Setters due to missing information

Table 43—Gastropexy procedures performed

	N[a]	%
Has dog ever had gastropexy?		
Yes	78	13.8
Therapeutic	67	11.9
Prophylactic	10	1.8
No	487	86.2

[a] Information missing on one Irish Setter that had gastropexy

Table 44—Frequency of Exposure to Flea/Tick Products

Type of tick / flea product	Never[a]		Sporadic		Regular			
					Seasonal		Year-round	
	N	(%)	N	(%)	N	(%)	N	(%)
Dips	406	(71.9)	84	(14.9)	15	(2.7)	8	(1.4)
Drops on skin	213	(37.7)	167	(29.6)	127	(22.5)	24	(4.3)
Pills	435	(77.0)	28	(5.0)	24	(4.3)	15	(2.7)
Shampoos	315	(55.8)	170	(30.1)	25	(4.4)	4	(0.7)
Collars	460	(81.4)	30	(5.3)	11	(2.0)	3	(0.5)
Sprays	365	(64.6)	136	(24.1)	12	(2.1)	1	(0.2)
Other	430	(76.1)	8	(1.4)	15	(2.7)	0	(0.0)

[a] Numbers may not add up to 565 Irish Setters due to missing information .

Table 45—Frequency of Exposure to Lawn Chemicals

	N[a]	%
Frequency of contact with any lawn chemical		
Never	294	45.4
Sporadic	162	29.5
Regular	93	16.9
Seasonal	79	14.4
Year-round	14	2.6
Frequency of chemical application to yard		
Year-round	29	5.3
Seasonal	102	18.5
Sporadic	122	22.2
Never	297	54.0
Amount of time elapsed before dog allowed on yard treated with lawn products		
≤12 hours	122	22.8
13 - 24 hours	87	16.3
> 24 hours	37	6.9
Lawn product never used	288	53.9
Walk dog through chemically treated areas		
Yes	21	3.8
No	535	96.2

[a] Numbers may not add to 565 Irish Setters due to missing information

See Table 65 for relationship between exposure to lawn chemicals and health disorders

Section IV. Health Related Information

Table 46—Prevalence of Veterinary-Confirmed Health Disorders by Type and System Involved

Disorders	N	% of reports in category	% of 565 Irish Setters
Malignant neoplasm by type			
Osteosarcoma	26	19.0	4.6
Melanoma	13	9.5	2.3
Adenocarcinoma	11	8.0	1.9
Hemangiosarcoma	9	6.6	1.6
Lymphoma	5	3.6	0.9
Mast cell	3	2.2	0.5
Fibrosarcoma	3	2.2	0.5
Squamous cell	3	2.2	0.5
Mesothelioma	1	0.7	0.2
Neuroblastoma	1	0.7	0.2
Chondrosarcoma	1	0.7	0.2
Interstitial cell	1	0.7	0.2
Liposarcoma	1	0.7	0.2
Carcinoma, unspecified	12	8.8	2.1
Sarcoma, unspecified	4	2.9	0.7
Other	12	8.8	2.1
Unknown	31	22.6	5.5
Total incidents	**137**		
Total Irish Setters	**121**		**21.4**
Malignant neoplasm by location			
Limbs / digits	21	15.3	3.7
Mammary	17	12.4	3.0
Bone	15	10.9	2.7
Mouth	12	8.8	2.1
Nasal cavity	11	8.0	1.9
Spleen	10	7.3	1.8
Lung	5	3.6	0.9
Muscle	4	2.9	0.7
Liver	4	2.9	0.7
Testes	4	2.9	0.4
Intestine	3	2.2	0.5
Pancreas	3	2.2	0.5
Skin	2	1.5	0.4
Bladder	2	1.5	0.4
Lymph nodes	2	1.5	0.4
Ovary	1	0.7	0.2
Brain	1	0.7	0.2
Kidney	1	0.7	0.2

Table 46—Prevalence of Veterinary-Confirmed Health Disorders by Type and System Involved (Cont'd)—Page 2

Disorders	N	% of reports in category	% of 565 Irish Setters
Malignant neoplasm by location (cont'd)			
Prostate	1	0.7	0.2
Nerve	1	0.7	0.2
Other	15	10.9	2.7
Unknown / missing	2	1.5	0.4
Total incidents	**137**		
Total Irish Setters	**121**		**21.4**
Non-malignant neoplasm by type			
Lipoma	52	33.1	9.2
Cyst*	36	22.9	6.4
Papilloma	19	12.1	3.4
Histiocytoma	10	6.4	1.8
Polyp	6	3.8	1.1
Adenoma	4	2.5	0.7
Other	8	5.1	1.4
Unknown / unspecified	19	12.1	3.4
Total incidents	**157**		
Total Irish Setters	**120**		**21.2**
Non-malignant neoplasm by location			
Skin	52	33.1	9.2
Limb / digits	22	14.0	3.9
Mammary	19	12.1	3.4
Eye	11	7.0	1.9
Muscle	3	1.9	0.5
Lymph nodes	2	1.3	0.4
Testes	2	1.3	0.4
Spleen	2	1.3	0.4
Bone	2	1.3	0.4
Mouth	2	1.3	0.4
Lung	1	0.6	0.2
Ovary	1	0.6	0.2
Prostate	1	0.6	0.2
Other	28	17.8	5.0
Unknown / unspecified	9	5.7	1.6
Total incidents	**157**		
Total Irish Setters	**120**		**21.2**

*Cysts are not considered neoplasms; however, they have been included in this section as many owners provide information about them in this section.

Table 46—Prevalence of Veterinary-Confirmed Health Disorders by Type and System Involved (Cont'd)—Page 3

Disorders	N	% of reports in category	% of 565 Irish Setters
Heart & circulation			
Murmurs	13	31.7	2.3
Heart failure-unknown cause	10	24.4	1.8
Cardiomyopathy	7	17.1	1.2
Heart arrhythmia	4	9.8	0.7
Valve dysfunction	2	4.9	0.4
Heartworm infection	1	2.4	0.2
Persistent right aortic arch	1	2.4	0.2
Subaortic stenosis	1	2.4	0.2
Other	2	4.9	0.4
Total incidents	**41**		
Total Irish Setters	**36**		**6.4**
Allergies			
Allergic dermatitis due to:			
Food	36	30.5	6.4
Fleas	30	25.4	5.3
Inhaled allergens	26	22.0	4.6
Insect bite allergy	14	11.9	2.5
Drug allergy	5	4.2	0.9
Anesthesia allergy	1	0.8	0.2
Other	6	5.1	1.1
Total incidents	**118**		
Total Irish Setters	**89**		**15.8**
Endocrine			
Hypothyroid	117	73.6	20.7
Pancreatitis	14	8.8	2.5
Diabetes mellitus	11	6.9	2.0
Hyperthyroid	9	5.7	1.6
Cushing's (hyperadrenal)	7	4.4	1.2
Addison's (hypoadrenal)	1	0.6	0.2
Total incidents	**159**		
Total Irish Setters	**149**		**26.4**

Table 46—Prevalence of Veterinary-Confirmed Health Disorders by Type and System Involved (Cont'd)—Page 4

Disorders	N	% of reports in category	% of 565 Irish Setters
Digestive tract			
Bloat			
With torsion	54	24.5	9.6
Without torsion	15	6.8	2.7
Torsion without bloat	3	1.4	0.5
Irritable bowel syndrome	42	19.1	7.4
Gastritis	19	8.6	3.4
Colitis	19	8.6	3.4
Excessive vomiting	14	6.4	2.5
Excessive diarrhea	13	5.9	2.3
Megaesophagus	9	4.1	1.6
Foreign body	9	4.1	1.6
Malabsorbtion	6	2.7	1.1
Anal / perianal fistula	5	2.3	0.9
Excessive flatulence	4	1.8	0.7
Motion sickness	1	0.5	0.2
Other	7	3.2	1.2
Total incidents	**220**		
Total Irish Setters	**155**		**27.4**
Blood disorders			
Thrombocytopenia	4	44.4	0.7
Autoimmune hemolytic anemia	3	33.3	0.5
Chronic anemia	1	11.1	0.2
Low platelets	1	11.1	0.2
Total incidents	**9**		
Total Irish Setters	**9**		**1.6**
Urinary tract / renal			
Bladder infections	38	40.4	6.7
Urinary incontinence	28	29.8	5.0
Kidney failure	17	18.1	3.0
Kidney disease	7	7.4	1.2
Bladder stones	1	1.1	0.2
Other	3	3.2	0.5
Total incidents	**94**		
Total Irish Setters	**82**		**14.5**

Table 46—Prevalence of Veterinary-Confirmed Health Disorders by Type and System Involved (Cont'd)—Page 5

Disorders	N	% of reports in category	% of 565 Irish Setters
Neurological			
Seizures of unknown origin	30	46.2	5.3
Nerve degeneration	11	16.9	2.0
Wobbler syndrome	4	6.2	0.7
Dementia (senility)	4	6.2	0.7
Seizures of known origin	3	4.6	0.5
Vestibular disease	3	4.6	0.5
Tremors (generalized)	1	1.5	0.2
Head tilt	1	1.5	0.2
Myasthenia gravis	1	1.5	0.2
Other	7	10.8	1.2
Total incidents	**65**		
Total Irish Setters	**59**		**10.4**
Musculoskeletal			
Spondylosis	81	28.1	14.3
Arthritis	80	27.8	14.2
Hip dysplasia	41	14.2	7.3
Hypertrophic osteodystrophy (HOD)	28	9.7	5.0
Degenerative disk disease	20	6.9	3.5
Osteochondritis dissecans	12	4.2	2.1
Eosinophilic panosteitis	6	2.1	1.1
Elbow dysplasia	4	1.4	0.7
Anterior cruciate ligament tear	4	1.4	0.7
Other	12	4.2	2.1
Total incidents	**288**		
Total Irish Setters	**220**		**38.9**
Eye			
Cataracts	30	41.7	5.3
Entropion	12	16.7	2.1
Injury	11	15.3	2.0
Ectropion	4	5.6	0.7
Glaucoma	3	4.2	0.5
Cherry Eye	2	2.8	0.4
Blindness	1	1.4	0.2
Corneal dystrophy	1	1.4	0.2
Prolapsed third eyelid	1	1.4	0.2
Distichiasis	1	1.4	0.2

Table 46—Prevalence of Veterinary-Confirmed Health Disorders by Type and System Involved (Cont'd)—Page 6

Disorders	N	% of reports in category	% of 565 Irish Setters
Eye (cont'd)			
Other	6	8.3	1.1
Total incidents	**72**		
Total Irish Setters	**67**		**11.9**
Reproductive (female)			% of 331 bitches
Chronic false pregnancy	24	22.6	7.3
Pyometra	23	21.7	7.0
Difficult whelping	12	11.3	3.6
Irregular heat cycles	11	10.4	3.3
Mastitis	8	7.5	2.4
Infertility	6	5.7	1.8
Failure to carry to term	5	4.7	1.5
Uterine inertia	5	4.7	1.5
Malformed puppies	3	2.8	0.9
Insufficient milk	1	0.9	0.3
Poor mothering instinct	1	0.9	0.3
Other	7	6.6	2.1
Total incidents	**106**		
Total Irish Setters	**84**		**25.4**
Reproductive (male)			% of 234 dogs
Infertility	14	25.0	6.0
Enlarged prostate	14	25.0	6.0
Abnormal semen	11	19.6	4.7
Testicular atrophy	9	16.1	3.9
Cryptorchidism unilateral	4	7.1	1.7
Lack of libido	2	3.6	0.9
Other	2	3.6	0.9
Total incidents	**56**		
Total Irish Setters	**37**		**15.8**

Table 46—Prevalence of Veterinary-Confirmed Health Disorders by Type and System Involved (Cont'd)—Page 7

Disorders	N	% of reports in category	% of 565 Irish Setters
Skin / coat			
Dull, dry coat	49	28.5	8.7
Sebaceous cysts	48	27.9	8.5
Lick granuloma	22	12.8	3.9
Hot spots	19	11.0	3.4
Demodectic mange	9	5.2	1.6
Staphylococcal infection	5	2.9	0.9
Bacterial infection / pyoderma	3	1.7	0.5
Seborrhea diagnosed	2	1.2	0.4
Pigment abnormalities	2	1.2	0.4
Pemphigus foliaceus	2	1.2	0.4
Sebaceous adenitis	1	0.6	0.2
Sarcoptic mange	1	0.6	0.2
Other	9	5.2	1.6
Total incidents	**172**		
Total Irish Setters	**146**		**25.8**
Liver / Pancreas			
Liver disease	5	38.5	0.9
Pancreatic insufficiency	4	30.8	0.7
Liver shunt	2	15.4	0.4
Other	2	15.4	0.4
Total incidents	**13**		
Total Irish Setters	**13**		**2.3**
Respiratory			
Laryngeal paralysis	16	84.2	2.8
Other	3	15.8	0.5
Total incidents	**19**		
Total Irish Setters	**19**		**3.4**
Trauma / accidents			
Laceration requiring stitches	32	31.7	5.7
Fracture	30	29.7	5.3
Lameness requiring treatment	28	27.7	5.0
Other	11	10.9	1.9
Total incidents	**101**		
Total Irish Setters	**92**		**16.3**

Table 46—Prevalence of Veterinary-Confirmed Health Disorders by Type and System Involved (Cont'd)—Page 8

Disorders	N	% of reports in category	% of 565 Irish Setters
Birth Defects			
Umbilical hernia	58	90.6	10.3
Inguinal hernia	2	3.1	0.4
Undershot jaw	2	3.1	0.4
Overshot jaw	1	1.6	0.2
Diaphragmatic hernia	1	1.6	0.2
Total incidents	**64**		
Total Irish Setters	**62**		**11.0**
Bacterial Infections			
Anal sacculitis	40	27.4	7.1
Lyme disease	24	16.4	4.3
Interdigital infection	19	13.0	3.4
Pneumonia	14	9.6	2.5
Cystitis	11	7.5	2.0
Prostatitis	6	4.1	1.1
Tonsillitis	3	2.1	0.5
Rocky mountain spotted fever	2	1.4	0.4
Ehrlichiosis	2	1.4	0.4
Septicemia	1	0.7	0.2
Other	7	4.8	1.2
Total incidents	**146**		
Total Irish Setters	**123**		**21.8**
Viral Infections			
Tracheobronchitis (kennel cough)	21	58.3	3.7
Parvovirus	14	38.9	2.5
Corona virus	1	2.8	0.2
Total incidents	**36**		
Total Irish Setters	**36**		**6.4**

Table 46—Prevalence of Veterinary-Confirmed Health Disorders by Type and System Involved (Cont'd)—Page 9

Disorders	N	% of reports in category	% of 565 Irish Setters
Fungal Infections			
Yeast infection	4	50.0	0.7
Ringworm	3	37.5	0.5
Blastomycosis	1	12.5	0.2
Total incidents	**8**		
Total Irish Setters	**6**		**1.1**
Parasitic Infestations			
Tapeworms	53	23.2	9.4
Roundworms	44	19.3	7.8
Fleas	37	16.2	6.6
Giardia	36	15.8	6.4
Whipworms	26	11.4	4.6
Hookworms	22	9.6	3.9
Coccidia	8	3.5	1.4
Ear mites	2	0.9	0.4
Total incidents	**228**		
Total Irish Setters	**155**		**27.4**
Ear			
Chronic or intermittent infection	176	87.1	31.2
Deafness	15	7.4	2.7
Hematoma	10	5.0	1.8
Wax in lower ear	1	0.5	0.2
Total incidents	**202**		
Total Irish Setters	**192**		**34.0**
Nose and mouth			
Gingivitis	31	49.2	5.5
Pigment change in nose	5	7.9	0.9
Broken / cracked teeth	4	6.3	0.7
Wry mouth	3	4.8	0.5
Underbite	3	4.8	0.5
Missing teeth	3	4.8	0.5
Overbite	2	3.2	0.4
Enamel hypoplasia	2	3.2	0.4
Other	10	15.9	1.8

Table 46—Prevalence of Veterinary-Confirmed Health Disorders by Type and System Involved (Cont'd)—Page 10

Disorders	N	% of reports in category	% of 565 Irish Setters
Nose and mouth (cont'd)			
Total incidents	**63**		
Total Irish Setters	**59**		**10.4**
Behavior problems			
Separation anxiety	6	21.4	1.1
Dominance aggression - people	4	14.3	0.7
Fear aggression	3	10.7	0.5
Obsessive / compulsive barking	3	10.7	0.5
Obsessive / compulsive licking	3	10.7	0.5
Dominance aggression – dogs	2	7.1	0.4
Fearful / shy of people	2	7.1	0.4
Inappropriate urination	2	7.1	0.4
Fear of thunderstorms	2	7.1	0.4
Gunshy	1	3.6	0.2
Total incidents	**28**		
Total Irish Setters	**23**		**4.1**

Table 47—Geographic Distribution of Lyme Disease Cases

State of current residence of Irish Setters diagnosed with Lyme disease*	N	%
New Jersey	7	29.2
New York	4	16.7
Connecticut	3	12.5
Minnesota	3	12.5
Rhode Island	3	12.5
Delaware	1	4.2
Illinois	1	4.2
Massachusetts	1	4.2
Missouri	1	4.2
Total	24	100.0

* Based on owner's current address

Table 48—Auto Accidents and Hospitalizations

	N[a]	%
Auto accident requiring treatment		
Yes	18	3.2
No	542	96.8
Hospitalized for health conditions		
Yes	45	8.3
No	494	91.7

[a] Numbers may not add to 565 Irish Setters due to missing information

Table 49—Suspected Adverse Reactions

	N	%
Any acute adverse vaccine or drug reactions		
Yes[a, b]	56	10.0
No	502	90.0
Age at acute adverse drug reaction		% of 56 Irish Setters with adverse reactions
0 – 3.9	27	48.2
3 – 7.9	18	32.1
8+	9	16.1
Missing	2	3.6

[a] Includes 37 vaccine-, 1 anesthetic- and 14 drug-reactions
[b] 43 (76.8%) veterinary-confirmed

Table 50—Veterinary-confirmed drugs and vaccines to which 43 dogs reacted adversely

	N[a]	%
Drugs		
Keflex	2	4.7
Sulfa based	2	4.7
Clavamox	1	2.3
Tetracycline	1	2.3
Prednisone	1	2.3
Trimethoprim sulfa	1	2.3
Snake antivenom	1	2.3
Arthritis medication	1	2.3
Clomacalm	1	2.3
Dacarbazine	1	2.3
Vaccines		
Rabies	9	20.9
DHLPP/other combinations	7	16.3
Leptospirosis	6	14.0
Bordatella injectable	3	7.0
Lyme disease	3	7.0
Parvovirus	3	7.0

Table 51—Age at First Occurrence of Health Disorders (5 or More Cases)

Health disorder	Affected Irish Setters	Age at first occurrence, years			
	N	Mean	± (SD)	Minimum	Maximum
Malignant neoplasms					
Osteosarcoma	26	9.0	2.3	3.0	12.5
Melanoma	13	8.9	2.3	6.0	13.0
Adenocarcinoma	11	9.2	2.7	2.0	12.5
Hemangiosarcoma	9	10.0	1.9	7.0	13.0
Lymphoma	4	8.6	3.3	5.0	13.0
Carcinoma, unspecified	12	9.1	1.9	5.0	12.0
Non-malignant neoplasms					
Lipoma	51	7.6	2.3	3.0	12.0
Cyst	31	6.3	2.9	1.0	12.0
Papilloma	18	8.8	2.2	5.0	12.0
Histiocytoma	10	8.0	4.4	0.8	12.0
Polyp	6	7.7	2.5	5.0	12.0
Heart & circulation					
Murmurs	13	5.2	3.8	0.3	11.0
Heart failure-unknown cause	10	10.5	3.0	4.0	14.5
Cardiomyopathy	7	9.4	2.0	7.0	13.0
Allergies					
Allergic dermatitis due to:					
Food	34	2.9	2.5	0.3	9.0
Fleas	29	2.4	1.6	0.5	6.0
Inhaled allergens	25	3.1	2.8	0.5	9.0
Insect bite allergy	13	3.3	2.6	1.0	10.0
Drug allergy	4	4.0	2.4	1.0	7.0

Table 51—Age at First Occurrence of Health Disorders (5 or More Cases)—(Cont'd)-Page 2

Health disorder	Affected Irish Setters	Age at first occurrence, years			
	N	Mean	± (SD)	Minimum	Maximum
Endocrine					
Hypothyroid	115	4.6	2.8	0.8	13.0
Pancreatitis	14	7.0	2.9	1.0	12.0
Diabetes mellitus	11	8.0	1.7	5.0	10.0
Hyperthyroid	9	4.2	2.8	1.0	10.0
Cushing's (hyperadrenal)	7	8.1	2.7	3.0	11.0
Gastrointestinal					
Bloat					
With torsion	54	5.9	3.0	1.3	12.0
Without torsion	15	5.9	3.7	0.7	13.0
Irritable bowel syndrome	42	3.1	3.0	0.3	10.0
Gastritis	19	5.4	3.8	0.5	15.0
Colitis	18	4.4	3.5	0.4	12.0
Excessive vomiting	14	3.7	4.1	0.2	11.0
Excessive diarrhea	12	4.2	4.6	0.3	13.0
Megaesophagus	9	9.4	3.9	0.1	14.0
Foreign body	9	5.0	3.9	0.5	11.0
Malabsorption	6	3.9	5.1	0.4	11.0
Anal / perianal fistula	5	5.8	3.1	2.0	9.0
Urinary tract / renal					
Bladder infection	34	5.3	3.7	0.3	13.0
Urinary incontinence	28	9.9	2.8	4.0	14.0
Kidney failure	17	10.0	3.1	0.4	13.0
Kidney disease	6	9.0	2.6	5.0	12.0
Neurological					
Seizures--unknown origin	30	4.6	3.2	0.8	14.0
Nerve degeneration	11	9.3	3.3	1.0	13.0

Table 51—Age at First Occurrence of Health Disorders (5 or More Cases)—(Cont'd)-Page 3

Health disorder	Affected Irish Setters	Age at first occurrence, years			
	N	Mean	± (SD)	Minimum	Maximum
Musculoskeletal					
Spondylosis	80	7.1	3.2	0.0	15.0
Arthritis	80	8.8	2.4	3.0	13.0
Hip dysplasia	37	4.3	3.3	1.0	13.0
Hypertrophic osteodystrophy	28	0.8	1.7	0.2	8.0
Degenerative disk disease	20	9.1	2.4	4.0	12.5
Osteochondritis dissecans	12	1.7	3.0	0.4	11.0
Eosinophilic panosteitis	6	0.7	0.3	0.3	1.0
Eye					
Cataracts	30	10.3	2.7	0.0	14.0
Entropion	11	0.6	0.6	0.0	2.0
Injury	10	4.8	3.3	0.5	10.0
Reproductive (female)					
Chronic false pregnancy	22	2.0	0.9	1.0	4.0
Pyometra	22	6.7	3.2	1.0	12.0
Difficult whelping	11	5.2	0.9	4.0	7.0
Irregular heat cycles	11	2.3	1.9	1.0	7.0
Mastitis	7	4.6	1.7	2.0	7.0
Failure to carry to term	4	4.5	2.9	2.0	7.0
Uterine inertia	5	5.6	1.5	4.0	7.0
Reproductive (male)					
Infertility	14	7.4	3.4	3.0	12.0
Enlarged prostate	14	7.6	3.4	0.4	11.5
Abnormal semen	11	8.0	3.4	3.0	12.0
Testicular atrophy	9	8.5	3.8	0.2	12.0

Table 51—Age at First Occurrence of Health Disorders (5 or More Cases)--(Cont'd)-Page 4

Health disorder	Affected Irish Setters	Age at first occurrence, years			
	N	Mean	± (SD)	Minimum	Maximum
Skin / coat					
Dull, dry coat	48	5.3	3.2	0.5	12.0
Sebaceous cysts	48	7.1	2.7	1.0	12.0
Lick granuloma	22	5.4	2.5	0.5	11.0
Hot spots	19	4.5	2.5	0.5	10.0
Demodectic mange	9	0.8	0.5	0.4	2.0
Staphylococcal infection	7	4.1	2.4	0.2	7.0
Liver / pancreas					
Liver disease	5	10.4	1.9	7.5	12.0
Respiratory					
Laryngeal paralysis	16	10.6	1.5	8.0	13.0
Trauma / accidents					
Laceration requiring stitches	31	5.3	3.0	0.4	12.0
Fracture	29	3.5	3.7	0.2	14.0
Lameness	28	5.6	2.9	0.7	11.0
Birth defects					
Umbilical hernia	56	0.2	0.3	0	1.0
Bacterial infections					
Anal sacculitis	40	4.8	2.7	0.5	12.0
Lyme disease	23	4.9	2.9	0.1	10.0
Interdigital infection	18	4.1	2.3	1.5	10.0
Pneumonia	14	9.7	3.5	0.3	15.0
Cystitis	9	4.2	2.5	0.3	8.0
Prostatitis	6	7.8	1.9	5.0	10.0

Table 51—Age at First Occurrence of Health Disorders (5 or More Cases)--(Cont'd)-Page 5

Health disorder	Affected Irish Setters	Age at first occurrence, years			
	N	Mean	± (SD)	Minimum	Maximum
Viral infections					
Tracheobronchitis	20	2.5	1.4	0.5	6.0
Parvovirus	14	0.6	1.0	0.1	4.0
Parasitic					
Tapeworms	43	3.4	2.9	0.2	12.0
Roundworms	39	1.1	2.1	0.1	10.0
Fleas	35	2.4	2.4	0.2	11.0
Giardia	36	4.3	2.9	0.1	13.0
Whipworms	20	3.8	3.1	0.3	12.0
Hookworms	18	3.0	1.9	0.1	7.0
Coccidia	8	3.7	4.1	0.2	11.0
Ear					
Chronic / intermittent infection	163	3.5	2.8	0.1	13.0
Deafness	15	11.5	1.3	9.0	14.0
Hematoma	10	7.3	3.7	2.0	12.0
Nose & mouth					
Gingivitis	29	6.8	2.8	2.0	13.0
Pigment change in nose	5	3.8	2.3	1.0	7.0
Behavior problems					
Separation anxiety	5	1.7	1.7	0.1	4.0

Table 52—Age at First Occurrence of Health Disorders (5 or More Cases)

Health Disorders	Age in years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All ages	
	N	%	N	%	N	%	N	%	N	%
Malignant neoplasm										
Osteosarcoma	0	0.0	5	19.2	21	80.8	0	0.0	26	100.0
Melanoma	0	0.0	5	38.5	7	53.8	1	7.7	13	100.0
Adenocarcinoma	1	9.1	1	9.1	9	81.8	0	0.0	11	100.0
Hemangiosarcoma	0	0.0	1	11.1	7	77.8	1	11.1	9	100.0
Lymphoma	0	0.0	1	25.0	2	50.0	1	25.0	4	100.0
Carcinoma, unspecified	0	0.0	2	16.7	10	83.3	0	0.0	12	100.0
Non-malignant neoplasm										
Lipoma	0	0.0	30	58.8	21	41.2	0	0.0	51	100.0
Cyst	5	16.1	15	48.4	11	35.5	0	0.0	31	100.0
Papiloma	0	0.0	6	33.3	12	66.7	0	0.0	18	100.0
Histiocytoma	2	20.0	2	20.0	6	60.0	0	0.0	10	100.0
Polyp	0	0.0	3	50.0	3	50.0	0	0.0	6	100.0

Table 52—Age at First Occurrence of Health Disorders (5 or More Cases)--(Cont'd)—Page 2

Health Disorders	Age in years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All ages	
	N	%	N	%	N	%	N	%	N	%
Cardiovascular										
Heart murmur	5	38.5	4	30.8	4	30.8	0	0.0	13	100.0
Heart failure	0	0.0	1	10.0	7	70.0	2	20.0	10	100.0
Cardiomyopathy	0	0.0	2	28.6	4	57.0	1	14.3	7	100.0
Allergies										
Allergic dermatitis due to:										
Food	20	58.8	11	32.4	3	8.8	0	0.0	34	100.0
Fleas	17	58.6	12	41.4	0	0.0	0	0.0	29	100.0
Inhaled allergens	14	56.0	8	32.0	3	12.0	0	0.0	25	100.0
Insect bite	7	53.8	5	38.5	1	7.7	0	0.0	13	100.0
Drug	1	25.0	3	75.0	0	0.0	0	0.0	4	100.0
Endocrine										
Hypothyroid	39	33.9	55	47.8	20	17.4	1	0.9	115	100.0
Pancreatitis	1	7.1	9	64.3	4	28.6	0	0.0	14	100.0
Diabetes mellitus	0	0.0	4	36.4	7	63.6	0	0.0	11	100.0
Hyperthyroid	3	33.3	5	55.6	1	11.1	0	0.0	9	100.0
Cushings	0	0.0	3	42.9	4	57.0	0	0.0	7	100.0

Table 52—Age at First Occurrence of Health Disorders (5 or More Cases)--(Cont'd)—Page 3

Health Disorders	Age in years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All ages	
	N	%	N	%	N	%	N	%	N	%
Gastrointestinal										
Bloat with torsion	10	18.5	26	48.1	18	33.3	0	0.0	54	100.0
Irritable bowel syndrome	27	64.3	10	23.8	5	11.9	0	0.0	42	100.0
Gastritis	3	15.8	12	63.2	2	10.5	2	10.5	19	100.0
Colitis	7	38.9	7	38.9	4	22.2	0	0.0	18	100.0
Bloat without torsion	4	26.7	6	40.0	4	26.7	1	6.7	15	100.0
Excessive vomiting	8	57.1	3	21.4	3	21.4	0	0.0	14	100.0
Excessive diarrhea	6	50.0	3	25.0	2	16.7	1	8.3	12	100.0
Megaesophagus	1	11.1	1	11.1	6	66.7	1	11.1	9	100.0
Foreign body	3	33.3	3	33.3	3	33.3	0	0.0	9	100.0
Malabsorption	4	66.7	0	0.0	2	33.3	0	0.0	6	100.0
Urinary tract										
Bladder infections	12	35.3	9	26.5	12	35.3	1	2.9	34	100.0
Urinary incontinence	0	0.0	6	21.4	18	64.3	4	14.3	28	100.0
Kidney failure	1	5.9	2	11.8	12	70.6	2	11.8	17	100.0
Kidney disease	0	0.0	2	33.3	4	66.7	0	0.0	6	100.0

Table 52—Age at First Occurrence of Health Disorders (5 or More Cases)--(Cont'd)—Page 4

Health Disorders	Age in years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All ages	
	N	%	N	%	N	%	N	%	N	%
Neurological										
Seizures of unknown origin	12	40.0	14	46.7	3	10.0	1	3.3	30	100.0
Nerve degeneration	1	9.1	0	0.0	8	72.7	2	18.2	11	100.0
Musculoskeletal										
Spondylosis	9	11.3	32	40.0	37	46.3	2	2.5	80	100.0
Arthritis	0	0.0	23	28.8	54	67.5	3	3.8	80	100.0
Hip dysplasia	20	54.1	10	27.0	6	16.2	1	2.7	37	100.0
Hypertrophic osteodystrophy	26	92.9	1	3.6	1	3.6	0	0.0	28	100.0
Degenerative disk disease	0	0.0	4	20.0	16	80.0	0	0.0	20	100.0
Osteochondritis dissecans	10	83.3	1	8.3	1	8.3	0	0.0	12	100.0
Eosinophilic panosteitis	6	100.0	0	0.0	0	0.0	0	0.0	6	100.0
Eye										
Cataracts	1	3.3	2	6.7	23	76.7	4	13.3	30	100.0
Entropion	11	100.0	0	0.0	0	0.0	0	0.0	11	100.0
Injury	4	40.0	4	40.0	2	20.0	0	0.0	10	100.0

Table 52—Age at First Occurrence of Health Disorders (5 or More Cases)--(Cont'd)—Page 5

Health Disorders	Age in years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All ages	
	N	%	N	%	N	%	N	%	N	%
Reproductive—female										
Chronic false pregnancy	16	72.7	6	27.3	0	0.0	0	0.0	22	100.0
Pyometra	2	9.1	11	50.0	9	40.9	0	0.0	22	100.0
Irregular heat cycles	9	81.8	2	18.2	0	0.0	0	0.0	11	100.0
Difficult whelping (dystocia)	0	0.0	11	100.0	0	0.0	0	0.0	11	100.0
Mastitis	1	14.3	6	85.7	0	0.0	0	0.0	7	100.0
Infertility	1	16.7	5	83.3	0	0.0	0	0.0	6	100.0
Failure to carry to term	2	50.0	2	50.0	0	0.0	0	0.0	4	100.0
Uterine inertia	0	0.0	5	100.0	0	0.0	0	0.0	5	100.0
Reproductive—male										
Infertility	0	0.0	6	42.9	8	57.1	0	0.0	14	100.0
Enlarge prostate	1	7.1	4	28.6	9	64.3	0	0.0	14	100.0
Abnormal semen	0	0.0	4	36.4	7	63.6	0	0.0	11	100.0
Testicular atrophy	1	11.1	1	11.1	7	77.8	0	0.0	9	100.0

Table 52—Age at First Occurrence of Health Disorders (5 or More Cases)--(Cont'd)—Page 6

Health Disorders	Age in years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All ages	
	N	%	N	%	N	%	N	%	N	%
Skin/coat										
Dull, dry coat	10	20.8	24	50.0	14	29.2	0	0.0	48	100.0
Sebaceous cyst	3	6.3	21	43.8	24	50.0	0	0.0	48	100.0
Lick granuloma	1	4.5	17	77.3	4	18.2	0	0.0	22	100.0
Hot spots	6	31.6	11	57.9	2	10.5	0	0.0	19	100.0
Demodectic mange	9	100.0	0	0.0	0	0.0	0	0.0	9	100.0
Liver										
Liver disease	0	0.0	1	20.0	4	80.0	0	0.0	5	100.0
Respiratory										
Laryngeal paralysis	0	0.0	0	0.0	14	87.5	2	12.5	16	100.0
Trauma/Accidents										
Laceration requiring stitches	5	16.1	20	64.5	6	19.4	0	0.0	31	100.0
Fracture	17	58.6	8	27.6	3	10.3	1	3.4	29	100.0
Lameness requiring Treatment	5	17.9	15	53.6	8	28.6	0	0.0	28	100.0

Table 52—Age at First Occurrence of Health Disorders (5 or More Cases)--(Cont'd)—Page 7

Health Disorders	Age in years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All ages	
	N	%	N	%	N	%	N	%	N	%
Bacterial										
Anal sacculitis	11	27.5	24	60.0	5	12.5	0	0.0	40	100.0
Lyme disease	6	26.1	12	52.2	5	21.7	0	0.0	23	100.0
Interdigital infection	6	33.3	11	61.1	1	5.6	0	0.0	18	100.0
Pneumonia	1	7.1	2	14.3	9	64.3	2	14.3	14	100.0
Cystitis	2	22.2	6	66.7	1	11.1	0	0.0	9	100.0
Prostatitis	0	0.0	2	33.3	4	66.7	0	0.0	6	100.0
Viral										
Tracheobronchitis (kennel cough)	11	55.0	9	45.0	0	0.0	0	0.0	20	100.0
Parvovirus	13	92.9	1	7.1	0	0.0	0	0.0	14	100.0

Table 52—Age at First Occurrence of Health Disorders (5 or More Cases)--(Cont'd)—Page 8

Health Disorders	Age in years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All ages	
	N	%	N	%	N	%	N	%	N	%
Parasitic										
Tapeworms	19	44.2	19	44.2	5	11.6	0	0.0	43	100.0
Roundworms	35	89.7	3	7.7	1	2.6	0	0.0	39	100.0
Fleas	23	65.7	10	28.6	2	5.7	0	0.0	35	100.0
Giardia	11	30.6	20	55.6	4	11.1	1	2.8	36	100.0
Whipworms	7	35.0	11	55.0	2	10.0	0	0.0	20	100.0
Hookworms	8	44.4	10	55.6	0	0.0	0	0.0	18	100.0
Coccidia	5	62.5	1	12.5	2	25.0	0	0.0	8	100.0
Ear										
Chronic or intermittent Infection	83	50.9	63	38.7	16	9.8	1	0.6	163	100.0
Hematoma	2	20.0	3	30.0	5	50.0	0	0.0	10	100.0
Deafness	0	0.0	0	0.0	13	86.7	2	13.3	15	100.0
Oral										
Gingivitis	2	6.9	16	55.2	10	34.5	1	3.4	29	100.0
Pigment change in nose	1	20.0	4	80.0	0	0.0	0	0.0	5	100.0

Table 52—Age at First Occurrence of Health Disorders (5 or More Cases)--(Cont'd)—Page 9

Health Disorders	Age in years									
	0 – 2.9		3 – 7.9		8 – 12.9		13+		All ages	
	N	%	N	%	N	%	N	%	N	%
Behavior										
Separation anxiety	3	60.0	2	40.0	0	0.0	0	0.0	5	100.0
Congenital										
Umbilical hernia	56	100.0	0	0.0	0	0.0	0	0.0	56	100.0

Table 53—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 by type	**0.6**	**9.4**	**70.8**	**64.9**
Adenocarcinoma	0.6	0.4	6.3	0
Dogs	0	1.0	7.6	0
Bitches	1.0	0	5.5	0
Chondrosarcoma	0	0	0.7	0
Dogs	0	0	0	0
Bitches	0	0	1.1	0
Fibrosarcoma	0	0.8	0.7	0
Dogs	0	1.9	1.9	0
Bitches	0	0	0	0
Hemangiosarcoma	0	0.4	4.9	6.5
Dogs	0	0	1.9	0
Bitches	0	0.7	6.6	8.5
Interstitial cell tumor	0	0	0.7	0
Dogs	0	0	1.9	0
Bitches	0	0	0	0
Liposarcoma	0	0	0.7	0
Dogs	0	0	1.9	0
Bitches	0	0	0	0
Lymphoma	0	0.4	1.4	6.5
Dogs	0	0	1.9	0
Bitches	0	0.7	1.1	8.5
Giant Cell	0	0	0	0
Dogs	0	0	0	0
Bitches	0	0	0	0
Mast Cell	0	0	1.4	6.5
Dogs	0	0	1.9	0
Bitches	0	0	1.1	8.5
Melanoma	0	2.0	4.9	6.5
Dogs	0	2.9	9.6	27.6
Bitches	0	1.3	2.2	0
Mesothelioma	0	0	0.7	0
Dogs	0	0	0	0
Bitches	0	0	1.1	0
Myeloma	0	0	0	0
Dogs	0	0	0	0
Bitches	0	0	0	0
Neuroblastoma	0	0	0.7	0
Dogs	0	0	1.9	0
Bitches	0	0	0	0

Table 53—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+
Neurofibrosarcoma	0	0	0	0
Dogs	0	0	0	0
Bitches	0	0	0	0
Osteosarcoma	0	2.0	14.7	0
Dogs	0	2.9	22.9	0
Bitches	0	1.3	10.0	0
Seminoma	0	0	0	0
Dogs	0	0	0	0
Bitches	0	0	0	0
Sertoli cell tumor	0	0	0	0
Dogs	0	0	0	0
Bitches	0	0	0	0
Squamous cell	0	0	2.1	0
Dogs	0	0	1.9	0
Bitches	0	0	2.2	0
Transitional cell carcinoma	0	0	0	0
Dogs	0	0	0	0
Bitches	0	0	0	0
Transmissible venereal tumor	0	0	0	0
Dogs	0	0	0	0
Bitches	0	0	0	0
Carcinoma, unspecified	0	0.8	7.0	0
Dogs	0	1.9	5.7	0
Bitches	0	0	7.8	0
Sarcoma, unspecified	0	0	2.1	6.5
Dogs	0	0	0	0
Bitches	0	0	3.3	8.5
Other neoplasms	0	0.8	6.3	6.5
Dogs	0	1.0	3.8	0
Bitches	0	0.7	7.8	8.5
Unknown neoplasms	0	2.0	15.4	25.7
Dogs	0	1.9	21.0	55.3
Bitches	0	2.0	12.2	17.0
Non-Malignant Neoplasms	**4.9**	**26.1**	**51.2**	**13.0**
Lipoma	0	11.7	14.7	0
Dogs	0	8.7	13.4	0
Bitches	0	13.8	15.5	0
Papilloma	0	2.3	8.4	0
Dogs	0	3.9	5.7	0
Bitches	0	1.3	10.9	0

Table 53—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+**
Histiocytoma	1.2	0.8	4.2	0
Dogs	0	1.0	1.9	0
Bitches	2.1	0.7	5.5	0
Adenoma	0	0.8	1.4	0
Dogs	0	1.0	1.9	0
Bitches	0	0.7	1.1	0
Polyp	0	1.2	2.1	0
Dogs	0	0	1.9	0
Bitches	0	2.0	2.2	0
Cyst	3.1	5.9	7.7	0
Dogs	3.0	4.8	7.6	0
Bitches	3.1	6.6	7.8	0
Other non-malignant neoplasms	0.6	3.5	12.6	13.0
Dogs	1.5	4.8	9.6	0
Bitches	0	2.6	14.4	17.0
Cardiovascular	**4.3**	**4.3**	**13.3**	**19.5**
Heart Failure	0	0.4	4.9	13.0
Dogs	0	0	7.6	55.3
Bitches	0	0.7	3.3	0
Cardiomyopathy	0	0.8	2.8	6.5
Dogs	0	1.9	3.8	0
Bitches	0	0	2.2	8.5
Heartworm infection	0	0.4	0	0
Dogs	0	1.0	0	0
Bitches	0	0	0	0
Heart arrhythmia	0	0.4	2.1	0
Dogs	0	0	1.9	0
Bitches	0	0.7	2.2	0
Heart murmur	3.1	1.6	2.8	0
Dogs	3.0	2.9	1.9	0
Bitches	3.1	0.7	3.3	0
Persistent right aortic arch	0.6	0	0	0
Dogs	0	0	0	0
Bitches	1.0	0	0	0
Pulmonic stenosis	0	0	0	0
Dogs	0	0	0	0
Bitches	0	0	0	0
Subaortic stenosis	0.6	0	0	0
Dogs	0	0	0	0
Bitches	1.0	0	0	0

Table 53—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+**
Valve dysfunction	0	0	0.7	0
Dogs	0	0	0	0
Bitches	0	0	1.1	0
Ventricular septal defect	0	0	0	0
Dogs	0	0	0	0
Bitches	0	0	0	0
Other cardiovascular disorders	0	0.8	0	0
Dogs	0	0	0	0
Bitches	0	1.3	0	0
Allergy	**37.9**	**16.8**	**4.9**	**0**
Allergic dermatitis due to:				
Fleas	10.4	4.7	0	0
Dogs	16.2	3.9	0	0
Bitches	6.3	5.3	0	0
Food	12.2	4.3	2.1	0
Dogs	17.7	3.9	3.8	0
Bitches	8.3	4.6	1.1	0
Inhaled allergens	8.6	3.1	2.1	0
Dogs	11.8	2.9	0	0
Bitches	6.3	3.3	3.3	0
Flea dip/insecticide	0	0	0	0
Dogs	0	0	0	0
Bitches	0	0	0	0
Atopic rhinitis	0	0	0	0
Dogs	0	0	0	0
Bitches	0	0	0	0
Insect bites	4.3	2.0	0.7	0
Dogs	5.9	1.0	0	0
Bitches	3.1	2.6	1.1	0
Anesthesia	0	0.4	0	0
Dogs	0	0	0	0
Bitches	0	0.7	0	0
Drugs	0.6	1.2	0	0
Dogs	0	1.9	0	0
Bitches	1.0	0.7	0	0
Other allergy	1.8	1.2	0	0
Dogs	1.5	1.9	0	0
Bitches	2.1	0.7	0	0

Table 53—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+
Endocrine	**26.9**	**29.7**	**25.9**	**6.5**
Hypothyroid	23.8	21.5	14.0	6.5
Dogs	38.4	23.1	21.0	0
Bitches	13.5	20.3	10.0	8.5
Hyperthyroid	1.8	2.0	0.7	0
Dogs	3.0	2.9	1.9	0
Bitches	1.0	1.3	0	0
Cushing's (hyperadrenal)	0	1.2	2.8	0
Dogs	0	1.9	5.7	0
Bitches	0	0.7	1.1	0
Addison's (hypoadrenal)	0	0	0.7	0
Dogs	0	0	1.9	0
Bitches	0	0	0	0
Diabetes mellitus	0	1.6	4.9	0
Dogs	0	0	1.9	0
Bitches	0	2.6	6.6	0
Pancreatic insufficiency	0.6	0	0	0
Dogs	0	0	0	0
Bitches	1.0	0	0	0
Pancreatitis	0.6	3.5	2.8	0
Dogs	1.5	2.9	1.9	0
Bitches	0	3.9	3.3	0
Other endocrine disorders	0	0	0	0
Dogs	0	0	0	0
Bitches	0	0	0	0
Gastrointestinal	**48.8**	**30.8**	**36.4**	**32.5**
Bloat without torsion	2.4	2.3	2.8	6.5
Dogs	4.4	1.0	1.9	0
Bitches	1.0	3.3	3.3	8.5
Bloat with torsion	6.1	10.2	12.6	0
Dogs	11.8	14.5	13.4	0
Bitches	2.1	7.2	12.2	0
Megaesophagus	0.6	0.4	4.2	6.5
Dogs	0	0	11.5	27.6
Bitches	1.0	0.7	0	0
Gastritis	1.8	4.7	1.4	13.0
Dogs	3.0	4.8	0	0
Bitches	1.0	4.6	2.2	17.0

Table 53—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+**
Excessive vomiting	4.9	1.2	2.1	0
Dogs	4.4	1.9	1.9	0
Bitches	5.2	0.7	2.2	0
Excessive diarrhea	3.7	1.2	1.4	6.5
Dogs	1.5	2.9	0	0
Bitches	5.2	0	2.2	8.5
Excessive flatulence	1.2	0.4	0	0
Dogs	0	1.0	0	0
Bitches	2.1	0	0	0
Malabsorbtion	2.4	0	1.4	0
Dogs	1.5	0	1.9	0
Bitches	3.1	0	1.1	0
Colitis	4.3	2.7	2.8	0
Dogs	5.9	2.9	3.8	0
Bitches	3.1	2.6	2.2	0
IBS	16.5	3.9	3.5	0
Dogs	22.1	5.8	1.9	0
Bitches	12.5	2.6	4.4	0
Foreign body	1.8	1.2	2.1	0
Dogs	3.0	1.9	1.9	0
Bitches	1.0	0.7	2.2	0
Motion Sickness	0.6	0	0	0
Dogs	1.5	0	0	0
Bitches	0	0	0	0
Other gastrointestinal disorders	2.4	2.7	2.1	0
Dogs	1.5	1.9	1.9	0
Bitches	3.1	3.3	2.2	0
Hematologic	**0**	**1.6**	**3.5**	**0**
Hemophilia	0	0	0	0
Dogs	0	0	0	0
Bitches	0	0	0	0
Autoimmune hemolytic anemia	0	0	2.1	0
Dogs	0	0	1.9	0
Bitches	0	0	2.2	0
Chronic anemia	0	0.4	0	0
Dogs	0	1.0	0	0
Bitches	0	0	0	0
Thrombocytopenia	0	1.2	0.7	0
Dogs	0	2.9	1.9	0
Bitches	0	0	0	0

Table 53—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+**
Von Willebrand's disease	0	0	0	0
Dogs	0	0	0	0
Bitches	0	0	0	0
Canine leukocyte adhesion deficiency	0	0	0	0
Dogs	0	0	0	0
Female	0	0	0	0
Bone marrow failure	0	0	0	0
Dogs	0	0	0	0
Female	0	0	0	0
Other hematologic disorders	0	0	0.7	0
Dogs	0	0	0	0
Bitches	0	0	1.1	0
Urinary Tract / Renal	**9.2**	**8.2**	**32.2**	**45.4**
Kidney disease	0	0.8	2.8	0
Dogs	0	1.0	3.8	0
Bitches	0	0.7	2.2	0
Kidney failure	0.6	0.8	8.4	13.0
Dogs	0	0	7.6	0
Bitches	1.0	1.3	8.9	17.0
Bladder stones	0	0.4	0	0
Dogs	0	1.0	0	0
Bitches	0	0	0	0
Bladder infection(s)	7.3	3.5	8.4	6.5
Dogs	4.4	2.9	9.6	0
Bitches	9.4	3.9	7.8	8.5
Urinary incontinence	0	2.3	12.6	26.0
Dogs	0	0	5.7	0
Bitches	0	3.9	16.6	33.9
Other urinary tract/renal disorders	1.2	0.4	0	0
Dogs	1.5	1.0	0	0
Bitches	1.0	0	0	0
Neurological	**9.2**	**6.2**	**18.2**	**51.9**
Seizures of unknown origin	7.3	5.5	2.1	6.5
Dogs	7.4	7.7	3.8	0
Bitches	7.3	3.9	1.1	8.5
Seizures of known origin	1.2	0	0.7	0
Dogs	0	0	0	0
Bitches	2.1	0	1.1	0

Table 53—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+**
Wobbler syndrome	0	0	2.8	0
Dogs	0	0	5.7	0
Bitches	0	0	1.1	0
Dementia	0	0	2.1	6.5
Dogs	0	0	3.8	0
Bitches	0	0	1.1	8.5
Nerve degeneration	0.6	0	5.6	13.0
Dogs	1.5	0	11.5	27.6
Bitches	0	0	2.2	8.5
Tremors - generalized	0	0	0.7	0
Dogs	0	0	0	0
Bitches	0	0	1.1	0
Head tilt	0	0	0	6.5
Dogs	0	0	0	0
Bitches	0	0	0	8.5
Myasthenia gravis	0	0	0.7	0
Dogs	0	0	1.9	0
Bitches	0	0	0	0
Other neurological disorders	0	0.8	3.5	19.5
Dogs	0	1.9	0	0
Bitches	0	0	5.5	25.5
Musculoskeletal	**46.4**	**31.2**	**82.0**	**51.9**
Eosinophilic panosteitis	3.7	0	0	0
Dogs	5.9	0	0	0
Bitches	2.1	0	0	0
Osteochondritis dissecans	6.1	0.4	0.7	0
Dogs	8.9	1.0	0	0
Bitches	4.2	0	1.1	0
Hip dysplasia	12.2	3.9	4.2	6.5
Dogs	11.8	1.9	0	27.6
Bitches	12.5	5.3	6.6	0
Elbow dysplasia	0.6	0.8	0	0
Dogs	0	0	0	0
Bitches	1.0	1.3	0	0
Spondylosis	5.5	12.5	25.9	13.0
Dogs	1.5	13.5	30.6	0
Bitches	8.3	11.8	23.2	17.0
Degenerative disk disease	0	1.6	11.2	0
Dogs	0	2.9	15.3	0
Bitches	0	0.7	8.9	0

Table 53—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+**
Anterior cruciate ligament tear	0.6	1.2	0	0
Dogs	1.5	1.9	0	0
Bitches	0	0.7	0	0
Arthritis	0	9.0	37.8	19.5
Dogs	0	8.7	43.9	55.3
Bitches	0	9.2	34.3	8.5
Patella luxation	0	0	0	0
Dogs	0	0	0	0
Bitches	0	0	0	0
HOD	15.9	0.4	0.7	0
Dogs	22.1	1.0	1.9	0
Bitches	11.5	0	0	0
Other musculoskeletal disorders	1.8	1.6	1.4	13.0
Dogs	1.5	2.9	1.9	0
Bitches	2.1	0.7	1.1	17.0
Eyes	**14.7**	**3.9**	**22.4**	**26.0**
Blindness	0	0	0.7	0
Dogs	0	0	1.9	0
Bitches	0	0	0	0
Corneal dystrophy	0	0	0.7	0
Dogs	0	0	0	0
Bitches	0	0	1.1	0
Progressive retinal atrophy	0	0	0	0
Dogs	0	0	0	0
Bitches	0	0	0	0
Cataracts	0.6	0.8	16.1	26.0
Dogs	0	1.0	15.3	0
Bitches	1.0	0.7	16.6	33.9
Glaucoma	0	0.4	1.4	0
Dogs	0	0	0	0
Bitches	0	0.7	2.2	0
Entropion	6.7	0	0	0
Dogs	7.4	0	0	0
Bitches	6.3	0	0	0
Ectropion	2.4	0	0	0
Dogs	1.5	0	0	0
Bitches	3.1	0	0	0
Prolapsed 3rd eyelid	0.6	0	0	0
Dogs	0	0	0	0
Bitches	1.0	0	0	0

Table 53—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+**
Distichiasis	0	0.4	0	0
Dogs	0	0	0	0
Bitches	0	0.7	0	0
Injury	2.4	1.6	1.4	0
Dogs	4.4	1.0	0	0
Bitches	1.0	2.0	2.2	0
Uveitis	0	0	0	0
Dogs	0	0	0	0
Bitches	0	0	0	0
Cherry eye	1.2	0	0	0
Dogs	1.5	0	0	0
Bitches	1.0	0	0	0
Len luxation	0	0	0	0
Dogs	0	0	0	0
Bitches	0	0	0	0
Other eye diseases	0.6	0.8	2.1	0
Dogs	0	0	1.9	0
Bitches	1.0	1.3	2.2	0
Reproductive (Bitches)	**34.4**	**36.7**	**12.2**	**0**
Infertility	1.0	3.3	0	0
Failure to carry to term	2.1	1.3	0	0
Irregular heat cycles	9.4	1.3	0	0
Chronic false pregnancy	16.7	3.9	0	0
Difficult whelping (dystocia)	0	7.2	0	0
Mastitis	1.0	3.9	0	0
Pyometra	2.1	7.2	10.0	0
Uterine inertia	0	3.3	0	0
Insufficient milk	0	0.7	0	0
Malformed puppies	0	2.0	0	0
Poor mothering instinct	0	0.7	0	0
Other reproductive disorders	2.1	2.0	2.2	0

Table 53—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+
Reproductive (Dogs)	**8.9**	**16.4**	**63.0**	**0**
Infertility	0	5.8	15.3	0
Unilateral chryptorchidism	5.9	0	0	0
Bilateral chryptorchidism	0	0	0	0
Enlarged prostate	1.5	3.9	17.2	0
Lack of libido	0	0	3.8	0
Abnormal semen	0	3.9	13.4	0
Testicular atrophy	1.5	1.0	13.4	0
Other reproductive disorders	0	1.9	0	0
Skin / Coat	**22.0**	**34.0**	**32.9**	**0**
Dull and dry	6.1	9.4	9.8	0
Dogs	11.8	13.5	5.7	0
Bitches	2.1	6.6	12.2	0
Hot spots	3.7	4.3	1.4	0
Dogs	7.4	5.8	1.9	0
Bitches	1.0	3.3	1.1	0
Lick granuloma	0.6	6.6	2.8	0
Dogs	1.5	6.8	3.8	0
Bitches	0	6.6	2.2	0
Seborrhea	0.6	0.4	0	0
Dogs	1.5	0	0	0
Bitches	0	0.7	0	0
Pigment abnormalities	0.6	0	0.7	0
Dogs	1.5	0	1.9	0
Bitches	0	0	0	0
Sebaceous cysts	1.8	8.2	16.8	0
Dogs	1.5	8.7	7.6	0
Bitches	2.1	7.9	22.1	0
Sebaceous adenitis	0	0.4	0	0
Dogs	0	0	0	0
Bitches	0	0.7	0	0

Table 53—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+**
Lupus erythematosis	0	0	0	0
Dogs	0	0	0	0
Bitches	0	0	0	0
Pemphigus foliaceus	0	0.8	0	0
Dogs	0	1.0	0	0
Bitches	0	0.7	0	0
Demodectic mange	5.5	0	0	0
Dogs	3.0	0	0	0
Bitches	7.3	0	0	0
Sarcoptic mange	0	0.4	0	0
Dogs	0	1.0	0	0
Bitches	0	0	0	0
Other skin disorders	3.1	3.5	1.4	0
Dogs	4.4	4.8	3.8	0
Bitches	2.1	2.6	0	0
Liver / pancreas	**1.2**	**2.0**	**4.9**	**0**
Pancreatic insufficiency	0.6	0.8	0.7	0
Dogs	1.5	0	0	0
Bitches	0	1.3	1.1	0
Liver shunt	0.6	0.4	0	0
Dogs	0	0	0	0
Bitches	1.0	0.7	0	0
Liver disease	0	0.4	2.8	0
Dogs	0	1.0	7.6	0
Bitches	0	0	0	0
Other liver disorders	0	0.4	1.4	0
Dogs	0	1.0	0	0
Bitches	0	0	2.2	0
Respiratory	**0.6**	**0.4**	**9.8**	**19.5**
Laryngeal paralysis	0	0	9.8	13.0
Dogs	0	0	9.6	27.6
Bitches	0	0	10.0	8.5
Other respiratory disorders	0.6	0.4	0	6.5
Dogs	1.5	1.0	0	27.6
Bitches	0	0	0	0

Table 53. 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+**
Trauma / accidents	**20.1**	**18.3**	**14.1**	**6.5**
Fracture	10.4	3.1	2.1	6.5
Dogs	8.9	4.8	3.8	0
Bitches	11.5	2.0	1.1	8.5
Lameness	3.1	5.9	5.6	0
Dogs	1.5	8.7	7.6	0
Bitches	4.2	3.9	4.4	0
Lacerations	3.1	7.8	4.2	0
Dogs	4.4	10.6	1.9	0
Bitches	2.1	5.9	5.5	0
Other trauma	3.7	1.6	2.1	0
Dogs	5.9	1.0	3.8	0
Bitches	2.1	2.0	1.1	0
Birth defects	**37.9**	**0**	**0**	**0**
Umbilical hernia	34.2	0	0	0
Dogs	23.6	0	0	0
Bitches	41.7	0	0	0
Inguinal hernia	1.2	0	0	0
Dogs	1.5	0	0	0
Bitches	1.0	0	0	0
Cleft lip / palate	0	0	0	0
Dogs	0	0	0	0
Bitches	0	0	0	0
PDA	0	0	0	0
Dogs	0	0	0	0
Bitches	0	0	0	0
Overshot jaw	0.6	0	0	0
Dogs	1.5	0	0	0
Bitches	0	0	0	0
Undershot jaw	1.2	0	0	0
Dogs	0	0	0	0
Bitches	2.1	0	0	0
Other birth defects	0.6	0	0	0
Dogs	1.5	0	0	0
Bitches	0	0	0	0

Table 53. Age Specific Veterinary Confirmed Health Related Disorder Rates (per 1000 dog years) Page 14

Disorder	Age in Years			
	0 – 2.9	**3 – 7.9**	**8 – 12.9**	**13+**
Infections / Infestations	**104.4**	**55.8**	**31.5**	**26.0**
Bacterial	**24.4**	**26.5**	**21.0**	**13.0**
Anal sacculitis	6.7	9.4	3.5	0
Dogs	5.9	11.6	1.9	0
Bitches	7.3	7.9	4.4	0
Pneumonia	0.6	0.8	6.3	13.0
Dogs	0	1.0	11.5	27.6
Bitches	1.0	0.7	3.3	8.5
Prostatitis				
Dogs	0	1.9	7.6	0
Cystitis	1.2	2.3	0.7	0
Dogs	0	1.0	0	0
Bitches	2.1	3.3	1.1	0
Tonsillitis	0.6	0.4	0	0
Dogs	1.5	0	0	0
Bitches	0	0.7	0	0
Septicemia	0	0.4	0	0
Dogs	0	0	0	0
Bitches	0	0.7	0	0
Lyme disease	3.7	4.7	3.5	0
Dogs	5.9	5.8	5.7	0
Bitches	2.1	3.9	2.2	0
Leptospirosis	0	0	0	0
Dogs	0	0	0	0
Bitches	0	0	0	0
RMSF	0	0.4	0.7	0
Dogs	0	1.0	1.9	0
Bitches	0	0	0	0
Erlichiosis	0.6	0.4	0	0
Dogs	1.5	0	0	0
Bitches	0	0.7	0	0
Interdigital infection	3.7	4.3	0.7	0
Dogs	4.4	7.7	0	0
Bitches	3.1	2.0	1.1	0
Other bacterial infections	1.8	0.4	2.1	0
Dogs	3.0	0	0	0
Bitches	1.0	0.7	3.3	0

Table 53. Age Specific Veterinary Confirmed Health Related Disorder Rates (per 1000 dog years) Page 15

Disorder	Age in Years			
	0 – 2.9	**3 – 7.9**	**8 – 12.9**	**13+**
Viral	**15.3**	**3.9**	**0**	**0**
Parvovirus	7.9	0.4	0	0
Dogs	8.9	1.0	0	0
Bitches	7.3	0	0	0
Corona virus	0.6	0	0	0
Dogs	0	0	0	0
Bitches	1.0	0	0	0
Distemper	0	0	0	0
Dogs	0	0	0	0
Bitches	0	0	0	0
Tracheobronchitis (kennel cough)	6.7	3.1	0	0
Dogs	4.4	3.9	0	0
Bitches	8.3	3.3	0	0
Herpes	0	0	0	0
Dogs	0	0	0	0
Bitches	0	0	0	0
Other viral infections	0	0	0	0
Dogs	0	0	0	0
Bitches	0	0	0	0
Fungal	**2.4**	**0.8**	**0.7**	**0**
Ringworm	1.2	0.4	0	0
Dogs	0	0	0	0
Bitches	2.1	0.7	0	0
Yeast	0.6	0.4	0.7	0
Dogs	0	0	0	0
Bitches	1.0	0.7	1.1	0
Blastomycosis	0.6	0	0	0
Dogs	0	0	0	0
Bitches	1.0	0	0	0
Coccidioidomycosis	0	0	0	0
Dogs	0	0	0	0
Bitches	0	0	0	0
Other fungal infections	0	0	0	0
Dogs	0	0	0	0
Bitches	0	0	0	0
Parasitic	**62.3**	**24.6**	**9.8**	**13.0**
Fleas	14.0	3.9	1.4	0
Dogs	13.3	2.9	1.9	0
Bitches	14.6	4.6	1.1	0

Table 53. Age Specific Veterinary Confirmed Health Related Disorder Rates (per 1000 dog years) Page 16

Disorder	Age in Years			
	0 – 2.9	**3 – 7.9**	**8 – 12.9**	**13+**
Giardia	6.7	7.8	2.8	6.5
Dogs	8.9	8.7	3.8	0
Bitches	5.2	7.2	2.2	8.5
Coccidia	3.1	0.4	1.4	0
Dogs	3.0	1.0	1.9	0
Bitches	3.1	0	1.1	0
Roundworms	21.4	1.2	0.7	0
Dogs	26.6	0	0	0
Bitches	17.7	2.0	1.1	0
Hookworms	4.9	3.9	0	0
Dogs	7.4	3.9	0	0
Bitches	3.1	3.9	0	0
Whipworms	4.3	4.3	1.4	0
Dogs	7.4	4.8	0	0
Bitches	2.1	3.9	2.2	0
Tapeworms	11.6	7.4	3.5	0
Dogs	13.3	10.6	1.9	0
Bitches	10.4	5.3	4.4	0
Other parasitic infestations	0.6	0	0	6.5
Dogs	1.5	0	0	0
Bitches	0	0	0	8.5
Ears	**51.9**	**25.8**	**24.5**	**19.5**
Hematoma	1.2	1.2	3.5	0
Dogs	3.0	1.0	1.9	0
Bitches	0	1.3	4.4	0
Hearing problems	0	0	9.1	12.9
Dogs	0	0	7.6	27.6
Bitches	0	0	10.0	8.5
Infection	50.7	24.6	11.2	6.5
Dogs	50.2	28.9	15.3	27.6
Bitches	51.1	21.6	8.9	0
Other ear disorders	0	0	0.7	0
Dogs	0	0	0	0
Bitches	0	0	1.1	0
Nose & Mouth	**8.5**	**13.7**	**7.7**	**6.5**
Missing teeth	0	0.8	0.7	0
Dogs	0	0	0	0
Bitches	0	1.3	1.1	0

Table 53. Age Specific Veterinary Confirmed Health Related Disorder Rates (per 1000 dog years) Page 17

Disorder	Age in Years			
	0 – 2.9	**3 – 7.9**	**8 – 12.9**	**13+**
Underbite	1.8	0	0	0
Dogs	0	0	0	0
Bitches	3.1	0	0	0
Overbite	1.2	0	0	0
Dogs	1.5	0	0	0
Bitches	1.0	0	0	0
Wry mouth	1.2	0.4	0	0
Dogs	1.5	0	0	0
Bitches	1.0	0.7	0	0
Gingivitis	1.2	6.2	7.0	6.5
Dogs	0	6.8	5.7	0
Bitches	2.1	5.9	7.8	8.5
Enamel hypoplasia	0	0.8	0	0
Dogs	0	0	0	0
Bitches	0	1.3	0	0
Pigment change in nose	0.6	1.6	0	0
Dogs	0	1.0	0	0
Bitches	1.0	2.0	0	0
Other oral disorders	2.4	3.9	0	0
Dogs	1.5	2.9	0	0
Bitches	3.1	4.6	0	0
Behavior Problems	**7.9**	**4.7**	**0**	**6.5**
Fear aggression people	0	0	0	0
Dogs	0	0	0	0
Bitches	0	0	0	0
Fear aggression dogs	0.6	0.8	0	0
Dogs	1.5	0	0	0
Bitches	0	1.3	0	0
Dominance aggression people	1.8	0.4	0	0
Dogs	3.0	0	0	0
Bitches	1.0	0.7	0	0
Dominance aggression dogs	1.2	0	0	0
Dogs	0	0	0	0
Bitches	2.1	0	0	0
Fearful / shy of people	0.6	0	0	0
Dogs	0	0	0	0
Bitches	1.0	0	0	0
Inappropriate urination	0	0.4	0	6.5
Dogs	0	1.0	0	0
Bitches	0	0	0	8.5

Table 53. Age Specific Veterinary Confirmed Health Related Disorder Rates (per 1000 dog years) Page 18

Disorder	Age in Years			
	0 – 2.9	**3 – 7.9**	**8 – 12.9**	**13+**
Separation anxiety	1.8	0.8	0	0
Dogs	4.4	1.9	0	0
Bitches	0	0	0	0
Obsessive / compulsive barking	1.2	0.4	0	0
Dogs	3.0	0	0	0
Bitches	0	0.7	0	0
Obsessive / compulsive licking	0	1.2	0	0
Dogs	0	1.9	0	0
Bitches	0	0.7	0	0
Gunshy	0	0.4	0	0
Dogs	0	0	0	0
Bitches	0	0.7	0	0
Other behavioral problems	0.6	0.4	0	0
Dogs	1.5	1.0	0	0
Bitches	0	0	0	0

Table 54—Outcome for Health Disorders with 5 or More Cases

Health disorder	Confirmed reports	Treated[a]			Cured	
			N	%	N	%
Malignant neoplasm						
Osteosarcoma	26	Yes	16	61.5	3	18.8
		No	10	38.5	0	0.0
Melanoma	13	Yes	11	84.6	8	72.7
		No	2	15.4	0	0.0
Adenocarcinoma	11	Yes	7	63.6	3	42.9
		No	4	36.4	0	0.0
Hemangiosarcoma	9	Yes	6	66.7	1	16.7
		No	3	33.3	0	0.0
Lymphoma	5	Yes	4	80.0	1	25.0
		No	1	20.0	0	0.0
Carcinoma unspecified	12	Yes	9	75.0	3	33.3
		No	3	25.0	0	0.0
Non malignant neoplasm						
Lipoma	52	Yes	24	46.2	23	95.8
		No	26	50.0	0	0.0
Cyst	36	Yes	30	83.3	25	83.3
		No	6	16.7	0	0.0
Papilloma	19	Yes	9	47.4	8	88.9
		No	9	47.4	1	11.1
Histiocytoma	10	Yes	9	90.0	8	88.9
		No	1	10.0	0	0.0
Polyp	6	Yes	4	66.7	3	75.0
		No	2	33.3	0	0.0
Heart & circulation						
Murmurs	13	Yes	3	23.1	1	33.3
		No	10	76.9	0	0.0
Heart failure --unknown cause	10	Yes	6	60.0	0	0.0
		No	4	40.0	0	0.0

Table 54—Outcome for Health Disorders (5 or More Cases)—(Cont'd)--Page 2

Health disorder	Confirmed reports		Treated[a]		Cured	
			N	%	N	%
Cardiovascular						
Cardiomyopathy	7	Yes	7	100.0	1	14.3
		No	0	0.0	--	--
Allergies						
Allergic dermatitis due to:						
Food	36	Yes	32	88.9	11	34.4
		No	-	--	--	--
Fleas	30	Yes	28	93.3	13	46.4
		No	1	3.3	0	0.0
Inhaled allergens	26	Yes	26	100.0	7	26.9
		No	0	0.0	--	--
Insect bite allergy	14	Yes	12	85.7	6	50.0
		No	1	7.1	1	100.0
Drug allergy	5	Yes	2	40.0	0	0.0
		No	1	20.0	0	0.0
Endocrine						
Hypothyroidism	117	Yes	116	99.2	19	16.4
		No	0	0.0	--	--
Pancreatitis	14	Yes	13	92.9	10	76.9
		No	0	0.0	0	0.0
Diabetes mellitus	11	Yes	11	100.0	0	0.0
		No	0	0.0	--	--
Hyperthyroid	9	Yes	8	88.9	2	25.0
		No	0	0.0	--	--
Cushings	7	Yes	6	85.7	1	16.7
		No	1	14.3	0	0.0
Gastrointestinal						
Bloat with torsion	54	Yes	53	98.2	49	92.5
		No	1	1.9	0	0.0

Table 54—Outcome for Health Disorders (5 or More Cases)—(Cont'd)--Page 3

Health disorder	Confirmed reports		Treated[a]		Cured	
			N	%	N	%
Gastrointestinal (Cont'd)						
Irritable bowel syndrome	42	Yes	42	100.0	17	40.5
		No	0	0.0	--	--
Gastritis	19	Yes	19	100.0	9	47.4
		No	0	0.0	--	--
Colitis	19	Yes	18	94.7	7	38.9
		No	1	5.3	0	0.0
Bloat without torsion	15	Yes	15	100.0	14	93.3
		No	0	0.0	--	--
Excessive vomiting	14	Yes	14	100.0	8	57.1
		No	0	0.0	--	--
Excessive diarrhea	13	Yes	13	100.0	5	38.5
		No	0	0.0	--	
Megaesophagus	9	Yes	5	55.6	0	0.0
		No	3	33.3	0	0.0
Foreign body	9	Yes	9	100.0	9	100.0
		No	0	0.0	--	--
Malabsorption	6	Yes	5	83.3	2	40.0
		No	1	16.7	0	0.0
Urinary tract						
Bladder infections	38	Yes	37	97.4	36	97.3
		No	0	0.0	--	--
Urinary incontinence	28	Yes	27	96.4	9	33.3
		No	1	3.6	0	0.0
Kidney failure	17	Yes	16	94.1	1	6.3
		No	1	5.9	0	0.0
Kidney disease	7	Yes	4	57.1	0	0.0
		No	2	28.6	0	0.0

Table 54—Outcome for Health Disorders with 3 or More Cases (Cont'd)—Page 4

Health disorder	Confirmed reports		Treated[a]		Cured	
			N	%	N	%
Neurological						
Seizures of unknown origin	30	Yes	20	66.7	3	15.0
		No	9	30.0	1	11.1
Seizures of known origin	3	Yes	2	66.7	1	50.0
		No	1	33.3	1	100.0
Musculoskeletal						
Spondylosis	81	Yes	44	54.3	3	6.8
		No	35	43.2	1	2.9
Arthritis	80	Yes	70	87.5	3	4.3
		No	10	12.5	0	0.0
Hip dysplasia	41	Yes	16	39.0	1	6.3
		No	22	53.7	0	0.0
Hypertrophic osteodystrophy	28	Yes	28	100.0	26	92.9
		No	0	0.0	--	--
Degenerative disk disease	20	Yes	16	80.0	2	12.5
		No	4	20.0	0	0.0
Osteochondritis dissecans	12	Yes	10	83.3	8	80.0
		No	2	16.7	2	100.0
Eosinophilic panosteitis	6	Yes	5	83.3	5	100.0
		No	0	0.0	--	--
Eye						
Cataract	30	Yes	4	13.3	4	100.0
		No	26	86.7	0	0.0
Entropion	12	Yes	10	83.3	10	100.0
		No	2	16.7	0	0.0
Injury	11	Yes	10	90.9	10	100.0
		No	1	9.1	0	0.0

Table 54—Outcome for Health Disorders (5 or More Cases)—(Cont'd)--Page 5

Health disorder	Confirmed reports		Treated[a]		Cured	
			N	%	N	%
Reproductive (female)						
Chronic false pregnancy	24	Yes	8	33.3	6	75.0
		No	16	66.7	0	0.0
Pyometra	23	Yes	23	100.0	22	95.7
		No	0	0.0	--	--
Difficult whelping (dystocia)	12	Yes	12	100.0	7	58.3
		No	0	0.0	--	--
Mastitis	8	Yes	8	100.0	8	100.0
		No	0	0.0	--	--
Infertility	6	Yes	2	33.3	0	0.0
		No	3	50.0	0	0.0
Failure to carry to term	5	Yes	3	60.0	1	33.3
		No	2	40.0	0	0.0
Uterine inertia	5	Yes	4	80.0	3	75.0
		No	1	20.0	0	0.0
Reproductive (male)						
Infertility	14	Yes	5	35.7	3	60.0
		No	7	50.0	0	0.0
Enlarged prostate	14	Yes	12	85.7	8	66.7
		No	1	7.1	0	0.0
Abnormal semen	11	Yes	6	54.6	2	33.3
		No	4	36.4	0	0.0
Testicular atrophy	9	Yes	3	33.3	2	66.7
		No	5	55.6	0	0.0
Skin (Cont'd)						
Dull dry coat	49	Yes	42	85.7	13	31.0
		No	7	14.3	0	0.0

Table 54—Outcome for Health Disorders (5 or More Cases)—(Cont'd)--Page 6

Health disorder	Confirmed reports		Treated[a]		Cured	
			N	%	N	%
Skin (Cont'd)						
Sebaceous cysts	48	Yes	36	75.0	25	69.4
		No	12	25.0	2	16.7
Hot Spots	19	Yes	19	100.0	11	57.9
		No	0	0.0	--	--
Demodectic mange	9	Yes	8	88.9	8	100.0
		No	1	11.1	1	100.0
Liver						
Liver disease	5	Yes	5	100.0	1	20.0
		No	0	0.0	--	--
Trauma / accidents						
Laceration requiring stitches	31	Yes	30	96.8	29	96.7
		No	1	3.2	0	0.0
Fracture	29	Yes	25	86.2	21	84.0
		No	4	13.8	1	25.0
Lameness requiring Treatment	28	Yes	27	96.4	18	66.7
		No	1	3.6	0	0.0
Congenital						
Umbilical hernia	58	Yes	32	55.2	31	96.9
		No	26	44.8	3	11.5
Respiratory						
Laryngeal paralysis	16	Yes	6	37.5	1	16.7
		No	10	62.5	0	0.0
Bacterial infections						
Anal sacculitis	40	Yes	40	100.0	31	77.5
		No	0	0.0	--	--
Lyme disease	24	Yes	23	95.8	16	69.6
		No	1	4.2	1	100.0

Table 54—Outcome for Health Disorders (5 or More Cases)—(Cont'd)--Page 7

Health disorder	Confirmed reports		Treated[a]		Cured	
			N	%	N	%
Bacterial infections (Cont'd)						
Interdigital infection	19	Yes	19	100.0	17	89.5
		No	0	0.0	--	--
Pneumonia	14	Yes	14	100.0	8	57.1
		No	0	0.0	--	--
Cystitis	11	Yes	11	100.0	11	100.0
		No	0	0.0	--	--
Prostatitis	6	Yes	6	100.0	6	100.0
		No	0	0.0	--	--
Viral						
Tracheobronchitis	21	Yes	18	85.7	18	100.0
		No	3	14.3	3	100.0
Parvovirus	14	Yes	14	100.0	14	100.0
		No	0	0.0	--	--
Parasitic						
Tapeworms	53	Yes	52	98.1	51	98.1
		No	1	1.9	0	0.0
Fleas	37	Yes	37	100.0	32	86.5
		No	0	0.0	--	--
Giardia	36	Yes	36	100.0	35	97.2
		No	0	0.0	--	--
Roundworms	44	Yes	44	7.8	43	97.7
		No	0	0.0	--	--
Whipworms	26	Yes	26	100.0	25	96.2
		No	0	0.0	--	--

Table 54—Outcome for Health Disorders (5 or More Cases)—(Cont'd)--Page 8

Health disorder	Confirmed reports		Treated[a]		Cured	
			N	%	N	%
Parasitic (Cont'd)						
Hookworms	22	Yes	22	100.0	22	100.0
		No	0	0.0	--	--
Coccidia	8	Yes	8	100.0	8	100.0
		No	0	0.0	--	--
Ear						
Chronic / intermittent infection	176	Yes	173	98.3	100	57.8
		No	1	0.6	0	0.0
Deafness	15	Yes	0	0.0	--	--
		No	12	80.0	0	0.0
Hematoma	10	Yes	9	90.0	6	66.7
		No	1	10.0	0	0.0
Nose & mouth						
Gingivitis	31	Yes	27	87.1	14	51.9
		No	4	12.9	0	0.0
Pigment change in nose	5	Yes	0	0.0	--	--
		No	3	60.0	0	0.0
Behavior problems						
Separation anxiety	6	Yes	6	100.0	1	16.7
		No	0	0.0	--	--

[a] Number treated may not be equal to number of confirmed reports due to missing data

Table 55—Management for 16 Irish Setters with Behavior Problems

	N	%
Professional counseling or behavior modification	16	100.0
Medical	5	31.5
Euthanasia was considered[a]	3	18.8

[a] Behavior problem was listed as cause of death or euthanasia for none of the 242 Irish Setters that died in this survey

Section V. Association between Health Disorders, Host Factors, and Environment

Table 56—Gender and Health Disorder

Health Disorder	Bitches		Dogs		
	Yes Number (%)	No Number (%)	Yes Number (%)	No Number (%)	P value [a]
Urinary Incontinence	29 (80.6)	302 (57.1)	7 (19.4)	227 (42.9)	0.01
Sebaceous Cyst	34 (70.8)	297 (57.5)	14 (29.2)	220 (42.6)	0.07
Anal Sacculitis	23 (57.5)	308 (58.7)	17 (42.5)	217 (41.3)	0.89

[a] $P < 0.05$ indicates the association is statistically significant, that is, a less than 5% probability this association occurred by chance alone.

Table 57—Association between Gender, Neuter Status, and Urinary Incontinence

Gender	Urinary Incontinence		P value [a]
	Yes	No	
Bitches	29 (80.6)	302 (57.1)	
Dogs	7 (19.4)	227 (42.9)	<0.01

Neuter Status	Urinary Incontinence - Bitches		P value [a]
	Yes	No	
Neutered	25 (86.2)	187 (63.4)	
Intact	4 (13.8)	108 (36.6)	0.01

Neuter Status	Urinary Incontinence - Dogs		P value [a]
	Yes	No	
Neutered	1 (14.3)	73 (32.3)	
Intact	6 (85.7)	153 (67.7)	0.44

[a] $P < 0.05$ indicates the association is statistically significant, that is, a less than 5% probability this association occurred by chance alone.

Table 58—Association between Body Condition and Health Disorders

Body Condition	Health Disorder		P value[a]
	Osteosarcoma	**No Osteosarcoma**	
	Number (%)	Number (%)	
Puppy			
Underweight	2 (7.7)	70 (13.7)	0.51
Average	24 (92.3)	431 (84.3)	
Overweight	0 (0.0)	10 (2.0)	
Adult			
Underweight	2 (7.7)	32 (6.0)	0.82
Average	23 (88.5)	468 (87.5)	
Overweight	1 (3.9)	35 (6.5)	
	Melanoma	**No Melanoma**	
	Number (%)	Number (%)	
Puppy			
Underweight	1 (7.7)	71 (13.6)	0.25
Average	11 (84.6)	444 (84.7)	
Overweight	1 (7.7)	9 (1.7)	
Adult			
Underweight	0 (0.0)	34 (6.2)	0.42
Average	12 (100.0)	479 (87.3)	
Overweight	0 (0.0)	36 (6.6)	
	Adenocarcinoma	**No Adenocarcinoma**	
	Number (%)	Number (%)	
Puppy			
Underweight	0 (0.0)	72 (13.7)	0.36
Average	11 (100.0)	444 (84.4)	
Overweight	0 (0.0)	10 (1.9)	
Adult			
Underweight	0 (0.0)	34 (6.2)	0.66
Average	10 (90.9)	481 (87.5)	
Overweight	1 (9.1)	35 (6.4)	

* $P < 0.05$ indicates the association is statistically significant, that is, a less than 5% probability this association occurred by chance alone.

Table 58—Association between Body Condition and Health Disorders
Page 2

Body Condition	Health Disorder		P value[a]
	Hemangiosarcoma	**No Hemangiosarcoma**	
	Number (%)	Number (%)	
Puppy			
Underweight	0 (0.0)	72 (13.6)	0.44
Average	9 (100.0)	446 (84.5	
Overweight	0 (0.0)	10 (1.9)	
Adult			
Underweight	0 (0.0)	34 (6.2)	0.65
Average	8 (88.9)	483 (87.5)	
Overweight	1 (11.1)	35 (6.3)	
	Bloat	**No Bloat**	
	Number (%)	Number (%)	
Puppy			
Underweight	13 (19.7)	59 (12.5)	0.15
Average	53 (80.3)	402 (85.4)	
Overweight	0 (0.0)	10 (2.1)	
Adult			
Underweight	7 (10.3)	27 (5.5)	0.07
Average	60 (88.2)	431 (87.4)	
Overweight	1 (1.5)	35 (7.1)	
	Sebaceous Cyst	**No Sebaceous Cyst**	
	Number (%)	Number (%)	
Puppy			
Underweight	8 (17.8)	64 (13.0)	<0.01
Average	33 (73.3)	422 (85.8)	
Overweight	4 (8.9)	6 (1.2)	
Adult			
Underweight	4 (8.5)	30 (5.8)	0.76
Average	40 (85.1)	451 (87.7)	
Overweight	3 (6.4)	33 (6.4)	

[a] $P < 0.05$ indicates the association is statistically significant, that is, a less than 5% probability this association occurred by chance alone.

Table 58—Association between Body Condition and Health Disorders
Page 3

Body Condition	Health Disorder		P value[a]
	Anal sacculitis	**No Anal sacculitis**	
	Number (%)	Number (%)	
Puppy			
Underweight	5 (13.5)	67 (13.4)	0.93
Average	31 (83.8)	424 (84.8)	
Overweight	1 (2.7)	9 (1.8)	
Adult			
Underweight	2 (5.0)	32 (6.1)	0.26
Average	33 (82.5)	458 (87.9)	
Overweight	5 (12.5)	31 (6.0)	
	Bladder Infection	**No Bladder Infection**	
	Number (%)	Number (%)	
Puppy			
Underweight	7 (18.4)	65 (13.0)	0.45
Average	31 (81.6)	424 (85.0)	
Overweight	0 (0.0)	10 (2.0)	
Adult			
Underweight	1 (2.6)	33 (6.3)	0.61
Average	35 (92.1)	456 (87.2)	
Overweight	2 (5.3)	34 (6.5)	
	Urinary incontinence	**No Urinary incontinence**	
	Number (%)	Number (%)	
Puppy			
Underweight	5 (14.7)	67 (13.3)	0.86
Average	28 (82.4)	427 (84.9)	
Overweight	1 (2.9)	9 (1.8)	
Adult	34 (100.0)	503 (100.0)	
Underweight			
Average	4 (11.4)	30 (5.7)	0.32
Overweight	28 (80.0)	463 (88.0)	
	3 (8.6)	33 (6.3)	

[a] $P < 0.05$ indicates the association is statistically significant, that is, a less than 5% probability this association occurred by chance alone.

Table 59—Body Measurements and Health Disorders

Osteosarcoma

Measurement	Bitches			Dogs		
	Yes Number (%)	No Number (%)	P value	Yes Number (%)	No Number (%)	P value [a]
Weight (pounds)						
1st tercile	2 (18.2)	98 (31.5)	0.19	3 (20.0)	73 (34.4)	0.41
2nd tercile	6 (54.6)	90 (28.9)		5 (33.3)	71 (33.5)	
3rd tercile	3 (27.3)	123 (39.6)		7 (46.7)	68 (32.1)	
Height (inches)						
1st tercile	1 (9.1)	60 (19.8)	0.67	1 (7.1)	35 (17.3)	0.50
2nd tercile	8 (72.7)	190 (62.7)		9 (64.3)	128 (63.4)	
3rd tercile	2 (18.2)	53 (17.5)		4 (28.6)	39 (19.3)	
Weight/Height Index						
1st tercile	2 (18.2)	99 (32.7)	0.59	2 (14.3)	71 (35.3)	0.20
2nd tercile	5 (45.5)	107 (35.3)		7 (50.0)	62 (30.9)	
3rd tercile	4 (36.4)	97 (32.0)		5 (35.7)	68 (33.8)	

Melanoma

Measurement	Bitches			Dogs		
	Yes Number (%)	No Number (%)	P value	Yes Number (%)	No Number (%)	P value [a]
Weight (pounds)						
1st tercile	1 (25.0)	99 (31.1)	0.27	4 (50.0)	72 (32.9)	0.60
2nd tercile	0 (0.0)	96 (30.2)		2 (25.0)	74 (33.8)	
3rd tercile	3 (75.0)	123 (38.7)		2 (25.0)	73 (33.3)	
Height (inches)						
1st tercile	0 (0.0)	61 (19.7)	0.60	1 (12.5)	35 (16.8)	0.29
2nd tercile	3 (75.0)	195 (62.9)		7 (87.5)	130 (62.5)	
3rd tercile	1 (25.0)	54 (17.4)		0 (0.0)	43 (20.7)	
Weight/Height Index						
1st tercile	1 (25.0)	100 (32.3)	0.15	5 (62.5)	68 (32.9)	0.20
2nd tercile	0 (0.0)	112 (36.1)		1 (12.5)	68 (32.9)	
3rd tercile	3 (75.0)	98 (31.6)		2 (25.0)	71 (34.3)	

[a] $P < 0.05$ indicates the association is statistically significant, that is, a less than 5% probability this association occurred by chance alone.

Table 59—Body Measurements and Health Disorders
Page 2

Adenocarcinoma

Measurement	Bitches			Dogs		
	Yes Number (%)	No Number (%)	P value	Yes Number (%)	No Number (%)	P value [a]
Weight (pounds)						
1st tercile	2 (33.3)	98 (31.0)	0.44	2 (40.0)	74 (33.3)	0.81
2nd tercile	3 (50.0)	93 (29.4)		1 (20.0)	75 (33.8)	
3rd tercile	1 (16.7)	125 (39.6)		2 (40.0)	73 (32.9)	
Height (inches)						
1st tercile	2 (33.3)	59 (19.2)	0.68	1 (20.0)	35 (16.6)	0.53
2nd tercile	3 (50.0)	195 (63.3)		4 (80.0)	133 (63.0)	
3rd tercile	1 (16.7)	54 (17.5)		0 (0.0)	43 (20.4)	
Weight/Height Index						
1st tercile	3 (50.0)	98 (31.8)	0.59	1 (20.0)	72 (34.3)	0.80
2nd tercile	2 (33.3)	110 (35.7)		2 (40.0)	67 (31.9)	
3rd tercile	1 (16.7)	100 (32.5)		2 (40.0)	71 (33.8)	

Hemangiosarcoma

Measurement	Bitches			Dogs		
	Yes Number (%)	No Number (%)	P value	Yes Number (%)	No Number (%)	P value [a]
Weight (pounds)						
1st tercile	3 (37.5)	97 (30.9)	0.91	0 (0.0)	76 (33.6)	0.37
2nd tercile	2 (25.0)	94 (29.9)		1 (100.0)	75 (33.2)	
3rd tercile	3 (37.5)	123 (39.2)		0 (0.0)	75 (33.2	
Height (inches)						
1st tercile	3 (37.5)	58 (19.0)	0.24	0 (0.0)	36 (16.7)	0.75
2nd tercile	5 (62.5)	193 (63.1)		1 (100.0)	136 (63.3)	
3rd tercile	0 (0.0)	55 (18.0)		0 (0.0)	43 (20.0)	
Weight/Height Index						
1st tercile	2 (25.0)	99 (32.4)	0.90	0 (0.0)	73 (34.1)	0.35
2nd tercile	3 (37.5)	109 (35.6)		1 (100.0)	68 (31.8)	
3rd tercile	3 (37.5)	98 (32.0)		0 (0.0)	73 (34.1)	

[a] $P < 0.05$ indicates the association is statistically significant, that is, a less than 5% probability this association occurred by chance alone.

Table 59—Body Measurements and Health Disorders
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Hypothyroidism

Measurement	Bitches			Dogs		
	Yes Number (%)	No Number (%)	P value	Yes Number (%)	No Number (%)	P value [a]
Weight (pounds)						
1st tercile	14 (25.9)	86 (32.1)	0.05	15 (25.0)	61 (36.5)	0.24
2nd tercile	11 (20.4)	85 (31.7)		24 (40.0)	52 (31.1)	
3rd tercile	29 (53.7)	97 (36.2)		21 (35.0)	54 (32.3)	
Height (inches)						
1st tercile	9 (18.0)	52 (19.7)	0.23	8 (13.6)	28 (17.8)	0.68
2nd tercile	28 (56.0)	170 (64.4)		40 (67.8)	97 (61.8)	
3rd tercile	13 (26.0)	42 (15.9)		11 (18.6)	32 (20.4)	
Weight/Height Index						
1st tercile	12 (24.0)	89 (33.7)	0.13	17 (28.8)	56 (35.9)	0.60
2nd tercile	16 (32.0)	96 (36.4)		21 (35.6)	48 (30.8)	
3rd tercile	22 (44.0)	79 (29.9)		21 (35.6)	52 (33.3)	

Bloat

Measurement	Bitches			Dogs		
	Yes Number (%)	No Number (%)	P value	Yes Number (%)	No Number (%)	P value [a]
Weight (pounds)						
1st tercile	10 (31.3)	90 (31.0)	0.98	10 (29.4)	66 (34.2)	0.32
2nd tercile	10 (31.3)	86 (29.7)		9 (26.5)	67 (34.7)	
3rd tercile	12 (37.5)	114 (39.3)		15 (44.1)	60 (31.1)	
Height (inches)						
1st tercile	4 (12.5)	57 (20.2)	0.58	2 (6.1)	34 (18.6)	0.09
2nd tercile	22 (68.8)	176 (62.4)		21 (63.6)	116 (63.4)	
3rd tercile	6 (18.8)	49 (17.4)		10 (30.3)	33 (18.0)	
Weight/Height Index						
1st tercile	11 (34.4)	90 (31.9)	0.63	11 (33.3)	62 (34.1)	0.95
2nd tercile	9 (28.1)	103 (36.5)		10 (30.3)	59 (32.4)	
3rd tercile	12 (37.5)	89 (31.6)		12 (36.4)	61 (33.5)	

[a] $P < 0.05$ indicates the association is statistically significant, that is, a less than 5% probability this association occurred by chance alone.

Table 59—Body Measurements and Health Disorders
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Bladder Infection

Measurement	Bitches			Dogs		
	Yes Number (%)	No Number (%)	P value	Yes Number (%)	No Number (%)	P value [a]
Weight (pounds)						
1st tercile	10 (38.5)	90 (30.4)	0.44	2 (16.7)	74 (34.4)	0.34
2nd tercile	5 (19.2)	91 (30.7)		2 (16.7)	74 (34.4)	
3rd tercile	11 (42.3)	115 (38.9)		8 (66.7)	67 (31.2	
Height (inches)						
1st tercile	3 (12.0)	58 (20.1)	0.62	0 (0.0)	36 (17.6)	0.17
2nd tercile	17 (68.0)	181 (62.6)		7 (63.6)	130 (63.4)	
3rd tercile	5 (20.0)	50 (17.3)		4 (36.4)	39 (19.0)	
Weight/Height Index						
1st tercile	11 (44.0)	90 (31.1)	0.41	3 (27.3)	70 (34.3)	0.32
2nd tercile	7 (28.0)	105 (36.3)		2 (18.2)	67 (32.8)	
3rd tercile	7 (28.0)	94 (32.5)		6 (54.6)	67 (32.8)	

Incontinence

Measurement	Bitches			Dogs		
	Yes Number (%)	No Number (%)	P value	Yes Number (%)	No Number (%)	P value [a]
Weight (pounds)						
1st tercile	7 (25.0)	93 (31.6)	0.77	2 (33.3)	74 (33.5)	1.0
2nd tercile	9 (32.1)	87 (29.6)		2 (33.3)	74 (33.5)	
3rd tercile	12 (42.9)	114 (38.8)		2 (33.3)	73 (33.0)	
Height (inches)						
1st tercile	3 (11.5)	58 (20.1)	0.57	2 (28.6)	34 (16.3)	0.50
2nd tercile	18 (69.2)	180 (62.5)		3 (42.9)	134 (64.1)	
3rd tercile	5 (19.2)	50 (17.4)		2 (28.6)	41 (19.6)	
Weight/Height Index						
1st tercile	11 (42.3)	90 (31.3)	0.51	2 (33.3)	71 (34.0)	0.63
2nd tercile	8 (30.8)	104 (36.1)		1 (16.7)	68 (32.5)	
3rd tercile	7 (26.9)	94 (32.6)		3 (50.0)	70 (33.5)	

[a] $P < 0.05$ indicates the association is statistically significant, that is, a less than 5% probability this association occurred by chance alone.

Table 59—Body Measurements and Health Disorders
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Any Musculoskeletal Disorder

Measurement	Bitches			Dogs		
	Yes Number (%)	No Number (%)	P value	Yes Number (%)	No Number (%)	P value [a]
Weight (pounds)						
1st tercile	36 (28.1)	64 (33.0)	0.27	24 (27.9)	52 (36.9)	0.17
2nd tercile	35 (27.3)	61 (31.4)		35 (40.7)	41 (29.1)	
3rd tercile	57 (44.5)	69 (35.6)		27 (31.4)	48 (34.0)	
Height (inches)						
1st tercile	21 (16.7)	40 (21.3)	0.37	10 (11.8)	26 (19.9)	0.16
2nd tercile	79 (62.7)	119 (63.3)		54 (63.5)	83 (63.4)	
3rd tercile	26 (20.6)	29 (15.4)		21 (24.7)	22 (16.8)	
Weight/Height Index						
1st tercile	34 (27.0)	67 (35.6)	0.25	26 (31.0)	47 (35.9)	0.62
2nd tercile	47 (37.3)	65 (34.6)		30 (35.7)	39 (29.8)	
3rd tercile	45 (35.7)	56 (29.8)		28 (33.3)	45 (34.4)	

Sebaceous Cyst

Measurement	Bitches			Dogs		
	Yes Number (%)	No Number (%)	P value	Yes Number (%)	No Number (%)	P value [a]
Weight (pounds)						
1st tercile	7 (21.9)	93 (32.1)	0.05	6 (42.9)	70 (32.9)	0.09
2nd tercile	6 (18.8)	90 (31.0)		1 (7.1)	75 (35.2)	
3rd tercile	19 (59.4)	107 (36.9)		7 (50.0)	68 (31.9)	
Height (inches)						
1st tercile	3 (10.0)	58 (20.4)	0.39	4 (33.3)	32 (15.7)	0.02
2nd tercile	21 (70.0)	177 (62.3)		3 (25.0)	134 (65.7)	
3rd tercile	6 (20.0)	49 (17.3)		5 (41.7)	38 (18.6)	
Weight/Height Index						
1st tercile	8 (26.7)	93 (32.8)	0.61	7 (58.3)	66 (32.5)	0.04
2nd tercile	10 (33.3)	102 (35.9)		0 (0.0)	69 (34.0)	
3rd tercile	12 (40.0)	89 (31.3)		5 (41.7)	68 (33.5)	

[a] $P < 0.05$ indicates the association is statistically significant, that is, a less than 5% probability this association occurred by chance alone.

Table 59—Body Measurements and Health Disorders
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Anal Sacculitis

Measurement	Bitches			Dogs		
	Yes Number (%)	No Number (%)	P value	Yes Number (%)	No Number (%)	P value [a]
Weight (pounds)						
1st tercile	10 (43.5)	90 (30.1)	0.39	3 (18.8)	73 (34.6)	0.27
2nd tercile	5 (21.7)	91 (30.4)		5 (31.3)	71 (33.7)	
3rd tercile	8 (34.8)	118 (39.5)		8 (50.0)	67 (31.8)	
Height (inches)						
1st tercile	3 (13.6)	58 (19.9)	0.62	2 (13.3)	34 (16.9)	0.78
2nd tercile	16 (72.7)	182 (62.3)		9 (60.0)	128 (63.7)	
3rd tercile	3 (13.6)	52 (17.8)		4 (26.7)	39 (19.4)	
Weight/Height Index						
1st tercile	9 (40.9)	92 (31.5)	0.54	2 (13.3)	71 (35.5)	0.21
2nd tercile	8 (36.4)	104 (35.6)		6 (40.0)	63 (31.5)	
3rd tercile	5 (22.7)	96 (32.9)		7 (46.7)	66 (33.0)	

Table 60—Association between Adult Bone Structure and Selected Health Disorders

	Health Disorder		P-value[a]
Adult bone structure	**Osteosarcoma**	**No Osteosarcoma**	
	Number (%)	Number (%)	
Small	1 (3.9)	49 (9.1)	
Medium	12 (46.2)	362 (67.5)	
Large	13 (50.0)	125 (23.3)	0.01
	Melanoma	**No Melanoma**	
	Number (%)	Number (%)	
Small	0	50 (9.1)	
Medium	10 (76.9)	364 (66.3)	
Large	3 (23.1)	135 (24.6)	0.49
	Adenocarcinoma	**No Adenocarcinoma**	
	Number (%)	Number (%)	
Small	2 (18.2)	48 (8.7)	
Medium	7 (63.6)	367 (65.3)	
Large	2 (18.2)	136 (24.7)	0.52
	Hemangiosarcoma	**No Hemangiosarcoma**	
	Number (%)	Number (%)	
Small	1 (11.1)	49 (8.9)	
Medium	7 (77.8)	367 (66.4)	
Large	1 (11.1)	137 (24.8)	0.63
	Hypothyroidism	**No Hypothyroidism**	
	Number (%)	Number (%)	
Small	8 (6.9)	42 (9.4)	
Medium	70 (60.3)	304 (68.2)	
Large	38 (32.8)	100 (22.4)	0.63
	Bloat	**No Bloat**	
	Number (%)	Number (%)	
Small	4 (5.9)	46 (9.3)	
Medium	42 (61.8)	332 (67.2)	
Large	22 (32.4)	116 (23.5)	0.22

[a] $P < 0.05$ indicates the association is statistically significant, that is, a less than 5% probability this association occurred by chance alone.

Table 61—Association between Rate of Growth, Body Condition, & Bone Stucture with Musculoskeletal Disorders

Growth / Body Condition	Musculoskeletal Disorder		P value [a]
	Any	None	
Rate of growth as puppy	Number (%)	Number (%)	
Slow	39 (19.4)	55 (18.4)	
Average	160 (79.6)	237 (79.3)	
Maximum	2 (1.0)	7 (2.3)	0.53
Puppy body condition			
Underweight	26 (12.2)	46 (14.2)	
Average	182 (85.5)	273 (84.3)	
Overweight	5 (2.4)	5 (1.5)	0.65
Adult body condition			
Underweight	14 (6.4)	20 (5.8)	
Average	194 (89.0)	297 (86.6)	
Overweight	10 (4.6)	26 (7.6)	0.36
Adult bone structure			
Small boned	18 (8.2)	32 (9.4)	
Medium boned	140 (63.6)	234 (68.4)	
Large boned	62 (28.2)	76 (22.2)	0.27

* $P < 0.05$ indicates the association is statistically significant, that is, a less than 5% probability this association occurred by chance alone.

Table 62—Irritable Bowel Syndrome and Personality Traits

Personality Trait*	Irritable Bowel Syndrome		P value[a]
	Yes (N=41)	No (N=521)	
Active	7.6 ± 1.7	7.1 ± 1.8	0.14
Excitable	6.3 ± 2.0	5.9 ± 2.1	0.29
Aggressive to other dogs	2.2 ± 1.7	2.5 ± 2.0	0.38
Aggressive to people	1.1 ± 0.3	1.4 ± 1.3	0.01
Submissive to other dogs	3.3 ± 2.5	3.5 ± 2.5	0.75
Submissive to people	4.3 ± 3.1	4.4 ± 3.3	0.85
Fearful of people	1.5 ± 1.0	2.3 ± 2.1	0.01
Fearful of loud noises	2.3 ± 2.4	2.7 ± 2.5	0.36
Happy	9.0 ± 1.7	9.1 ± 1.2	0.41
Trainable	8.3 ± 2.0	8.6 ± 1.6	0.21

* Personality traits were scored on a scale of 1 (never, low) to 10 (always, high).

[a] $P < 0.05$ indicates the association is statistically significant, that is, a less than 5% probability this association occurred by chance alone.

Table 63—Association between Daily Diet and Health Disorders

Type of Diet Fed Daily	Disorder		P Value [a]
	Number (%)	Number (%)	
Kidney Disease			
Dry	Yes	No	
Yes	22 (100.0)	532 (98.0)	0.64
No	0	11 (2.0)	
Canned			
Yes	13 (59.1)	302 (55.9)	0.75
No	9 (40.9)	241 (44.4)	
Table/Home Prepared			
Yes	7 (31.8)	215 (39.6)	0.46
No	15 (68.2)	328 (60.4)	
Osteosarcoma			
Dry	Yes	No	
Yes	26 (100.0)	528 (98.0)	0.59
No	0	11 (2.0)	
Canned			
Yes	16 (61.5)	299 (55.5)	0.54
No	10 (38.5)	240 (44.5)	
Table/Home Prepared			
Yes	11 (42.3)	211 (39.2)	0.75
No	15 (57.7)	328 (60.9)	
Melanoma			
Dry	Yes	No	
Yes	13 (100.0)	541 (98.0)	0.77
No	0	11 (2.0)	
Canned			
Yes	9 (69.2)	306 (55.4)	0.32
No	4 (30.8)	246 (44.6)	
Table/Home Prepared			
Yes	2 (15.4)	220 (39.9)	0.07
No	11 (84.6)	332 (60.1)	
Adenocarcinoma			
Dry	Yes	No	
Yes	11 (100.0)	543 (98.0)	0.80
No	0	11 (2.0)	
Canned			
Yes	8 (72.7)	307 (55.4)	0.25
No	3 (27.3)	247 (44.6)	
Table/Home Prepared			
Yes	5 (45.5)	217 (39.2)	0.67
No	6 (54.6)	337 (60.8)	

[a] $P < 0.05$ indicates the association is statistically significant, that is, a less than 5% probability this association occurred by chance alone.

Table 63—Association between Daily Diet and Health Disorders
Page 2

Type of Diet Fed Daily	Disorder		P Value [a]
	Number (%)	Number (%)	
Hemangiosarcoma			
Dry	Yes	No	
Yes	9 (100.0)	545 (98.0)	0.84
No	0	11 (2.0)	
Canned			
Yes	3 (33.3)	312 (56.1)	0.17
No	6 (66.7)	244 (43.9)	
Table/Home Prepared			
Yes	4 (44.4)	218 (39.2)	0.75
No	5 (55.6)	338 (60.8)	
Seizures of unknown origin			
Dry	Yes	No	
Yes	30 (100.0)	524 (97.9)	0.55
No	0 (0.0)	11 (2.1)	
Canned			
Yes	16 (53.3)	299 (55.9)	0.78
No	14 (46.7)	236 (44.1)	
Table/Home Prepared			
Yes	10 (33.3)	212 (39.6)	0.49
No	20 (66.7)	323 (60.4)	
Ear infection			
Dry	Yes	No	
Yes	173 (98.3)	381 (97.9)	0.78
No	3 (1.7)	8 (2.1)	
Canned			
Yes	105 (59.7)	210 (54.0)	0.21
No	71 (40.3)	179 (46.0)	
Table/Home Prepared			
Yes	67 (38.1)	155 (39.9)	0.69
No	109 (61.9)	234 (60.2)	
Hypothyroidism			
Dry	Yes	No	
Yes	113 (96.6)	441 (98.4)	0.20
No	4 (3.4)	7 (1.6)	
Canned			
Yes	65 (55.6)	250 (55.8)	0.96
No	52 (44.4)	198 (44.2)	
Table/Home Prepared			
Yes	49 (41.9)	173 (38.6)	0.52
No	68 (58.1)	275 (61.4)	

[a] $P < 0.05$ indicates the association is statistically significant, that is, a less than 5% probability this association occurred by chance alone.

Table 63—Association between Daily Diet and Health Disorders
Page 3

Type of Diet Fed Daily	Disorder		P Value [a]
	Number (%)	Number (%)	
	Musculoskeletal		
Dry	Yes	No	
Yes	218 (99.1)	336 (97.4)	0.15
No	2 (0.9)	9 (2.6)	
Canned			
Yes	124 (56.4)	191 (55.4)	0.82
No	96 (43.6)	154 (44.6)	
Table/Home Prepared			
Yes	83 (37.7)	139 (40.3)	0.54
No	137 (62.3)	206 (59.7)	

[a] $P < 0.05$ indicates the association is statistically significant, that is, a less than 5% probability this association occurred by chance alone.

Table 64—Association between Principle Ingredients in Dry Food and Kidney Disease

First Ingredient on Dry Food Label	Kidney Disease		P Value [a]
	Number (%)	Number (%)	
Red Meat	Yes	No	
Yes	2 (16.7)	101 (29.3)	0.34
No	10 (83.3)	244 (70.7)	
White Meat			
Yes	8 (66.7)	198 (57.4)	0.52
No	4 (33.3)	147 (42.6)	
Plant Origin			
Yes	2 (16.7)	41 (11.9)	0.62
No	10 (83.3)	304 (88.1)	

[a] $P < 0.05$ indicates the association is statistically significant, that is, a less than 5% probability this association occurred by chance alone.

Table 65—Association between Chemical Exposures and Health Disorders

Chemical Exposure	Disorder		P Value
	Number (%)	Number (%)	
	Osteosarcoma		
Lawn Chemicals	Yes	No	
Yes	10 (38.5)	243 (46.6)	0.41
No	16 (61.5)	278 (53.4)	
Flea/tick Dips	Yes	No	
Yes	5 (20.8)	102 (20.9)	1.0
No	19 (79.2)	387 (79.1)	
Flea/tick Drops	Yes	No	
Yes	13 (52.0)	314 (61.0)	0.37
No	12 (48.0)	201 (39.0)	
Flea Pills	Yes	No	
Yes	5 (20.8)	69 (14.2)	0.37
No	19 (79.2)	416 (85.8)	
Flea/tick Shampoo	Yes	No	
Yes	15 (60.0)	188 (38.1)	0.03
No	10 (40.0)	305 (61.9)	
Flea/tick Sprays	Yes	No	
Yes	10 (40.0)	140 (28.6)	0.22
No	15 (60.0)	350 (71.4)	
	Melanoma		
Lawn Chemicals	Yes	No	
Yes	5 (38.5)	248 (46.4)	0.57
No	8 (61.5)	286 (53.6)	
Flea/tick Dips	Yes	No	
Yes	2 (16.7)	105 (21.0)	0.72
No	10 (83.3)	396 (79.0)	
Flea/tick Drops	Yes	No	
Yes	7 (63.6)	320 (60.5)	0.83
No	4 (36.4)	209 (39.5)	
Flea Pills	Yes	No	
Yes	2 (16.7)	72 (14.5)	0.83
No	10 (83.3)	425 (85.5)	
Flea/tick Shampoo	Yes	No	
Yes	6 (50.0)	197 (38.9)	0.44
No	6 (50.0)	309 (61.1)	
Flea/tick Sprays	Yes	No	
Yes	7 (58.3)	143 (28.4)	0.02
No	5 (41.7)	360 (71.6)	

Table 65—Association between Chemical Exposures and Health Disorders
Page 2

Chemical Exposure	Disorder		P Value
	Number (%)	Number (%)	
	Adenocarcinoma		
Lawn Chemicals	Yes	No	
Yes	5 (50.0)	248 (46.2)	0.81
No	5 (50.0)	289 (53.8)	
Flea/tick Dips	Yes	No	
Yes	2 (22.2)	105 (20.8)	0.92
No	7 (77.8)	399 (79.2)	
Flea/tick Drops	Yes	No	
Yes	6 (66.7)	321 (60.5)	0.71
No	3 (33.3)	210 (39.5)	
Flea Pills	Yes	No	
Yes	0(0.0)	74 (14.8)	0.21
No	9 (100)	426 (85.2)	
Flea/tick Shampoo	Yes	No	
Yes	6 (54.5)	197 (38.9)	0.29
No	5 (45.5)	310 (61.1)	
Flea/tick Sprays	Yes	No	
Yes	3 (33.3)	147 (29.1)	0.78
No	6 (66.7)	359 (70.9)	

Chemical Exposure	Disorder		P Value
	Number (%)	Number (%)	
	Hemangiosarcoma		
Lawn Chemicals	Yes	No	
Yes	3 (37.5)	250 (46.4)	0.62
No	5 (62.5)	289 (53.6)	
Flea/tick Dips	Yes	No	
Yes	2 (25.2)	105 (20.8)	0.77
No	6 (75.0)	400 (79.2)	
Flea/tick Drops	Yes	No	
Yes	7 (77.8)	320 (60.3)	0.29
No	2 (22.2)	211 (39.7)	
Flea Pills	Yes	No	
Yes	1 (14.3)	73 (14.5)	0.98
No	6 (85.7)	429 (85.5)	
Flea/tick Shampoo	Yes	No	
Yes	4 (50.0)	199 (39.0)	0.53
No	4 (50.0)	311 (61.0)	
Flea/tick Sprays	Yes	No	
Yes	5 (62.5)	145 (28.6)	0.04
No	3 (37.5)	362 (71.4)	

Table 65—Association between Chemical Exposures and Health Disorders
Page 3

Chemical Exposure	Disorder		P Value
	Number (%)	Number (%)	
	Seizure (unknown origin)		
Lawn Chemicals	Yes	No	
Yes	15 (51.7)	238 (45.9)	0.54
No	14 (48.3)	280 (54.1)	
Flea/tick Dips	Yes	No	
Yes	1 (3.9)	106 (21.8)	0.03
No	25 (96.1)	381 (78.2)	
Flea/tick Drops	Yes	No	
Yes	13 (50.0)	314 (61.1)	0.26
No	13 (50.0)	200 (38.9)	
Flea Pills	Yes	No	
Yes	6 (22.2)	68 (14.1)	0.24
No	21 (77.8)	414 (85.9)	
Flea/tick Shampoo	Yes	No	
Yes	13 (44.8)	190 (38.9)	0.52
No	16 (55.2)	299 (61.1)	
Flea/tick Sprays	Yes	No	
Yes	9 (34.6)	141 (28.8)	0.53
No	17 (65.4)	348 (71.2)	

Chemical Exposure	Disorder		P Value
	Number (%)	Number (%)	
	Ear Infection		
Lawn Chemicals	Yes	No	
Yes	79 (46.2)	174 (46.3)	0.99
No	92 (53.8)	202 (53.7)	
Flea/tick Dips	Yes	No	
Yes	33 (20.5)	74 (21.0)	0.89
No	128 (79.5)	278 (79.0)	
Flea/tick Drops	Yes	No	
Yes	101 (60.1)	226 (60.8)	0.89
No	67 (39.9)	146 (39.2)	
Flea Pills	Yes	No	
Yes	34 (21.4)	40 (11.4)	<0.01
No	125 (78.6)	310 (88.6)	
Flea/tick Shampoo	Yes	No	
Yes	68 (41.7)	135 (38.0)	0.42
No	95 (58.3)	220 (62.0)	
Flea/tick Sprays	Yes	No	
Yes	58 (35.6)	92 (26.1)	0.03
No	105 (64.4)	260 (73.9)	

Table 66—History of Bloat in First-Degree Relatives

	N	%
Has dam ever bloated?		
Yes	60	10.6
No	342	60.5
Unknown / missing	163	27.8
Has sire ever bloated?		
Yes	52	9.2
No	318	56.3
Unknown / missing	195	34.5
Have littermates ever bloated?		
Yes	72	12.7
No	250	44.3
Unknown / missing	243	43.0
Has any offspring ever bloated?		
Yes	46	8.1
No	188	33.3
Unknown / missing	79	14.0
Not applicable	252	44.6

Table 67—Association of bloat with history of bloat in first-degree relatives

History of bloat in first-degree relative	Bloat		P-value
	Yes	No	
	N (%)	N (%)	
Yes	42 (91.3)	126 (55.0)	<0.001
No	4 (8.7)	103 (45.0)	

Table 68—Association of bloat with diet of Irish Setters

Diet type	Bloat		P-value
	Yes	No	
	N (%)	N (%)	
Dry food only	14 (20.0)	110 (22.2)	0.67
Dry food + other foods	56 (80.0)	385 (77.8)	

Section VI. Mortality Related Information

Figure 10—Cause of 242 Deaths for All Irish Setters

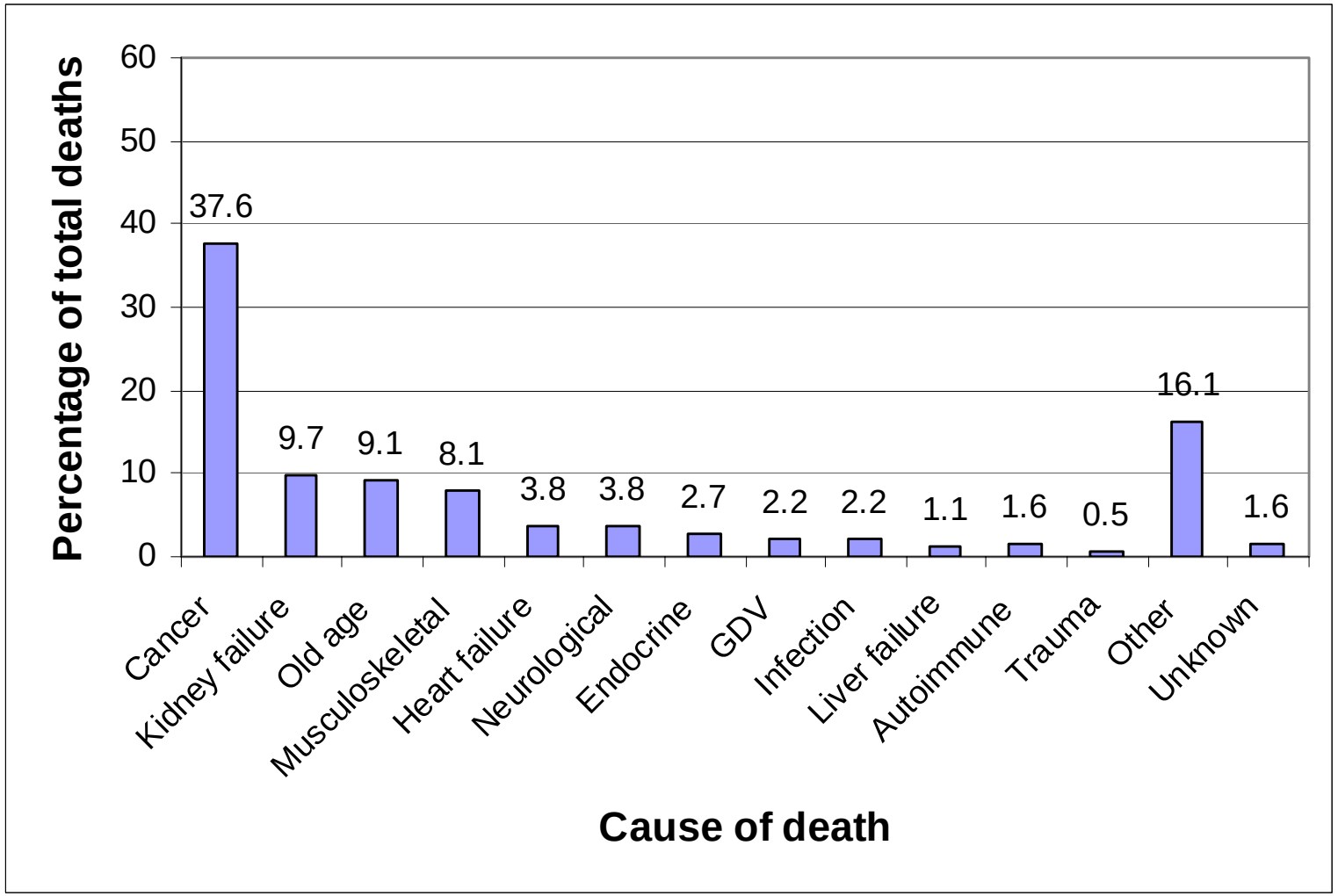


Table 69—Veterinary Confirmed Cause of 186 Deaths by Age

Cause of death	Age at death (years)			
	3 – 7.9	8 – 12.9	13+	All Ages
	N (%)	N (%)	N (%)	N (%)
Cancer	10 (50.0)	51 (41.5)	9 (20.9)	70 (37.6)
Kidney failure	2 (10.0)	12 (9.8)	4 (9.3)	18 (9.7)
Old age	--	3 (2.4)	14 (32.6)	17 (9.1)
Musculoskeletal disease	--	11 (8.9)	4 (9.3)	15 (8.1)
Heart failure	--	5 (4.1)	2 (4.7)	7 (3.8)
Neurological disease	3 (15.0)	4 (3.3)	--	7 (3.8)
Endocrine disease	--	4 (3.3)	1 (2.3)	5 (2.7)
Gastric dilatation-volvulus	1 (5.0)	3 (2.4)	--	4 (2.2)
Infection	--	4 (3.3)	--	4 (2.2)
Liver failure	--	2 (1.6)	--	2 (1.1)
Autoimmune disease	--	1 (0.8)	2 (4.7)	3 (1.6)
Trauma	--	--	1 (2.3)	1 (0.5)
Other cause	4 (20.0)	20 (16.3)	6 (14.0)	30 (16.1)
Unknown cause	--	3 (2.4)	--	3 (1.6)
Total	20 (100.0)	123 (100.0)	43 (100.0)	186 (100.0)

Figure 11—Causes of 20 Veterinary-Confirmed Deaths in Irish Setters at 3 – 7.9 years of age

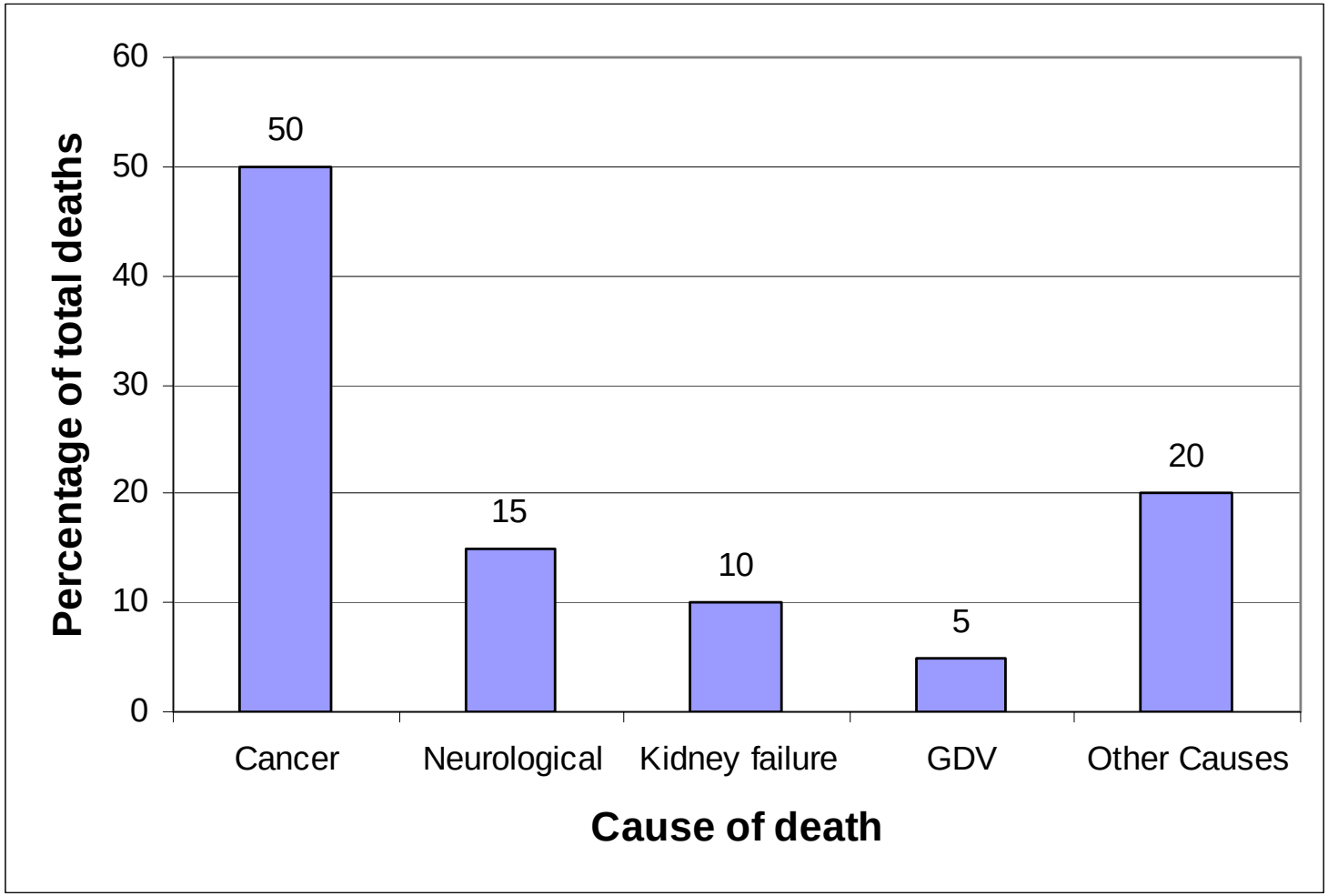


Figure 12—Cause of 123 Veterinary-Confirmed Deaths in Irish Setters at 8 – 12.9 Years of Age

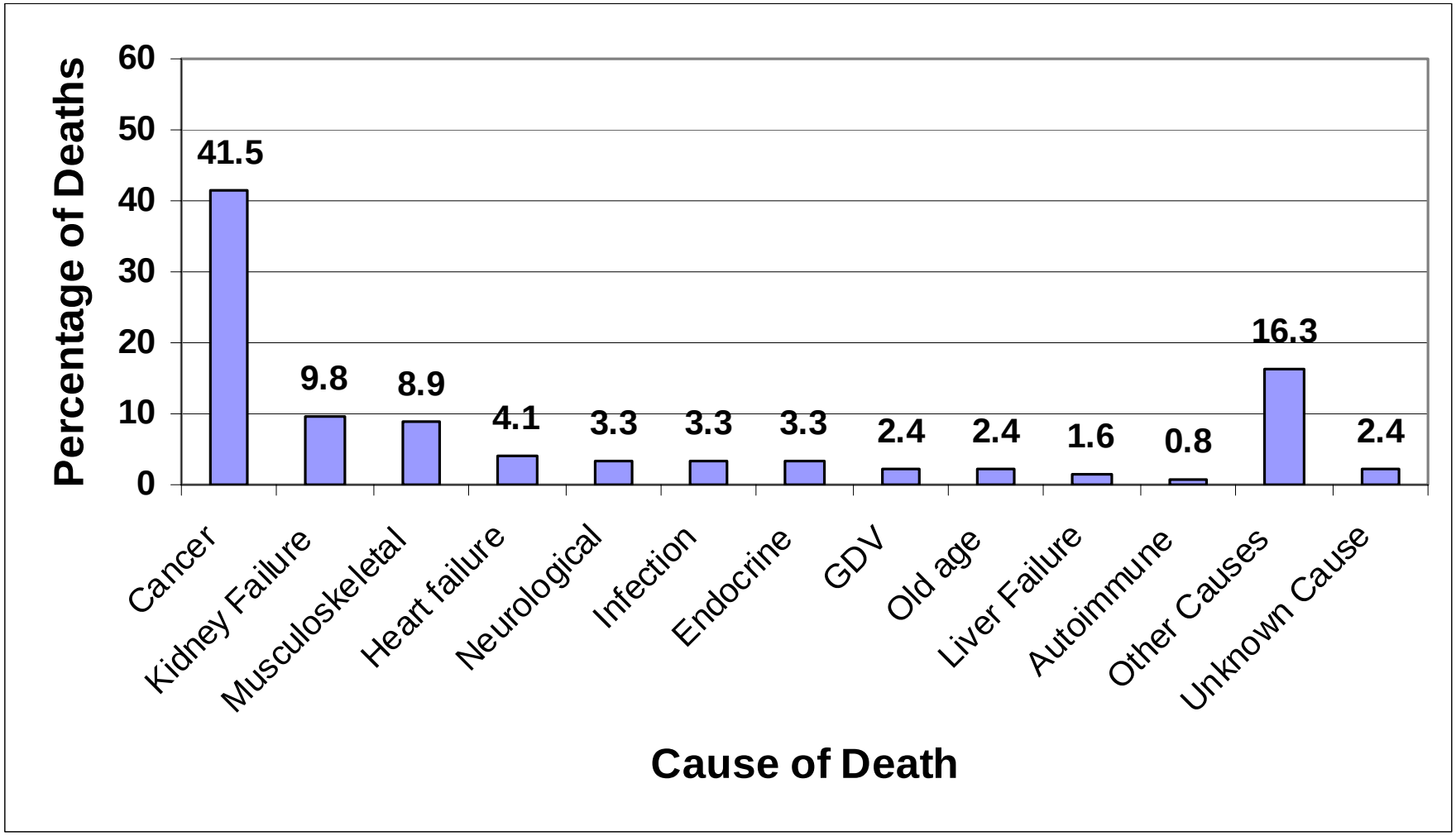


Figure 13—Cause of 43 Veterinary-Confirmed Deaths in Irish Setters at 13+ Years of Age

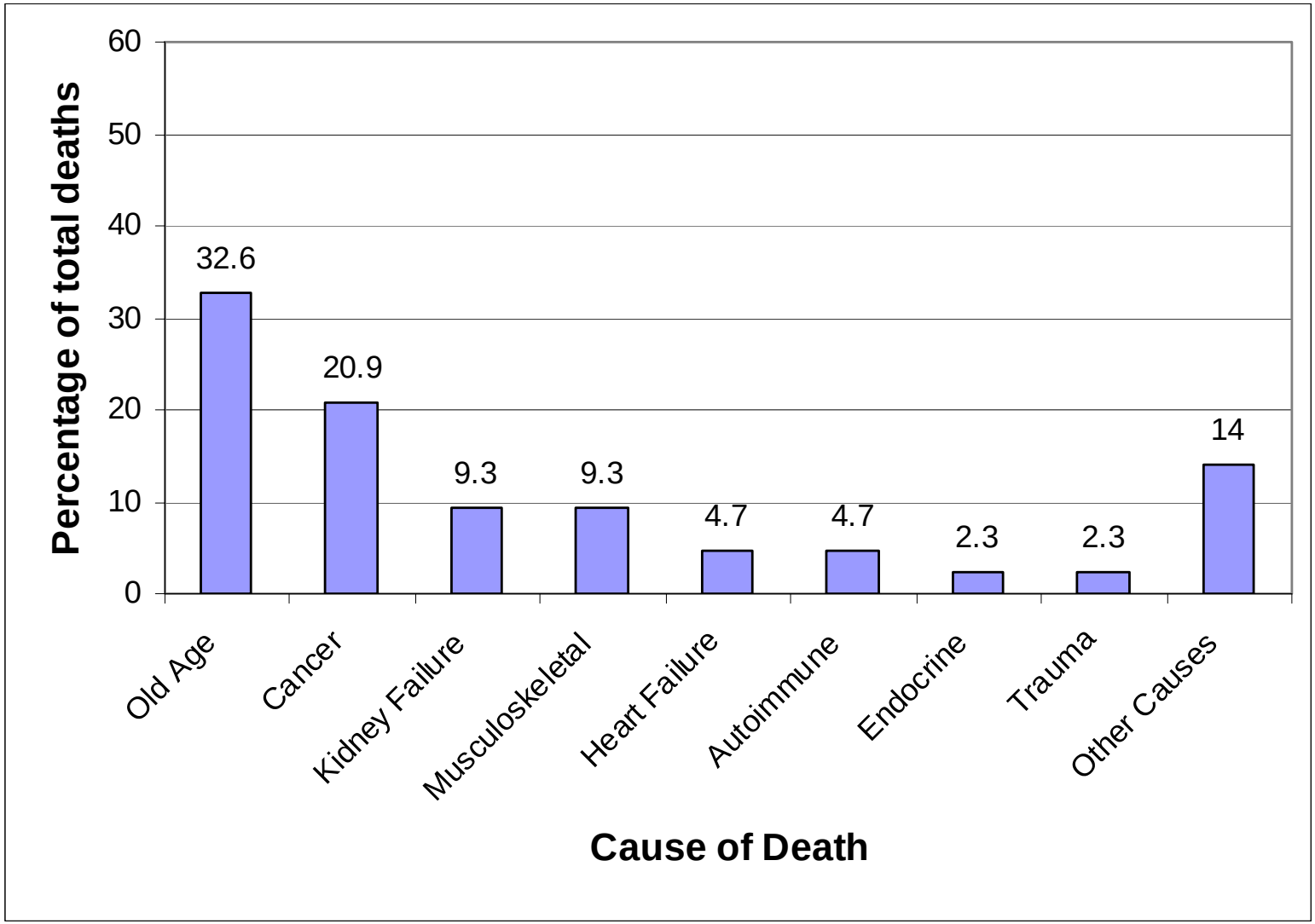


Table 70—Veterinary Confirmed Cause of 81 Deaths by Age for Dogs

Cause of death	Age at death (years)			
	3 – 7.9	8 – 12.9	13+	All Ages
	N (%)	N (%)	N (%)	N (%)
Cancer	6 (75.0)	23 (39.0)	1 (7.1)	30 (37.0)
Kidney failure	--	4 (6.8)	1 (7.1)	5 (6.2)
Old age	--	--	4 (28.6)	4 (4.9)
Musculoskeletal disease	--	7 (11.9)	2 (14.3)	9 (11.1)
Heart failure	--	4 (6.9)	1 (7.1)	5 (6.2)
Neurological disease	2 (25.0)	2 (3.4)	--	4 (4.9)
Endocrine disease	--	1 (1.7)	--	1 (1.2)
Gastric dilatation-volvulus	--	1 (1.7)	--	1 (1.2)
Infection	--	4 (6.8)	--	4 (4.9)
Liver failure	--	2 (3.4)	--	2 (2.5)
Autoimmune disease	--	--	1 (7.1)	1 (1.2)
Trauma	--	--	--	--
Other cause	--	11 (18.6)	4 (28.6)	15 (18.5)
Unknown cause	--	--	--	--
Total	8 (100.0)	59 (100.0)	14 (100.0)	81 (100.0)

Table 71—Veterinary Confirmed Cause of 105 Deaths by Age for Bitches

Cause of death	Age at death (years)			
	3 – 7.9	8 – 12.9	13+	All Ages
	N (%)	N (%)	N (%)	N (%)
Cancer	4 (33.3)	28 (43.8)	8 (27.6)	40 (38.1)
Kidney failure	2 (16.7)	8 (12.5)	3 (10.3)	13 (12.4)
Old age	--	3 (4.7)	10 (34.5)	13 (12.4)
Musculoskeletal disease	--	4 (6.3)	2 (6.9)	6 (5.7)
Heart failure	--	1 (1.6)	1 (3.5)	2 (1.9)
Neurological disease	1 (8.3)	2 (3.1)	--	3 (2.9)
Endocrine disease	--	3 (4.7)	1 (3.5)	4 (3.8)
Gastric dilatation-volvulus	1 (8.3)	2 (3.1)	--	3 (2.9)
Infection	--	--	--	--
Liver failure	--	--	--	--
Autoimmune disease	--	1 (1.6)	1 (3.5)	2 (1.9)
Trauma	--	--	1 (3.5)	1 (1.0)
Other cause	4 (33.3)	9 (14.1)	2 (6.9)	15 (14.3)
Unknown cause	--	3 (4.7)	--	3 (2.9)
Total	12 (100.0)	64 (100.0)	29 (100.0)	105 (100.0)

Table 72—Age at Death in Years for the Fourteen Most Common Causes of Death

Cause of death	Veterinary Confirmed		All Deaths [a]	
	N (%)	Mean ±SD	N (%)	Mean ±SD
Cancer	70 (37.6)	10.7±2.4	82 (33.9)	10.7±2.4
Old age	17 (9.1)	14.5±1.8	33 (13.6)	14.2±1.6
Heart failure	7 (3.8)	11.2±2.1	9 (3.7)	10.6±2.5
Kidney failure	18 (9.7)	10.9±2.6	20 (8.3)	11.0±2.5
Liver failure	2 (1.1)	11.3±2.0	2 (0.8)	11.3±2.0
GDV	4 (2.2)	10.6±2.9	6 (2.5)	9.0±4.0
Musculoskeletal	15 (8.1)	12.1±1.6	22 (9.1)	12.4±1.6
Autoimmune disease	3 (1.6)	12.1±2.3	3 (1.2)	12.1±2.3
Neurological	7 (3.8)	8.4±2.8	7 (2.9)	8.4±2.8
Trauma	1 (0.5)	15.3± --	1 (0.4)	15.3± --
Infection	4 (2.2)	9.7±1.7	5 (2.1)	10.3±2.0
Endocrine disease	5 (2.7)	11.5±2.1	6 (2.5)	11.7±2.0
Other	30 (16.1)	10.6±2.3	34 (14.0)	10.6±2.4
Unknown	3 (1.6)	10.5±1.6	12 (5.0)	10.7±2.4
All causes	186 (100.0)	11.1±2.5	242 (100.0)	11.3±2.6

[a] Veterinary confirmed deaths plus unconfirmed deaths

Table 73—Age at Death in Years by Place Where Irish Setter Obtained

Source	Bitches		Dogs	
	N (%)	Mean ±SD	N (%)	Mean ±SD
Breeder – self	56 (40.3)	11.6±2.5	34 (33.7)	10.7±2.4
Breeder – kennel	26 (18.7)	11.8±2.8	20 (19.8)	10.7±3.1
Breeder – home	50 (36.0)	11.3±2.8	44 (43.6)	11.1±2.1
Shelter or rescue	1 (0.7)	12.4±--	--	--
Pet store	1 (0.7)	15.4±--	1 (1.0)	14.0±--
Adopted from private party	5 (3.6)	9.8±2.6	2 (2.0)	14.5±4.7

Table 74—Age at Death by Gender and Body Measurements

Measurement	Bitches		Dogs	
	N (%)	Mean ±SD	N (%)	Mean ±SD
Height (inches)[a]				
22 - 25	68 (50.4)	11.6±2.8	4 (4.1)	8.1±4.0
25.1 – 26	45 (33.3)	11.4±2.5	5 (5.1)	11.4±4.2
26.1 – 27.9	17 (12.6)	11.3±3.1	39 (39.8)	11.5±2.2
28+	5 (3.7)	12.1±2.1	50 (51.0)	10.8±2.4
Weight (pounds)[b]				
30 - 59	42 (30.7)	11.4±2.9	3 (3.0)	10.5±1.5
60 – 67	65 (47.5)	11.7±2.9	9 (8.9)	10.3±3.4
68 – 75	26 (19.0)	11.0±2.0	40 (39.6)	11.1±2.7
76+	4 (2.9)	12.8±1.5	49 (48.5)	11.0±2.2
Weight/Height index				
1.35 – 2.34	50 (37.0)	11.2±3.2	8 (8.3)	11.4±1.4
2.35 – 2.53	48 (35.6)	11.7±2.5	12 (12.4)	10.4±2.4
2.54 – 2.75	26 (19.3)	11.7±2.3	30 (30.9)	10.7±2.9
2.76+	11 (8.2)	11.4±1.9	47 (48.5)	11.1±2.5
Puppy body condition[c]				
Underweight	14 (10.5)	11.4±2.4	20 (20.2)	10.7±3.4
Average	118 (88.7)	11.5±2.8	78 (78.8)	11.0±2.3
Overweight	1 (0.8)	9.1± --	1 (1.0)	11.3± --
Adult body condition[d]				
Underweight	4 (2.9)	13.1±1.8	16 (15.7)	11.4±3.3
Average	127 (91.4)	11.6±2.6	83 (81.4)	10.9±2.4
Overweight	8 (5.8)	10.0±3.8	3 (2.9)	10.5±1.9

[a] Height information missing for 4 bitches and 5 dogs
[b] Weight information missing for 2 bitches and 2 dogs
[c] Puppy body condition missing for 6 bitches and 4 dogs
[d] Adult body condition missing for 1 dog

Figure 14—Association between Age at Death and Age at Death of Dam

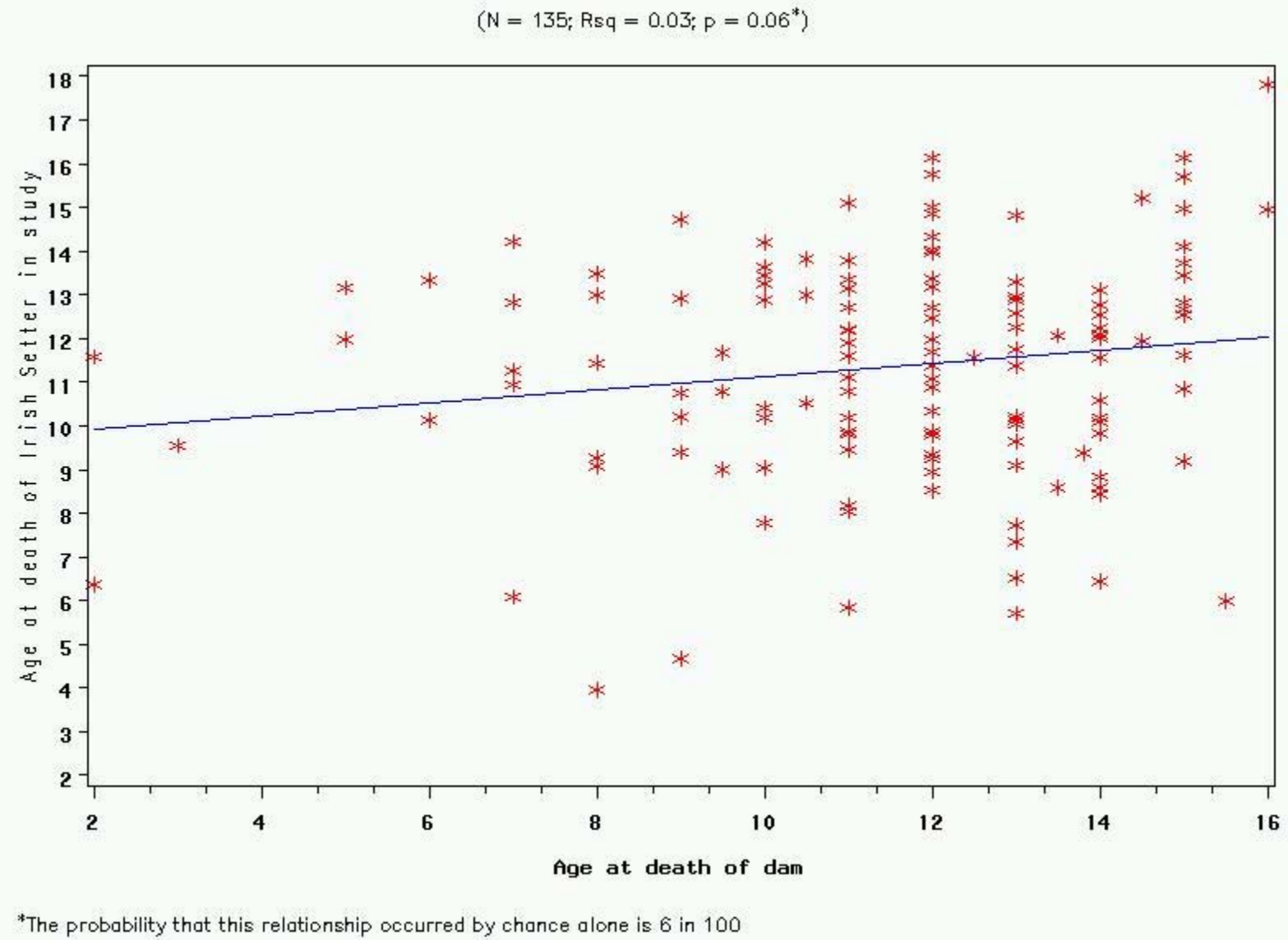


Figure 15—Association between Age at Death and Age at Death of Sire

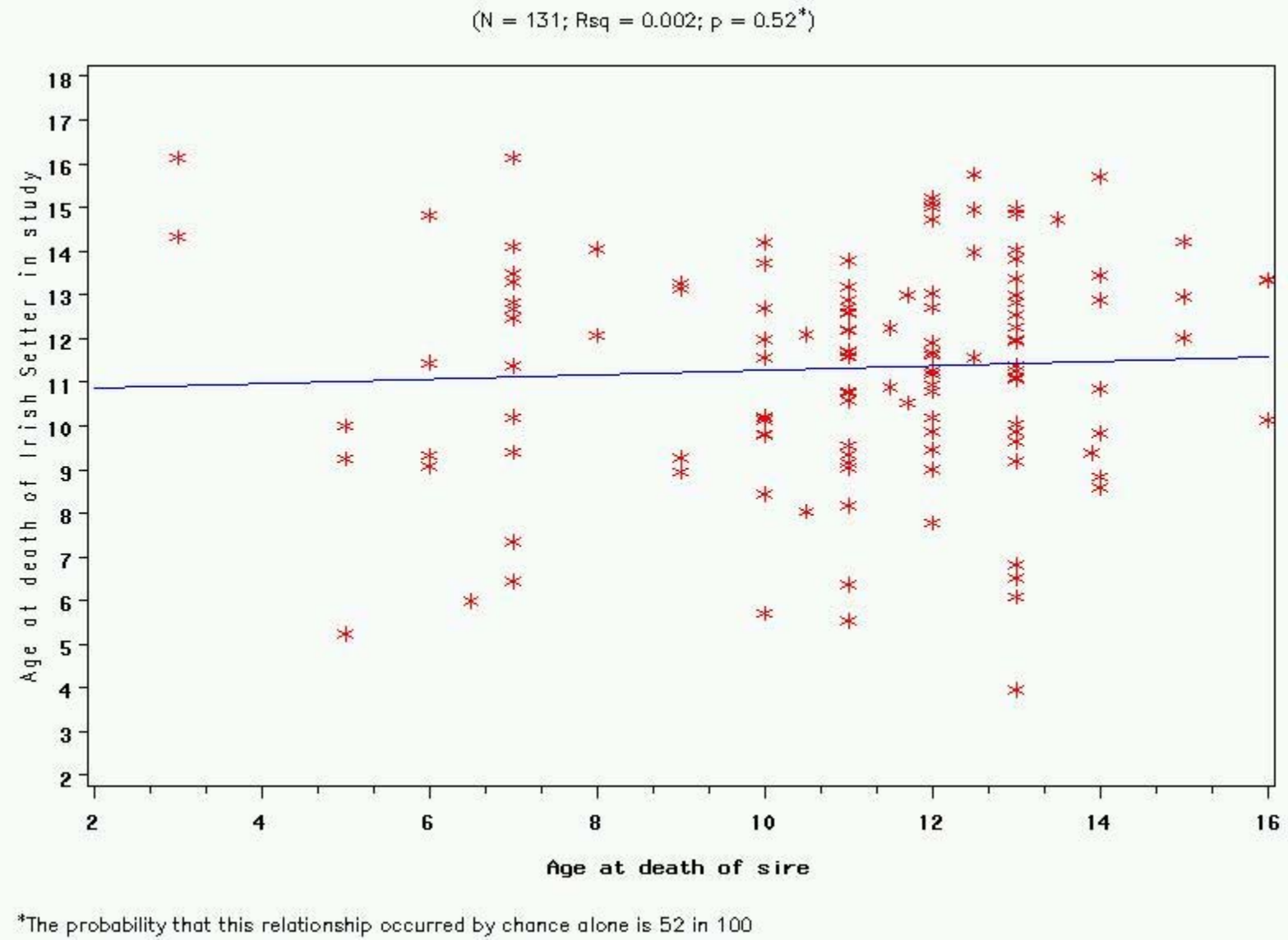


Table 75—Age & Gender Specific Death Rates per 1,000 Dog Years (All Deaths)

Category	0 –2.9 years		3 – 7.9 years		8 – 12.9 years		13+ years	
	N	Rate	N	Rate	N	Rate	N	Rate
All Irish Setters	1	0.6	25	9.8	150	105.1	66	428.4 [a]
Bitches	0	--	15	9.8	79	87.4	45	381.8
Dogs	1	1.5	10	9.6	71	135.6	21	580.1

[a] This indicates that 42.8% of individuals in this age group will die each year, assuming a 10 year lifespan

Figure 16—Age- and Gender- Specific Death Rates

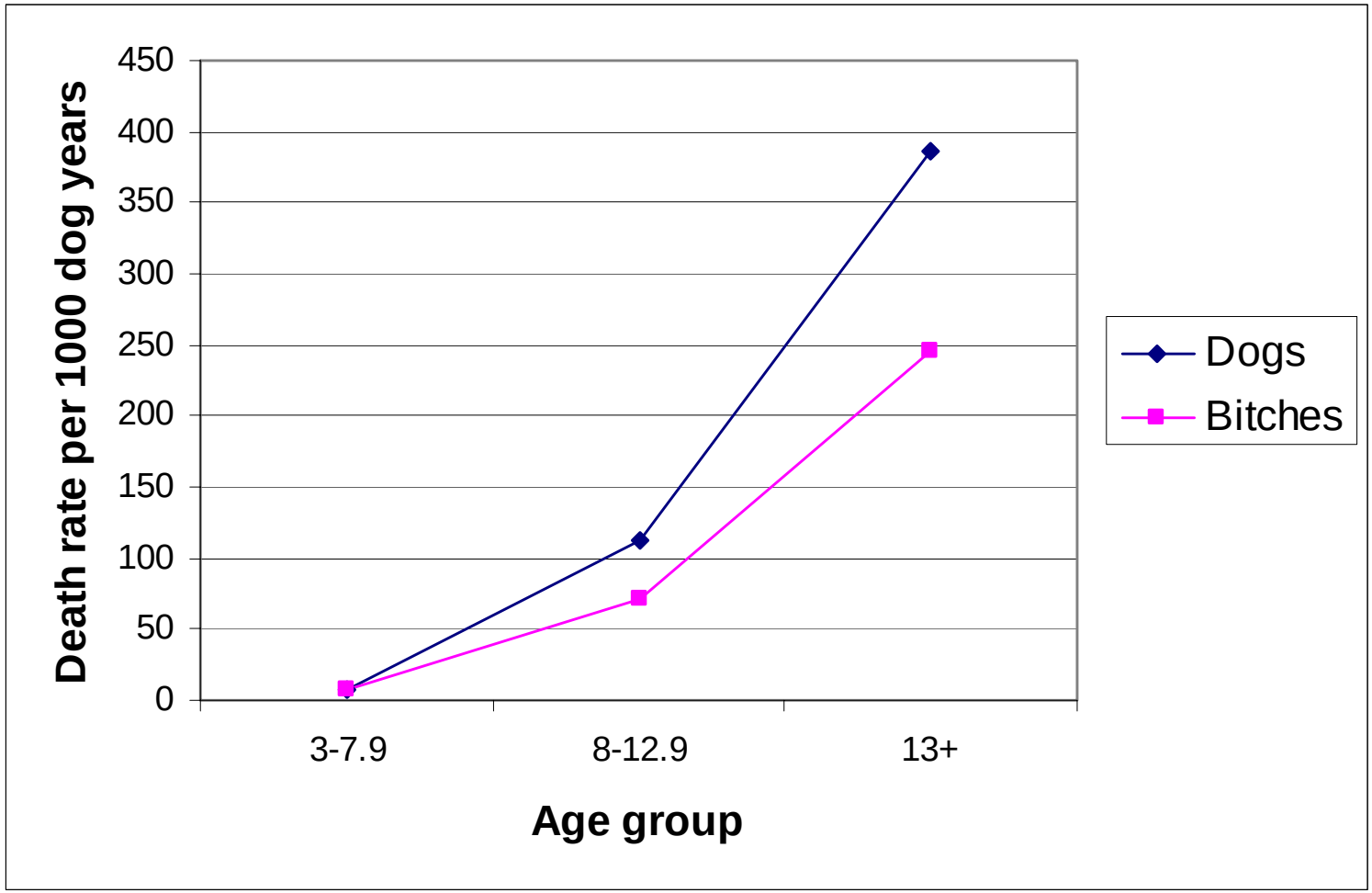


Table 76—Cause & Gender Specific Death Rates per 1,000 Dog Years

Cause of Death Confirmed by Veterinarian	All Irish Setters		Bitches		Dogs	
	N [a] (%)	Rate	N [a] (%)	Rate	N [a] (%)	Rate
Cancer	70 (37.6)	12.1	40 (38.1)	11.4	30 (37.0)	13.2
Kidney failure	18 (9.7)	3.1	13 (12.4)	3.7	5 (6.2)	2.2
Old age	17 (9.1)	2.9	13 (12.4)	3.7	4 (5.0)	1.8
Musculoskeletal	15 (8.1)	2.6	6 (5.7)	1.7	9 (11.1)	4.0
Heart failure	7 (3.7)	1.2	2 (1.9)	0.6	5 (6.2)	2.2
Neurological disease	7 (3.7)	1.2	3 (2.9)	0.9	4 (5.0)	1.8
Endocrine disease	5 (2.7)	0.9	4 (3.8)	1.1	1 (1.2)	0.4
GDV	4 (2.2)	0.7	3 (2.9)	0.9	1 (1.2)	1.4
Infection	4 (2.2)	0.7	--	--	4 (5.0)	1.8
Liver failure	2 (1.1)	0.3	--	--	2 (2.5)	0.9
Autoimmune disease	3 (1.6)	0.5	2 (1.9)	0.6	1 (1.2)	0.4
Trauma	1 (0.5)	0.2	1 (1.0)	0.3	--	--
Other causes	30 (16.1)	5.2	15 (14.3)	4.3	15 (18.5)	6.6
Unknown cause	3 (1.6)	0.5	3 (2.9)	0.9	--	--
All confirmed deaths	186 (100)	32.2	105 (100)	29.9	81 (100)	35.6
Cause of death not confirmed by veterinarian	56	9.7	34	9.7	22	9.7
All deaths	242	41.9	139	39.6	103	45.3

[a] Number of deaths that were confirmed by a veterinarian

Figure 17—Cause- and Gender-Specific Death Rates for 186 Irish Setters

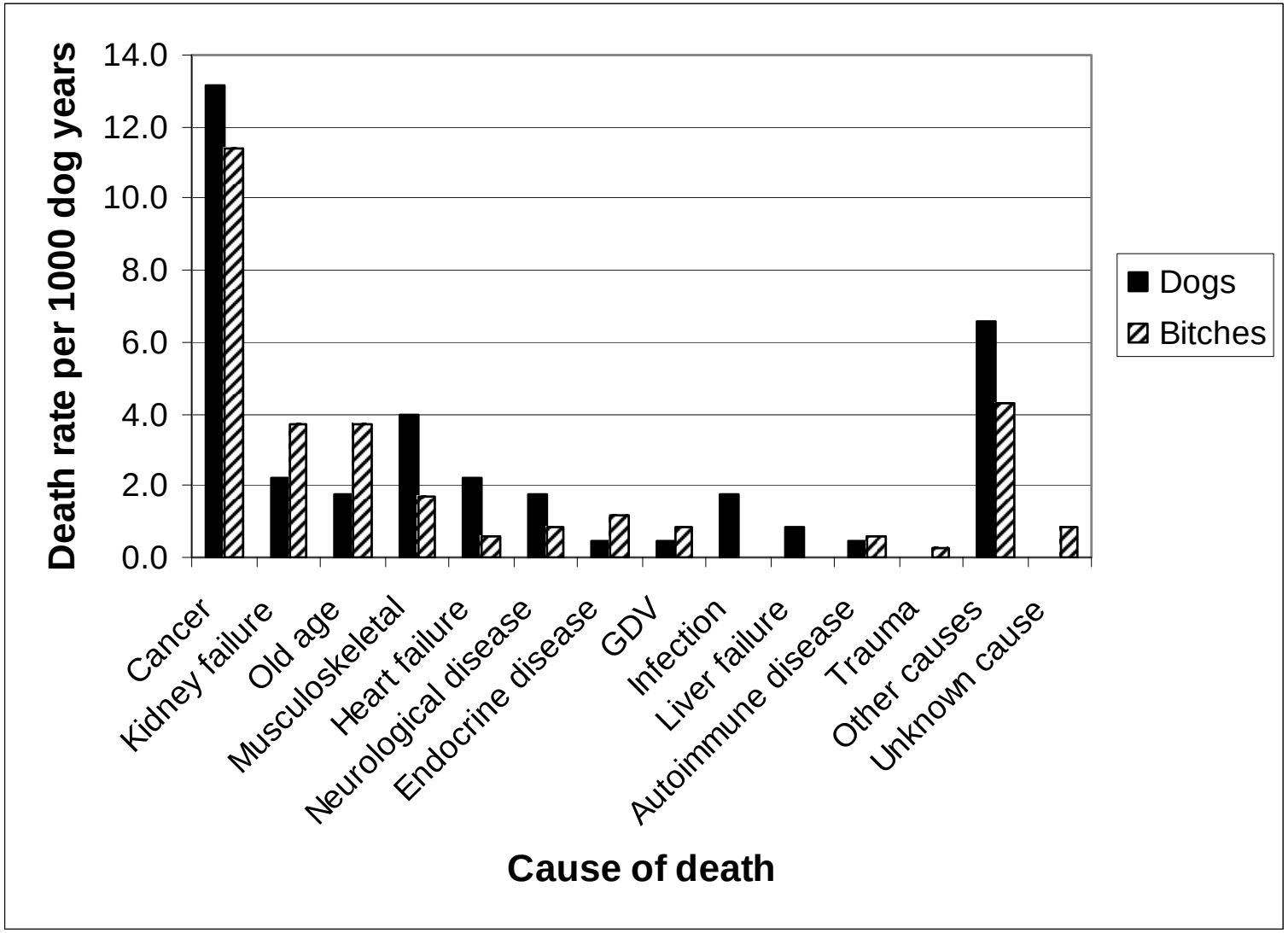


Table 77—Age & Cause Specific Death Rates per 1,000 Dog Years for the Three Leading Veterinary Confirmed Causes of Death (Excludes Unknown Causes)

Cause of death	3 – 7.9 years		8 – 12.9 years		13+ years	
	N	Rate	N	Rate	N	Rate
Bitches						
Cancer	4	2.6	35	38.7	8	68.4 [a]
Kidney failure	2	1.3	9	10.0	3	25.5
Old age	--	--	3	3.3	10	85.5
Dogs						
Cancer	6	5.8	23	44.0	1	27.6
Musculoskeletal	--	--	7	13.4	2	55.6
Heart failure	--	--	4	7.6	1	27.6

[a] This indicates that 6.8% of individuals in this age group will die due to a neoplasm each year, assuming a 10 year life span

Table 78—Total Years of Potential Life Lost Due to Veterinary Confirmed Causes of Death Among 186 Irish Setters

Cause of Death	No. of Irish Setters	Average Age at Death (± SD)	Years of Potential Life Lost
Cancer	70	10.7 ± 2.4	28.0
Kidney failure	18	10.9 ± 2.6	3.6
Old Age	17	14.5 ± 1.8	0.0
Musculoskeletal disease	15	12.1 ± 1.6	0.0
Heart Failure	7	11.2 ± 2.1	0.0
Neurological disease	7	8.4 ± 2.8	18.9
Endocrine disease	5	11.5 ± 2.1	0.0
Gastric dilatation volvulus	4	10.6 ± 2.9	2.0
Infection	4	9.7 ± 1.7	5.6
Autoimmune disease	3	12.1 ± 2.3	0.0
Liver failure	2	11.3 ± 2.0	0.0
Trauma	1	15.3 ± --	0.0
Other cause	30	10.6 ± 2.3	15.0
Unknown cause	3	10.5 ± 1.6	1.8
All causes	186	11.1 ± 2.6	

Figure 18—Differences in Proportion of Veterinary-Confirmed Deaths Due to Cancer between 1997 and 2003

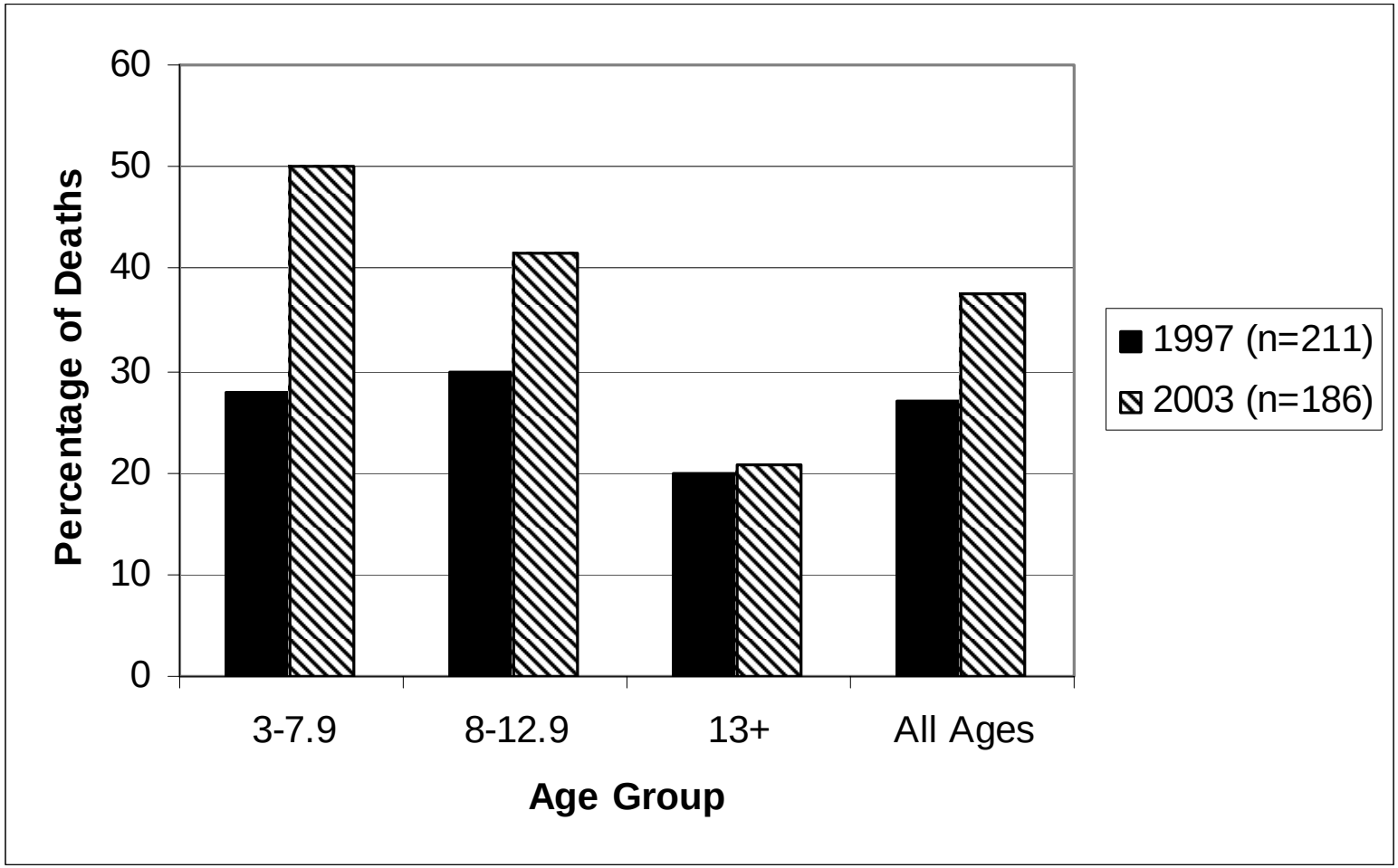


Table 79—Lifetime Risk of the Most Common Veterinary-Confirmed Health Disorders. The risk was based on 242 Irish Setters that died

Disorders	Number of dogs affected		Lifetime risk[b]
	N[a]	%	
Malignant neoplasms			
Any	95	39.3	1 in 3
Osteosarcoma	22	9.1	1 in11
Melanoma	8	3.3	1 in 30
Adenocarcinoma	8	3.3	1 in 30
Hemangiosarcoma	7	2.9	1 in 34
Lymphoma	3	1.2	1 in 83
Mast Cell	3	1.2	1 in 83
Carcinoma, unspecified	10	4.1	1 in 24
Sarcoma, unspecified	3	1.2	1 in 83
Non-malignant neoplasms			
Any	50	20.7	1 in 5
Lipoma	24	9.9	1 in 10
Cyst	12	5.0	1 in 20
Papilloma	5	2.1	1 in 48
Histiocytoma	5	2.1	1 in 48
Cardiovascular			
Any	25	10.3	1 in 10
Heart failure	9	3.7	1 in 27
Heart murmur	8	3.3	1 in 30
Cardiomyopathy	5	2.1	1 in 48

[a] Among specific disorders only those with 3 or more cases have been listed
[b] Rounded up or down

Table 79—Lifetime Risk of the Most Common Veterinary-Confirmed Health Disorders. The risk was based on 242 Irish Setters that died (cont'd)—Page 2

Disorders	Number of dogs affected		Lifetime risk
	N	%	
Allergies			
Any	39	16.1	1 in 6
Allergic dermatitis due to:			
Food	17	7.0	1 in 14
Fleas	16	6.6	1 in 15
Inhaled allergens	11	4.6	1 in 22
Insect bite	3	1.2	1 in 83
Endocrine			
Any	72	29.8	1 in 3
Hypothyroid	54	22.3	1 in 4
Pancreatitis	6	2.5	1 in 40
Diabetes mellitus	6	2.5	1 in 40
Hyperthyroid	6	2.5	1 in 40
Cushing's	6	2.5	1 in 40
Gastrointestinal			
Any	83	34.3	1 in 3
Bloat / Torsion	45	18.6	1 in 5
Bloat with torsion	33	13.6	1 in 7
Bloat without torsion	9	3.7	1 in 27
Irritable bowel syndrome	19	7.9	1 in 13
Gastritis	10	4.1	1 in 24
Colitis	9	3.7	1 in 27
Excessive vomiting	6	2.5	1 in 40
Excessive diarrhea	7	2.9	1 in 34
Megaesophagus	6	2.5	1 in 40
Malabsorption	4	1.7	1 in 59
Foreign body	6	2.5	1 in 40

Table 79—Lifetime Risk of the Most Common Veterinary-Confirmed Health Disorders. The risk was based on 242 Irish Setters that died (cont'd)—Page 3

Disorders	Number of dogs affected		Lifetime risk
	N	%	
Hematological			
Any	8	3.3	1 in 30
Thrombocytopenia	4	1.7	1 in 59
Urinary tract			
Any	48	19.8	1 in 5
Bladder infection	18	7.4	1 in 14
Kidney failure	17	7.0	1 in 14
Urinary incontinence	13	5.4	1 in 19
Kidney disease	6	2.5	1 in 40
Neurological			
Any	30	12.4	1 in 8
Seizures of unknown origin	13	5.4	1 in 19
Nerve degeneration	8	3.3	1 in 30
Musculoskeletal			
Any	105	43.4	1 in 2
Spondylosis	44	18.2	1 in 5
Arthritis	38	15.7	1 in 6
Hip dysplasia	18	7.4	1 in 14
Degenerative disk disease	15	6.2	1 in 16
Hypertrophic osteodystrophy	9	3.7	1 in 27
Eosinophilic panosteitis	4	1.7	1 in 59
Osteochondritis	3	1.2	1 in 83
Eye			
Any	31	12.8	1 in 8
Cataracts	15	6.2	1 in 16
Entropion	6	2.5	1 in 40
Injury	4	1.7	1 in 59

Table 79—Lifetime Risk of the Most Common Veterinary-Confirmed Health Disorders. The risk was based on 242 Irish Setters that died (cont'd)—Page 4

Disorders	Number of dogs affected		Lifetime risk
	N	%	
Reproductive (female)		% of 139 deaths in Irish Setter bitches	
Any	35	25.2	1 in 4
Chronic false pregnancy	10	7.2	1 in 14
Pyometra	9	6.5	1 in 15
Difficult whelping (dystocia)	4	2.9	1 in 34
Irregular heat cycles	3	2.2	1 in 45
Mastitis	3	2.2	1 in 45
Uterine inertia	3	2.2	1 in 45
Malformed puppies	3	2.2	1 in 45
Reproductive (male)		% of 103 deaths in Irish Setter dogs	
Any	21	20.4	1 in 5
Enlarged prostate	10	9.7	1 in 10
Infertility	8	7.8	1 in 13
Abnormal semen	6	5.8	1 in 17
Testicular atrophy	5	4.9	1 in 20
Skin			
Any	64	26.5	1 in 4
Dull, dry coat	22	9.1	1 in 11
Sebaceous cyst	19	7.9	1 in 13
Hot spots	10	4.1	1 in 24
Lick granuloma	8	3.3	1 in 30
Demodectic mange	5	2.1	1 in 48

Table 79—Lifetime Risk of the Most Common Veterinary-Confirmed Health Disorders. The risk was based on 242 Irish Setters that died (cont'd)—Page 5

Disorders	Number of dogs affected		Lifetime risk
	N	%	
Liver			
Any	7	2.9	1 in 34
Liver disease	4	1.7	1 in 59
Pancreatic insufficiency	3	1.2	1 in 83
Respiratory			
Any	13	5.4	1 in 19
Laryngeal paralysis	11	4.6	1 in 22
Trauma/Accidents			
Any	48	19.8	1 in 5
Laceration requiring stitches	21	8.7	1 in 11
Fracture	16	6.6	1 in 15
Lameness requiring treatment	9	3.7	1 in 27
Birth defects			
Any	30	12.4	1 in 8
Umbilical hernia	28	11.6	1 in 9
Bacterial			
Any	50	20.7	1 in 5
Anal sacculitis	16	6.6	1 in 15
Pneumonia	9	3.7	1 in 27
Cystitis	8	3.3	1 in 30
Interdigital infection	8	3.3	1 in 30
Lyme disease	5	2.1	1 in 48
Prostatitis	5	2.1	1 in 48
Tonsillitis	3	1.2	1 in 83

Table 79—Lifetime Risk of the Most Common Veterinary-Confirmed Health Disorders. The risk was based on 242 Irish Setters that died (cont'd)—Page 6

Disorders	Number of dogs affected		Lifetime risk
	N	%	
Viral			
Any	15	6.2	1 in 16
Parvovirus	9	3.7	1 in 27
Tracheobronchitis (kennel cough)	6	2.5	1 in 40
Fungal			
Any	5	2.1	1 in 48
Yeast infection	3	1.2	1 in 83
Parasitic			
Any	82	33.9	1 in 3
Tapeworms	31	12.8	1 in 8
Roundworms	27	11.2	1 in 9
Fleas	19	7.9	1 in 13
Hookworms	16	6.6	1 in 15
Whipworms	15	6.2	1 in 16
Giardia	14	5.8	1 in 17
Coccidia	5	2.1	1 in 48
Ears			
Any	73	30.2	1 in 3
Chronic or intermittent infection	68	28.1	1 in 4
Deafness	6	2.5	1 in 40
Hematoma	5	2.1	1 in 48
Nose & Mouth			
Any	26	10.7	1 in 9
Gingivitis	11	4.6	1 in 22
Underbite	3	1.2	1 in 83
Pigment change in nose	3	1.2	1 in 83

Table 79—Lifetime Risk of the Most Common Veterinary-Confirmed Health Disorders. The risk was based on 242 Irish Setters that died (cont'd)—Page 7

Disorders	Number of dogs affected		Lifetime risk
	N	%	
Behavioral			
Any	7	2.9	1 in 34

Table 80—Lifetime Risk of the Most Common Veterinary-Confirmed Health Disorders in Irish Setters, Golden Retrievers, Akitas, Airedale Terriers, and Wirehaired Pointing Griffons

Disorders	Lifetime risk[a]				
	Irish Setter	Golden Retriever	Akita	Airedale Terrier	Wirehaired Pointing Griffon
Malignant neoplasms					
Any	1 in 3	1 in 2	1 in 5	1 in 2	1 in 5
Osteosarcoma	1 in 11	1 in 20	1 in 23	1 in 42	--
Melanoma	1 in 30	1 in 33	--	1 in 16	--
Carcinoma, unspecified	1 in 24	--	1 in 56	1 in 10	--
Adenocarcinoma	1 in 30	--	1 in 56	1 in 29	--
Hemangiosarcoma	1 in 34	1 in 5	1 in 56	1 in 17	--
Mast cell	1 in 83	1 in 13	--	1 in 53	--
Lymphoma	1 in 83	1 in 8	1 in 20	1 in 19	--
Non-malignant neoplasms					
Any	1 in 5	1 in 13	1 in 12	1 in 3	1 in 8
Lipoma	1 in 10	1 in 13	1 in 56	1 in 8	--
Cyst	1 in 20	--	--	1 in 53	--
Papilloma	1 in 48	--	1 in 42	1 in 7	--
Histiocytoma	1 in 48	--	--	1 in 71	--

Table 80—Lifetime Risk of the Most Common Veterinary-Confirmed Health Disorders in Irish Setters, Golden Retrievers, Akitas, Airedale Terriers, and Wirehaired Pointing Griffons

Disorders	Lifetime risk[a]				
	Irish Setter	Golden Retriever	Akita	Airedale Terrier	Wirehaired Pointing Griffon
Cardiovascular					
Any	1 in 10	1 in 7	1 in 16	1 in 5	--
Heart murmur	1 in 30	1 in 25	--	1 in 6	--
Heart failure	1 in 27	1 in 25	--	1 in 42	--
Cardiomyopathy	1 in 48	1 in 50	--	1 in 42	--
Allergies					
Any	1 in 6	1 in 4	1 in 4	1 in 4	1 in 16
Allergic dermatitis due to:					
Food	1 in 14	1 in 25	1 in 13	1 in 15	1 in 16
Fleas	1 in 15	1 in 6	1 in 13	1 in 6	--
Inhaled allergens	1 in 22	1 in 17	1 in 10	1 in 16	--
Insect bite	1 in 83	--	1 in 27	--	--
Endocrine					
Any	1 in 3	1 in 4	1 in 3	1 in 6	--
Hypothyroid	1 in 4	1 in 4	1 in 3	1 in 13	--
Pancreatitis	1 in 40	--	--	1 in 16	--

Table 80—Lifetime Risk of the Most Common Veterinary-Confirmed Health Disorders in Irish Setters, Golden Retrievers, Akitas, Airedale Terriers, and Wirehaired Pointing Griffons

Disorders	Lifetime risk[a]				
	Irish Setter	Golden Retriever	Akita	Airedale Terrier	Wirehaired Pointing Griffon
Endocrine (Cont'd)					
Diabetes mellitus	1 in 40	--	--	--	--
Hyperthyroid	1 in 40	1 in 100	--	--	--
Cushing's	1 in 40	1 in 50	--	1 in 53	--
Gastrointestinal					
Any	1 in 3	1 in 8	1 in 3	1 in 7	1 in 16
Bloat with torsion	1 in 7	1 in 33	1 in 5	1 in 53	1 in 16
Irritable bowel syndrome	1 in 13	--	--	--	--
Gastritis	1 in 24	1 in 33	--	1 in 34	--
Colitis	1 in 27	1 in 100	--	1 in 23	--
Bloat without torsion	1 in 27	1 in 50	1 in 27	--	--
Excessive vomiting	1 in 40	1 in 33	1 in 56	--	--
Excessive diarrhea	1 in 34	1 in 25	1 in 42	1 in 34	--
Megaesophagus	1 in 40	--	--	--	--
Malabsorption	1 in 59	1 in 100	--	--	--
Foreign body	1 in 40	--	--	1 in 29	--

Table 80—Lifetime Risk of the Most Common Veterinary-Confirmed Health Disorders in Irish Setters, Golden Retrievers, Akitas, Airedale Terriers, and Wirehaired Pointing Griffons

Disorders	Lifetime risk[a]				
	Irish Setter	Golden Retriever	Akita	Airedale Terrier	Wirehaired Pointing Griffon
Hematological					
Any	1 in 30	1 in 25	1 in 56	1 in 21	--
Thrombocytopenia	1 in 59	1 in 100	--	--	--
Urinary tract					
Any	1 in 5	1 in 8	1 in 6	1 in 4	1 in 4
Bladder infection	1 in 14	1 in 14	1 in 13	1 in 23	--
Urinary incontinence	1 in 19	--	1 in 9	1 in 9	1 in 16
Kidney failure	1 in 14	1 in 25	1 in 56	1 in 8	--
Kidney disease	1 in 40	1 in 33	--	1 in 11	1 in 8
Neurological					
Any	1 in 8	1 in 7	1 in 12	1 in 9	--
Seizures of unknown origin	1 in 19	1 in 13	1 in 23	1 in 17	--
Nerve degeneration	1 in 30	1 in 50	--	--	--
Musculoskeletal					
Any	1 in 2	1 in 3	1 in 3	1 in 3	1 in 8
Spondylosis	1 in 5	1 in 33	1 in 20	1 in 34	--

Table 80—Lifetime Risk of the Most Common Veterinary-Confirmed Health Disorders in Irish Setters, Golden Retrievers, Akitas, Airedale Terriers, and Wirehaired Pointing Griffons

Disorders	Lifetime risk[a]				
	Irish Setter	Golden Retriever	Akita	Airedale Terrier	Wirehaired Pointing Griffon
Musculoskeletal (Cont'd)					
Arthritis	1 in 6	1 in 8	1 in 6	1 in 26	1 in 8
Hip dysplasia	1 in 14	1 in 6	1 in 10	1 in 7	--
Hypertrophic osteodystrophy	1 in 27	--	--	--	--
Osteochondritis	1 in 83	1 in 50	--	--	--
Degenerative disk disease	1 in 16	1 in 50	1 in 16	1 in 53	--
Eosinophilic panosteitis	1 in 59	1 in 33	--	1 in 71	--
Eye					
Any	1 in 8	1 in 5	1 in 14	1 in 6	1 in 4
Cataracts	1 in 16	1 in 8	1 in 42	1 in 9	--
Entropion	1 in 40	1 in 100	1 in 56	--	--
Injury	1 in 59	1 in 100	--	1 in 53	--
Reproductive (female)					
Any	1 in 4	1 in 5	1 in 4	1 in 6	1 in 2
Chronic false pregnancy	1 in 14	1 in 100	--	1 in 13	--
Pyometra	1 in 15	1 in 25	1 in 13	1 in 13	1 in 6
Difficult whelping (dystocia)	1 in 34	1 in 50	--	1 in 26	1 in 6

Table 80—Lifetime Risk of the Most Common Veterinary-Confirmed Health Disorders in Irish Setters, Golden Retrievers, Akitas, Airedale Terriers, and Wirehaired Pointing Griffons

Disorders	Lifetime risk[a]				
	Irish Setter	Golden Retriever	Akita	Airedale Terrier	Wirehaired Pointing Griffon
Reproductive (female) (Cont'd)					
Irregular heat cycles	1 in 45	1 in 100	--	--	--
Mastitis	1 in 45	1 in 50	1 in 26	--	1 in 3
Uterine inertia	1 in 45	--	--	--	--
Malformed puppies	1 in 45	1 in 100	--	--	--
Reproductive (male)					
Any	1 in 5	1 in 7	1 in 12	1 in 7	1 in 10
Infertility	1 in 13	1 in 100	1 in 29	--	--
Enlarged prostate	1 in 10	1 in 33	--	1 in 10	--
Abnormal semen	1 in 17	1 in 100	--	--	--
Testicular atrophy	1 in 20	1 in 100	--	--	--
Skin					
Any	1 in 4	1 in 2	1 in 3	1 in 3	1 in 16
Dull, dry coat	1 in 11	1 in 25	1 in 23	1 in 42	--
Sebaceous cyst	1 in 13	1 in 7	--	1 in 7	--

Table 80—Lifetime Risk of the Most Common Veterinary-Confirmed Health Disorders in Irish Setters, Golden Retrievers, Akitas, Airedale Terriers, and Wirehaired Pointing Griffons

Disorders	Lifetime risk[a]				
	Irish Setter	Golden Retriever	Akita	Airedale Terrier	Wirehaired Pointing Griffon
Skin (Cont'd)					
Lick granuloma	1 in 30	--	1 in 56	--	--
Hot spots	1 in 24	1 in 3	1 in 6	1 in 5	1 in 16
Demodectic mange	1 in 48	--	1 in 56	--	--
Liver					
Any	1 in 34	--	--	--	--
Pancreatic insufficiency	1 in 83	--	--	--	--
Liver disease	1 in 59	--	--	--	--
Respiratory					
Any	1 in 19	--	--	--	--
Laryngeal paralysis	1 in 22	--	--	--	--
Trauma/Accidents					
Any	1 in 5	1 in 6	1 in 7	1 in 6	1 in 8
Laceration requiring stitches	1 in 11	1 in 13	1 in 12	1 in 19	--
Fracture	1 in 15	1 in 25	1 in 27	1 in 19	1 in 16
Lameness requiring treatment	1 in 27	1 in 20	1 in 32	1 in 15	--

Table 80—Lifetime Risk of the Most Common Veterinary-Confirmed Health Disorders in Irish Setters, Golden Retrievers, Akitas, Airedale Terriers, and Wirehaired Pointing Griffons

Disorders	Lifetime risk[a]				
	Irish Setter	Golden Retriever	Akita	Airedale Terrier	Wirehaired Pointing Griffon
Birth defects					
Any	1 in 8	1 in 100	1 in 42	1 in 29	--
Umbilical hernia	1 in 9	1 in 100	--	1 in 34	--
Bacterial					
Any	1 in 5	1 in 3	1 in 7	1 in 4	1 in 5
Anal sacculitis	1 in 15	1 in 33	1 in 20	1 in 21	1 in 16
Lyme disease	1 in 48	1 in 33	--	1 in 15	1 in 16
Interdigital infection	1 in 30	1 in 100	1 in 42	1 in 71	--
External ear (otitis externa)	1 in 83	1 in 9	1 in 42	1 in 23	1 in 16
Pneumonia	1 in 27	1 in 50	--	1 in 42	--
Cystitis	1 in 30	1 in 20	--	1 in 42	--
Tonsillitis	1 in 83	1 in 100	--	1 in 71	--
Prostatitis	1 in 48	1 in 100	1 in 56	1 in 42	--
Fungal					
Any	1 in 48	1 in 48	1 in 32	1 in 42	--
Yeast infection	1 in 83	--	1 in 56	1 in 71	--

Table 80—Lifetime Risk of the Most Common Veterinary-Confirmed Health Disorders in Irish Setters, Golden Retrievers, Akitas, Airedale Terriers, and Wirehaired Pointing Griffons

Disorders	Lifetime risk[a]				
	Irish Setter	Golden Retriever	Akita	Airedale Terrier	Wirehaired Pointing Griffon
Viral					
Any	1 in 16	1 in 8	1 in 18	1 in 17	--
Tracheobronchitis (kennel cough)	1 in 40	1 in 10	1 in 27	1 in 21	--
Parvovirus	1 in 27	1 in 50	--	--	--
Parasitic					
Any	1 in 3	1 in 2	1 in 3	1 in 3	1 in 5
Tapeworms	1 in 8	--	1 in 7	1 in 9	1 in 16
Roundworms	1 in 9	1 in 10	1 in 42	1 in 12	--
Fleas	1 in 13	--	1 in 10	1 in 8	1 in 16
Giardia	1 in 17	1 in 13	1 in 18	1 in 42	1 in 16
Whipworms	1 in 16	1 in 11	1 in 20	1 in 29	--
Hookworms	1 in 15	1 in 17	1 in 42	1 in 42	--
Coccidia	1 in 48	1 in 14	1 in 27	1 in 29	--

Table 80—Lifetime Risk of the Most Common Veterinary-Confirmed Health Disorders in Irish Setters, Golden Retrievers, Akitas, Airedale Terriers, and Wirehaired Pointing Griffons

Disorders	Lifetime risk[a]				
	Irish Setter	Golden Retriever	Akita	Airedale Terrier	Wirehaired Pointing Griffon
Ears					
Any	1 in 3	1 in 4	1 in 8	1 in 4	1 in 5
Hematoma	1 in 48	--	--	1 in 9	--
Deafness	1 in 40	--	--	--	--
Hearing problems	--	1 in 20	1 in 42	1 in 15	--
Chronic or intermittent infection	1 in 4	1 in 6	1 in 13	1 in 10	1 in 5
Nose & Mouth					
Any	1 in 9	1 in 25	1 in 14	1 in 6	--
Underbite	1 in 83	--	--	--	--
Gingivitis	1 in 22	--	--	1 in 16	--
Pigment change in nose	1 in 83	--	--	--	--
Behavioral					
Any	1 in 34	1 in 100	1 in 27	1 in 29	1 in 16

[a] Rounded up or down

Figure 19—Survival of 565 Irish Setters by Gender

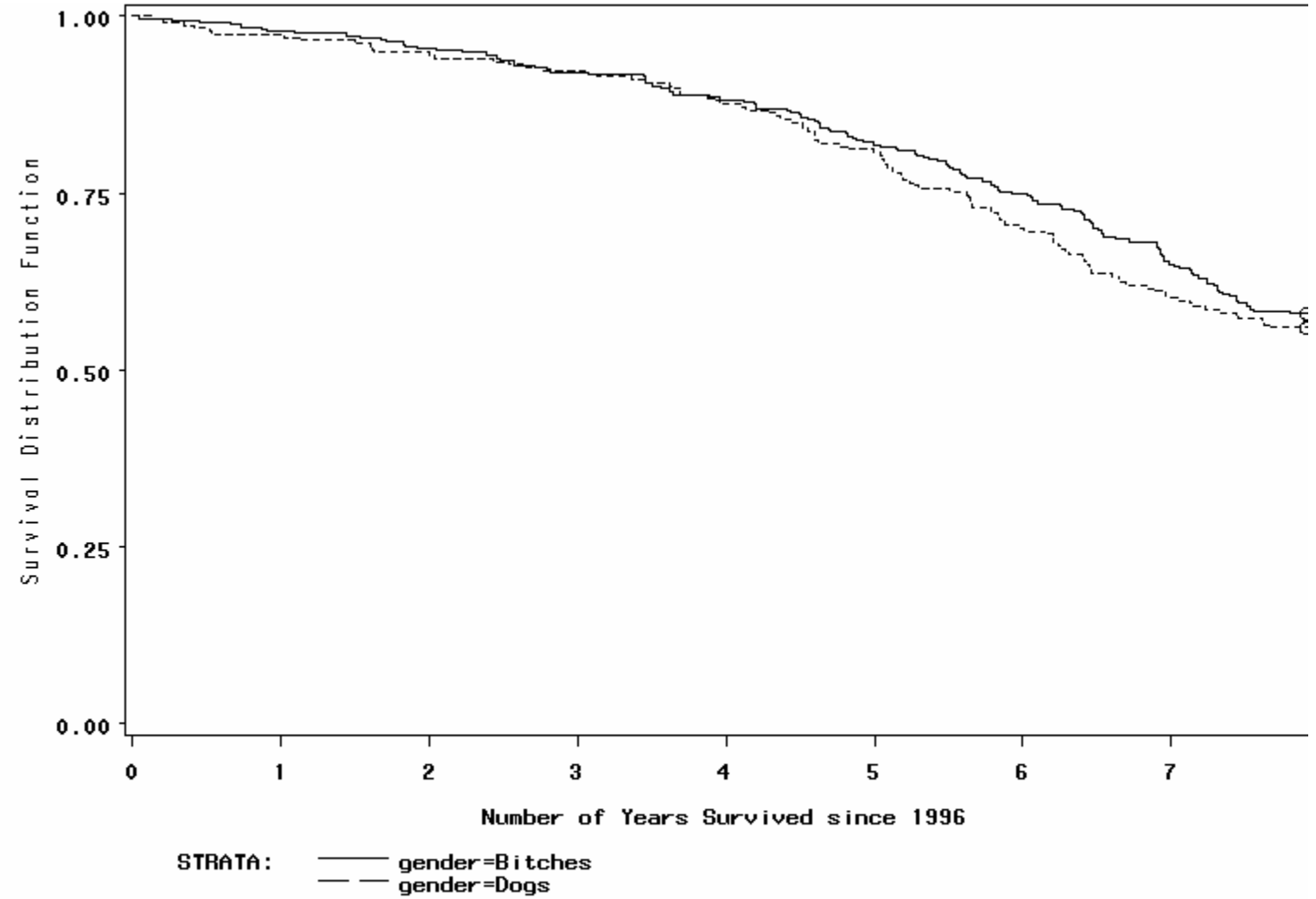
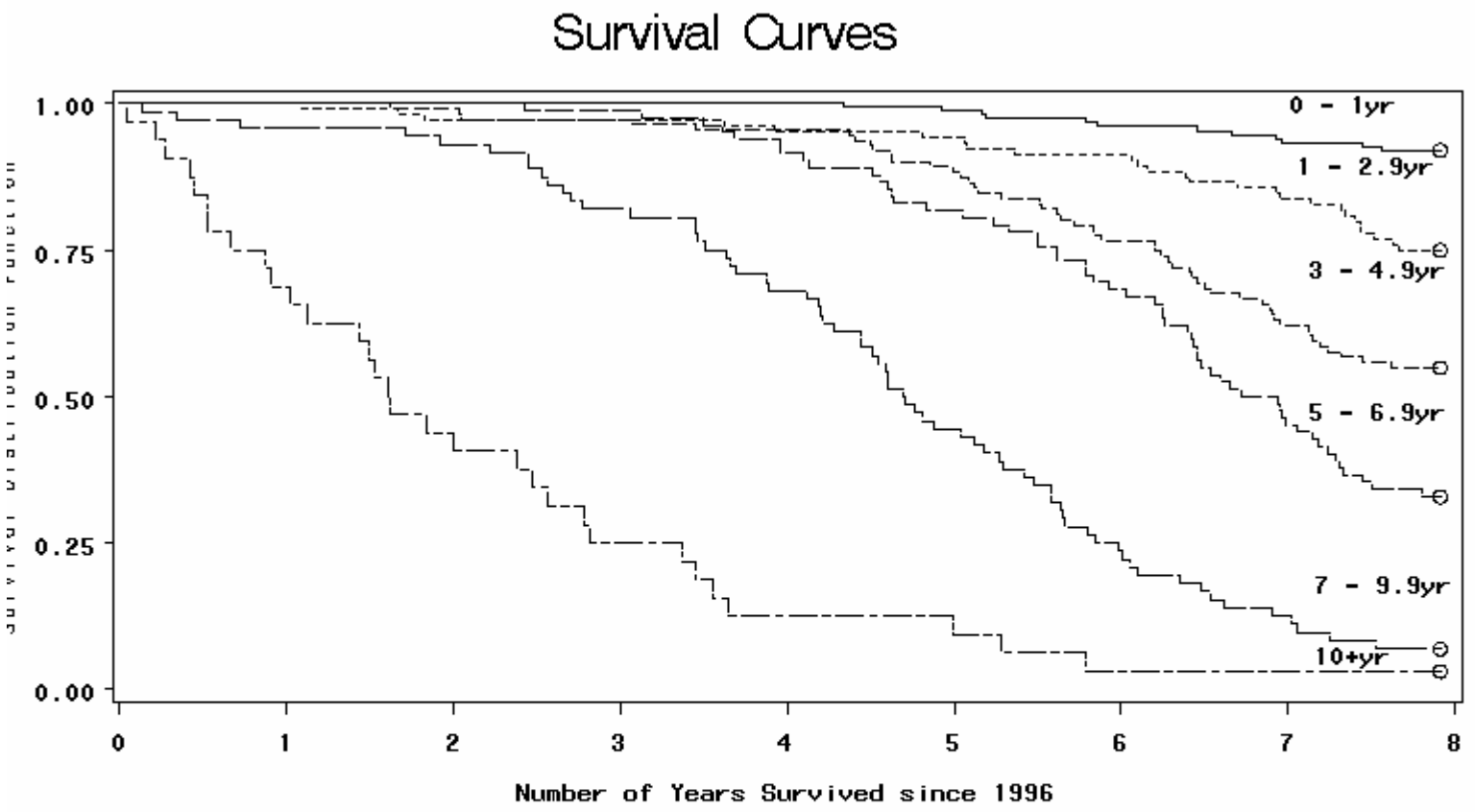


Figure 20—Survival of 565 Irish Setters by Age



Section VII. Owner Perceptions vs Survey Results

Table 81—Three Most Important Health Related Disorders—Owner-Ranking Versus Actual Survey Results[a]

Ranking of importance / occurrence	Owners' opinion		Survey results			
			Death		Disease or condition[b]	
	Disorder	% of owners' opinion	Cause	% of deaths	Cause	Lifetime risk
#1	Cancer	30.6	Cancer	37.6	Musculoskeletal diseases	1 in 2
#2	Epilepsy / seizures	28.9	Kidney failure	9.7	Cancer	1 in 3
#3	Digestive tract diseases	16.8	Old age	9.1	Endocrine diseases	1 in 3
					Gastrointestinal diseases	1 in 3
					Parasitic diseases	1 in 3
					Diseases of the ear	1 in 3

[a] Based on veterinary-confirmed causes of disease only
[b] Excludes gender-specific reproductive problem

Table 82—Comparisons of Owner Perceptions vs Survey Results between 1997 and 2003

Ranking of importance / occurrence	Owners' opinion		Cause of death		Disease or condition	
	1997[a]	2003	1997	2003	1997	2003
# 1	Gastrointestinal	Epilepsy / seizures	Cancer	Cancer	Infections / Infestations	Musculoskeletal
# 2	Neurological	Cancer	Cardiovascular	Kidney failure	Musculoskeletal	Cancer Endocrine
# 3	Musculoskeletal	Digestive tract diseases	Gastrointestinal	Old age	Skin / coat conditions	Gastrointestinal Parasitic Ear

[a] In the 1997 survey, owners were asked to list the three diseases of importance in Irish Setters; in the 2003 survey, owners were asked to choose from a given list of diseases.

III Interpretive Summaries and Comments on the Results of 2003 Irish Setter Club of America (ISCA) Survey, and Comparison with Results from the 1997 Survey

Table 1

1. Usable questionnaires were received for 565 Irish Setters (Table 1) from 291 owners. This represents a 30% increase in the number of Irish Setters and a 34% increase in the number of owners participating in the 2003 survey compared with those participating in 1997. It was not possible to determine the exact response rate, because owners were encouraged to make copies of surveys for use by other Irish Setter owners and to download copies from the Irish Setter web site.
2. Thirty one surveys were ineligible for entry into the study either because the Irish Setters were not alive as of January 1, 1996, or because of missing information on vital status, or because an owner submitted information for more than 5 dogs.

Table 2

1. Most (156 or 54%) owners submitted only one questionnaire. The instructions with the questionnaire asked that no owner submit a survey for >5 Irish Setters alive in 1996. However, a very small number of owners submitted questionnaires for >5 Irish Setters and some of these questionnaires were included in the study.
2. Most of the respondents were currently living with 2-5 (60.5%) or one (21.3%) Irish Setters. A total of 973 Irish Setters were living with 291 owners at the time of the 2003 survey. About 95% of the participants have been associated with Irish Setters for >6 years. The most common primary interest in Irish Setters reported by owners was companion animal/pet (84.5%) followed by show (81.8%). Many owners indicated more than one primary interest. A very small proportion of owners (0.7%) had a primary interest in search and rescue.

Table 3

1. Place of birth of a vast majority of Irish Setters in this survey was the United States (91.0%). Other countries of birth included Canada (2.5%), Australia (0.2%) and England (0.2%).
2. Over two-thirds of Irish Setters in this survey were either whelped in someone else's home (38.8%) or whelped by the owner in their own home (34.5%). About one-fifth of

the study population was whelped in a kennel. Very few of the Irish Setters were obtained through a shelter or rescue organization (1.1%) or from a pet store (0.5%).

3. A vast majority of the Irish Setters in the survey were bred for conformation (85.8%) while 63.4% were bred for companion / pet purposes. Almost one-fourth of the Irish Setters were bred for obedience (23.0%). Owners were allowed to check more than one purpose for breeding, so numbers do not add to 100%.

Tables 4 & 5

1. Almost all (96.3%) Irish Setters in the survey were reported to live in the United States. Irish Setters from Canada and Netherlands were also included in the survey but in very small numbers (1.9% and 0.5%, respectively).
2. Irish Setters from forty states in the US participated in this survey. The greatest proportion of Irish Setters resided in California (21.7%) followed by New York (8.3%) and Michigan (6.3%).

Table 6

1. The youngest Irish Setters in the survey as of December 31, 2003 contributed less information than those that were older. This was our primary reason for originally restricting entry to Irish Setters that were alive on January 1, 1996. During the course of the survey, this restriction criterion was relaxed to include several questionnaires for younger Irish Setters that owners had taken the time to complete. However, 18 Irish Setters born on or after January 1, 2001 were not included in the survey because they would have been too young at the study's end.
2. Four hundred and seventy nine Irish Setters were alive as of January 1, 1996. These Irish Setters would have been at least 8 years of age, if still alive, at the end of the study period (December 31, 2003).
3. The survey included 331 (58.6%) bitches and 234 (41.4%) dogs. As of December 31, 2003, 57% were still alive while the rest had either died or were euthanatized.
4. A veterinarian confirmed the cause of death for most (76.9%) of the Irish Setter deaths included in the survey. Only these veterinary confirmed deaths were used in many of the subsequent analyses. However, a necropsy exam had been performed in only 7.0% of all

deaths. Many other important causes of death would have been identified if more Irish Setters that died had been subjected to a post-mortem examination by a veterinarian.

Table 7

1. Average age at death for all Irish Setters in the survey was 11.3 years and this was nearly identical to the age at death for Irish Setters in the 1997 survey (11.2 years). However, the average age at death of Irish Setter dogs was higher in the 2003 survey than in the 1997 survey (11.0 years and 10.1 years, respectively), but was lower for Irish Setter bitches in the 2003 survey than in the 1997 survey (11.5 years and 11.9 years, respectively). In both years, the average age at death was higher for the bitches than for dogs and this pattern is observed in most dog breeds.

Table 8 and Figure 1

1. Irish Setters were most likely obtained as puppies at an average age of 2.9 months. About 10% of the Irish Setters were obtained as adults at an average age of 2.8 years.
2. The ages of the bitches and dogs in the survey were approximately normally distributed. For dogs that were still alive as of December 31, 2003, the average age of the bitches and dogs was 9.9 and 8.8 years, respectively. The oldest bitch and dog were 20.5 years and 16.6 years of age, respectively.
3. The average age at death for the bitches was 11.5 years and for the dogs was 11.0 years, respectively. The oldest bitch and dog to have died were 16.4 years and 15 years of age, respectively. In most species of animals including humans, females tend to outlive males. In both bitches and dogs, age at euthanasia was higher than age at non-euthanasia deaths. In both bitches and dogs, age at death for veterinary-confirmed causes of death was only slightly lower than age at death for all deaths. This may be because deaths considered as resulting from age-related causes (in the oldest of individuals) are usually not seen by a veterinarian.

Table 9

1. When owners were asked what competitions or events their dogs attended per year, the most common response was conformation (73.1%) followed by obedience shows (23.5%) and field trial/hunt test (20.0%). About 18% of the Irish Setters did not participate in any

events. Only about one in five Irish Setters participated in hunting activities. About 10% of the Irish Setters were involved in hunting game birds and about 19% were involved in field hunts.

2. The average number of conformation and obedience shows attended per year was 21.2 and 8.1, respectively. The average number of field trials / hunt tests attended per year was 6.6. On average, Irish Setters involved in hunting participated in about 31 game bird hunts and 11 field hunts.

Table 10

1. A majority of the Irish Setters were primarily kept free in the house. The proportion of Irish Setters housed in this manner actually increased from about 70% in the 1997 survey to about 80% now. Very few were reported to be kept primarily in a kennel (10.3%) or yard (4.8%).
2. As has been reported for pet dogs in general, a large proportion of Irish Setters sometimes (42.3%) or usually/always (37.2%) slept in their owner's bed. This indicates a high degree of attachment between owner and pet. The proportion of Irish Setters who never slept in their owner's bed was down from about 28% in the 1997 survey to about 20% in the present survey. The proportion of Irish Setters sleeping in their owner's bed was similar to that reported by owners of Golden Retrievers and Airedale Terriers, but much greater than that reported for Akitas and Wirehaired Pointing Griffons in similar health surveys.

Tables 11 & 12 and Figures 2 - 4

1. The height, weight, and body mass index (weight/height) were calculated separately for bitches and dogs. These were related to the daily diet as well as to specific health disorders in the latter part of the survey.
2. The heights of Irish Setter bitches and dogs were similar in 1997 and 2003. However, weight in both bitches and dogs decreased; bitches were lighter by 0.7 lbs in 2003 compared with 1997 while dogs were lighter by more than 2 lbs. This may reflect a growing concern for obesity in dogs.
3. The average height of the bitches (25.5 in) and dogs (27.5 in) in the survey was similar to the typical breed height of 25-27 inches reported in some published references (eg, The

Atlas of Dog Breeds of the World, B. Wilcox and C. Walkowicz, 5th edition, T.F.H. Publications, 1995).

4. The average weight of the bitches (62.3 lbs) was within the range of the standard breed weight (60 – 70 lbs) reported in the same reference above. However, the average weight of the dogs (75.0 lbs) was greater than the typical reported breed weight, despite the decrease in weight since the 1997 survey. This suggests that Irish Setter dogs in this survey are more likely to be overweight than typical Irish Setter dogs (ie., they are not representative of males of the breed), or the published weight reference is in error.
5. Body mass index is typically used in humans to determine whether an individual is overweight, but it has not been used with dogs because of the great differences in size and shape between breeds. We believe that body mass index can be a very useful measure of obesity within dog breeds, if bone structure is taken into account (eg, large versus medium versus small boned). However, there have been no published studies evaluating the use of this measure.
6. Body mass index does not appear to vary with age.

Table 13

1. In most breeds of dogs and in humans, body weight tends to increase with age. This table shows the weight, height, and weight/height index by age separately for bitches and dogs. In both bitches and dogs, weight tends to increase through life, but seems to decline late in life. Bitches and dogs >13 years of age are lighter on average than younger Irish Setters. In bitches this might be explained by the fact that the oldest bitches also tend to be the shortest, but this is not the case for dogs. More telling is that the weight/height index (body mass) also appears to be lowest in the oldest bitches. This suggests that as in elderly people, Irish Setter bitches lose body mass or condition and may require supplemental nutrition or a more energy dense ration to maintain their adult body condition.
2. Life-stage diets have become popular among the super premium brands of dry dog foods and these usually aim to reduce caloric intake and prevent obesity among older and typically less active canines. Such reduced calorie diets however, maybe contraindicated in the very oldest Irish Setter bitches that appear to be losing muscle mass (sarcopenia).

Owners therefore, of Irish Setters >13 years of age should weigh their pet at least weekly, and discuss with a veterinarian the merit of switching to a higher protein and higher calorically dense food at the first sign of weight loss.

Tables 14 & 15

1. The percent change in weight, height and weight/height index by age between the 2003 and 1997 surveys have been calculated separately for bitches and dogs. While Irish Setter dogs of all age groups were lighter in 2003 than in 1997, weight has decreased only in the youngest and oldest age groups in bitches in the later survey compared with the earlier one. No change in weight/height index was noted among the younger bitches between the two surveys. While only the oldest bitches appear to have lower weight/height index in 2003, dogs of all age groups have lower weight/height index in the 2003 survey compared with the 1997 survey.

Figures 5 & 6

1. An age-weight relationship was evaluated graphically for Irish Setter bitches and dogs.
2. No statistically significant increase in weight was seen with advancing age in either bitches or dogs as indicated by the horizontal regression line in Figures 5 and 6. This is in contrast to other dog breeds such as Akitas and Wirehaired Pointing Griffons, where body weight increases significantly with increasing age.

Table 16

1. For a vast majority (79.4%) of the Irish Setters, owners indicated they had tried to achieve an average rate of growth, versus a slow or maximum rate of growth.
2. Over 80% of the Irish Setters in the survey were reported to be of average body condition as puppy and as adult. Twelve percent of the bitches and 15% of the dogs were underweight as puppies. However, only 2.2% of bitches and 1.4% of dogs were reported to be overweight as puppies versus 8.2% of adult bitches and 3.9% of adult dogs.
3. As expected, more bitches than dogs were reported to be small boned while more dogs than bitches were large boned.

Tables 17 & 18

1. There was a consistent relationship between a puppy's rate of growth or its body condition and its weight as an adult. In dogs, there was also a consistent relationship between puppy body condition and adult weight/height index. Those Irish Setter bitches and dogs for which the owners reported a maximum rate of growth as a puppy tended to be about 3 lbs heavier and tended to be an inch taller (dogs alone).
2. As would be expected there was a good positive correlation between adult body condition and adult bone structure and reported weight of Irish Setter bitches and dogs. However, no such relationship was observed between body condition and height. This is important to epidemiologists studying canine health, because it suggests that owners are truthful when they report their pet as underweight or overweight.
3. As expected, Irish Setters reported to be large boned were heavier and taller than those reported to be medium or small boned. This suggests that there is no optimal weight for Irish Setters in general. Instead, optimal adult weight should be determined based on bone structure and gender.

Table 19 and Figures 7 - 9

1. Most of the bitches (64.1%) and comparatively fewer dogs (31.6%) in this survey had been neutered at a median age of 6.6 and 5.1 years, respectively. This relatively older age at neutering when compared with pet dogs suggests that many were used for breeding purposes.
2. It is widely recognized that neutered animals are heavier than intact animals, because neutering tends to slow metabolism, decreases activity, and increases body fat. It is also known that older animals are heavier and more likely to be neutered. However, in this breed survey, neutering does not appear to appreciably influence body weight of Irish Setter dogs or bitches, regardless of the animal's age.

Table 20

1. Most (52.3%) of the Irish Setter bitches in the survey had never whelped a litter while the rest had whelped between 1 and 4 litters.
2. The mean age at first whelping was 4.8 years versus 7.5 years for a bitch's fourth litter.

3. The mean number of live puppies whelped per litter was approximately 7 and this varied between the first (6.8 pups) and the fourth (5.5 pups) litters. Similarly, the mean number of stillborn pups per litter did not vary much by litter order, except in the third litter.

Table 21

1. Most bitches in this survey that whelped were bred naturally. The mean number of pups per litter resulting from natural breeding varied from a high of 7.6 in the second and third litters and to a low of 6.3 in the fourth litter. In contrast, bitches bred artificially using fresh semen tended to have comparatively smaller litters. The numbers of bitches that had been bred using chilled or frozen semen were too small to make meaningful comparisons.
2. One should not conclude from these findings that artificial methods of breeding inherently result in smaller litters than natural breeding. What we do not know from this survey is why artificial insemination was attempted in the first place. It is possible that owners selected some bitches for artificial breeding because they had prior reproductive problems or failed to first breed naturally. If so, these selection factors could explain the smaller litter sizes associated with artificial breeding. A similar pattern was observed for several other breeds we studied.

Table 22

1. This table further explores the relationship between methods of insemination while ignoring litter order. For all 199 litters conceived naturally, the average size was 7.4 live born pups per litter of which 6.8 were raised to weaning age. The average number of live born pups per litter was lower for those bred artificially: fresh semen (5.7), chilled semen (5.4), and frozen semen (4.0). These findings support the use of fresh semen compared with chilled or frozen semen.
2. It is not possible to determine from this survey the actual conception rate resulting from different methods of breeding. Such information obtained retrospectively is probably not accurate.

Tables 23 & 24

1. As part of our previous 5-year prospective study of bloat or GDV in approximately 2000 large and giant breed dogs, we developed a standardized scale to assess and compare the temperament and personality traits of dog breeds based on owner reports. This is the same scale we used in the 1997 and 2003 Irish Setter surveys.
2. We thought therefore, it would be interesting to compare the findings from both surveys. Irish Setters participating in the 2003 survey were rated by owners as being less submissive to people than those participating in the 1997 survey.
3. Irish Setters were reported to be more trainable than Bloodhounds, Airedale Terriers and Akitas. They were also described as one of the 'happiest' breeds. They were less aggressive to both people and other dogs than Wirehaired Pointing Griffons, Weimaraners, Bloodhounds, Airedale Terriers and Akitas, and were less fearful of loud noises than Weimaraners, Bloodhounds and Airedale Terriers.
4. Keep in mind that all of the personality scores are means for the breed. There is however, great variability from dog to dog within breeds. No doubt there are some individual Irish Setters that are just as active and excitable as a Weimaraner and just as submissive as a Bloodhound.

Table 25

1. Most owners (54.3%) reported feeding their Irish Setters puppy food as a puppy. On average, owners switched to adult food at about 9 months of age.

Table 26

1. The overwhelming majority of adult Irish Setters were fed dry food daily (98.1%) while only 1.9% of owners reported never feeding dry food. In contrast, 55.9% of owners reported feeding some canned dog food, 26.4% reported feeding home prepared food, and 21.9% reported feeding table scraps daily. This is very similar to the types of foods owners reported feeding to other breeds of comparable size. In general, the larger the breed the more dry food and less home prepared foods owners tend to feed. This may explain in part why the smaller dog breeds are much more likely to develop gingivitis and periodontal disease.

2. A fairly high proportion of owners never feed their adult Irish Setters home prepared foods (66%), or table scraps (60.2%). The feeding of table scraps however, is likely to be under reported by owners for a variety of reasons.

Table 27

1. Senior Irish Setters were slightly less likely to be fed dry food (93.9%) on a daily basis than were adult Irish Setters (98.1%) and slightly more likely than adults to be fed home prepared foods (30.4% vs 26.4%). This may reflect the fact that older dogs or dogs with chronic health conditions suffer loss of appetite and muscle mass, much like older people. Owners probably compensate by adding different foods to the diet.

Table 28

1. Dry food was most likely to be fed twice (64.1% for adults and 63.4% for seniors) per day. Only 4 – 5 owners reported feeding their dogs 3 times per day. Feeding two or more times a day is generally recommended in large and giant breed dogs to prevent bloat. No doubt 3 times a day feeding is inconvenient for many owners.
2. The feeding patterns (number of meals per day) for adult and senior Irish Setters are very similar with respect to the feeding of dry and canned foods. However, seniors are more likely to be fed home-prepared foods and table scraps in two or more meals a day than in one meal a day.

Tables 29 & 30

1. The most commonly fed dry foods were the premium brands including Nutro products (17.7%), Eukanuba (16.7%), ProPlan (10.1%), Iams (9.6%), and Purina (5.1%).
2. Among the canned foods, the most popular were Pedigree (45.6%), Iams (8.3%), Science Diet (4.8%), Alpo (4.0%), KalKan (3.6%), and Tyrell (3.6%).

Table 31

1. Specific ingredients are listed on the labels for dry and canned pet foods in order of their weight, going from highest to lowest. The most common first ingredient in the dry foods fed to Irish Setters was some type of white meat (57.7%) followed by some type of red meat (28.9%). Protein of plant origin was listed first only 12% of the time.

2. The most common first ingredient in the canned foods was some type of red meat (42.0%) followed by white meat (40.3%).

Table 32

1. The most commonly fed home prepared foods were meats (white and red), vegetables and yogurt. Very few owners reported giving these Irish Setters fish, despite the fact that fish is an excellent source of protein and fatty acids. In a recent study, we found that dogs fed fresh vegetables at least 3 times per week have a lower risk of certain cancers.

Tables 33 & 34

1. Owners reported giving multivitamins on a daily basis to 47.3% of the adult and 50.0% of the senior Irish Setters. As expected, significantly more senior Irish Setters were getting cartilage and joint supplements (43.9%) on a daily basis than were adults (17.2%).
2. There are no good long-term published studies that we are aware of in older dogs that demonstrate the health benefits of using either vitamins or cartilage supplements on a daily basis. However, evidence is mounting that this practice is beneficial in people, especially the use of anti-oxidants to prevent some types of cancer.

Table 35

1. A small proportion (<10%) of the adult Irish Setters in this survey were reported by owners to be overweight. This is in sharp contrast to the approximately 25% of dogs of several other breeds and human adults that are overweight.
2. In general, the type of foods fed was not associated with obesity in Irish Setters. However, 66.7% of overweight adults were fed canned foods daily compared with 58.8% of underweight and 54.8% adult Irish Setters with average body condition. Higher percentages of underweight Irish Setters were fed home prepared foods (38.2%) and table scraps (38.2%) compared with Irish Setters with average or overweight body condition. This may reflect the fact that owners of Irish Setters that suffer from some chronic health disorders that cause them to lose muscle mass, compensate by feeding with human foods.

Tables 36 & 37

1. There were no major differences in the weight or height of adult Irish Setters by the type of food fed daily to bitches or dogs.
2. Among both adult bitches and dogs, there is a suggestion that those not fed dry food daily were slightly heavier than those fed dry food (64.3 lbs versus 62.3 lbs for bitches and 78.2 lbs versus 74.9 lbs for dogs). In comparison, the height for adult dogs and bitches fed dry food daily was almost identical to those not getting dry food. Note however, that very few adult Irish Setters in this survey were not fed dry food daily, so these comparisons are based on small numbers.
3. Among bitches, those fed canned and home prepared foods were slightly heavier than those not fed these foods. Among dogs, only those fed home prepared foods were heavier than those not fed home prepared foods.
4. In general, height does not appear to differ with respect to food types fed daily, but there is a suggestion that weight may be influenced by daily diet.

Table 38

1. This table contains very important information regarding preventive health practices of Irish Setter owners. While vaccination may occasionally result in an adverse health event (vaccine reaction), it is an effective method for reducing the frequency and severity of many infectious diseases of dogs.
2. All dogs in the U.S. are required by local or state law to be vaccinated against rabies, although the required frequency of vaccination varies from state to state. This survey indicated that 0.7% of Irish Setters were never vaccinated for rabies, 1.2% were vaccinated only as a pup, and an additional 2.0% were vaccinated sporadically. The recommendation is to give the first rabies vaccine at 3 months of age followed by a booster 1 year later. Thereafter, the frequency of vaccination should depend on state law and the type of vaccine used. There are currently rabies vaccines on the market that offer excellent immunity for a period of 3 years. Therefore, no dog should ever go more than 3 years between rabies boosters.
3. All dogs should be immunized against distemper and parvovirus as puppies, and then receive periodic booster immunizations. There is some controversy however in the

veterinary community about how often such boosters are required. Some say that these vaccines produce lifetime immunity while others recommend some booster immunization. There is a growing trend towards giving boosters every 3 years rather than the more traditional yearly regimen. Also, there is now a licensed vaccine on the market that will immunize dogs for 3 years against parvovirus and distemper.

4. 21.2% of the Irish Setters in this survey were never vaccinated against leptospirosis and only 39.5% received a yearly vaccination. Many veterinarians do not recommend routine vaccination for leptospirosis, because they feel the disease occurs infrequently in the U.S. and this vaccine may cause a slightly higher adverse reaction rate than other canine vaccines. However, the incidence of leptospirosis has increased dramatically over the past few years in the U.S. and is reported now to be the major cause of acute kidney failure in dogs presented to veterinary teaching hospitals. In addition, it is now known that the types (serovars) that infect dogs today are different than they were 10 years ago. For this reason leptospirosis vaccines have been recently developed to protect against these new serovars. We recommend that all dogs be vaccinated against leptospirosis yearly, and more frequent vaccination is suggested for high risk dogs such as those participating in hunting and water sports. The benefits of routine vaccination far outweigh the risks. Remember that leptospirosis is shed in the urine of an infected dog and can be infectious for humans and other dogs in the household.
5. Lyme disease vaccine is only indicated for dogs that live in endemic areas such as the northeastern U.S. and Michigan and in dogs that travel to such areas. Your veterinarian can provide you with a list of states or geographic areas where Lyme disease is endemic.
6. Only 43.5% of the Irish Setters were vaccinated yearly against kennel cough. The intranasal kennel cough vaccines are very effective and are highly recommended for dogs attending shows or boarding. The parenteral (injectable) kennel cough vaccines are less effective in these situations.
7. Over one-fourth of the Irish Setters were never vaccinated against coronavirus. Many veterinarians do not believe that coronavirus is an important cause of gastrointestinal disease of dogs and therefore, do not recommend routine vaccination. However, it may be indicated in boarding dogs if there is a documented problem with coronavirus in the kennel.

8. In general, fewer Irish Setters than dogs of other breeds we have studied in the past were either never vaccinated against the major diseases, or were vaccinated as a puppy only, or were vaccinated only sporadically. It indicates that Irish Setter owners are more aware of preventive health practices than owners of other breeds of dogs or feel their dogs are at greater risk.

Table 39

1. Most worming medications were not used on a regular basis. Worming medications were given either sporadically (22.6%) or based on positive fecal tests (51.1%). Yearly deworming is considered good preventive medicine, regardless of age. Nearly one-fifth of the Irish Setters in this survey were never given any worming medications.

Tables 40 & 41

1. 72.6% of Irish Setters were receiving heartworm prevention routinely. 53.1% of those receiving routine heartworm prevention received it year-round while the remaining 46.7% received it from spring to fall. Monthly oral administration was the most common (88.1%) method used. Only 8.7% of owners reported daily administration of heartworm medication. Heartworm preventives are now available that need be administered by injection only every 6 months, and 2.5% of the owners already reported using it.
2. California was the state of residence for 21.7% of the Irish Setters in the survey. However, about 45% of the Irish Setters that never received heartworm preventatives were from California. Similarly, 4.6% of the Irish Setters in the survey were from Washington, but 14.1% of the Irish Setters that never received heartworm preventative were from Washington. Dogs living in these two states are very likely to be exposed to heartworm carrying mosquitoes and should receive preventive medication.

Table 42

1. Participation in screening tests is one way for a breed club to determine the frequency of inherited disorders and help decide what animals to breed. Such programs have led to a decrease in the incidence of inherited eye diseases, hip dysplasia, and bleeding disorders in a number of breeds.

2. This survey indicated that nearly three-thirds of all Irish Setters in the survey underwent at least one screening test. Such programs are gaining in acceptance and popularity among pure-breed owners.
3. The most common screening tests performed were for hip dysplasia (79.6%) and thyroid function (72.4%). Nearly half of the Irish Setters (47.9%) in the survey were screened for progressive retinal atrophy (PRA) and only few Irish Setters (6.2%) were screened for Canine Leukocyte Adhesion Disorder (CLAD). The pattern of inheritance of PRA is autosomal recessive in most breeds, including the Irish Setter. CLAD is a primary immunodeficiency disorder that is usually expressed early in life.

Table 43

1. The Irish Setter breed is at high risk for gastric dilatation-volvulus (GDV) or bloat; one in every five Irish Setters is expected to develop GDV over its lifetime. Gastropexy at the time of surgical correction of GDV is recommended to prevent reoccurrence of GDV. Prophylactic gastropexy may also be indicated in some high-risk dogs. About 86% of the Irish Setters who have had gastropexy, had the procedure done at the time of surgical correction of an episode of GDV. Only about 13% of the Irish Setters with gastropexy had the procedure done prophylactically. This amounts to about 2% of all Irish Setters in the survey. This procedure is likely to grow in popularity since GDV is a major contributor to both morbidity and mortality.

Table 44

1. Questions were included in the survey about exposure to flea and tick products, because some chemicals in these products are suspected of causing cancer in humans and dogs. In this table we show the frequency of use of insecticides. In later tables we explore the relationship between insecticide use and the risk of developing several diseases.
2. Exposure to flea dips has been shown to be associated with an increased risk of bladder cancer in pet dogs. The survey shows that 19% of Irish Setters have some exposure to flea and tick dips with most exposure being sporadic (15%). Only 4% of Irish Setters are treated with dips seasonally or year-round.
3. Exposure to flea and tick products as either drops applied to the skin (spot-ons) or as shampoos or sprays is common. A recent study recommended some spot-ons as safe

alternatives to older topical products, because unlike the older products, they were not associated with an increased risk of bladder cancer in dogs.

Table 45

1. Questions were included in the survey about the frequency of exposure of Irish Setters to lawn chemicals and this information was used to explore relationships between such exposures and certain health conditions. Previous studies have suggested an increased risk of lymphoma in dogs exposed to lawn chemicals and an increased risk of bladder cancer in dogs exposed to lawn chemicals and flea dips.
2. This table shows that about 47% of all Irish Setters have had some exposure to lawn chemicals with sporadic exposure most common (29.5%). Similarly, sporadic exposure to lawn chemicals was most common; over one-fifth of all Irish Setters lived in households where lawn chemical was applied sporadically.
3. Only about 4% of Irish Setters walked through areas treated with chemicals. Exposure to treated lawns often occurred within 12 hours of application which increases the risk of absorption.

Table 46

1. This rather long table describes the frequency of veterinary-confirmed health disorders by type and body system involved. For each category of disorders and for each disorder, it shows the proportion of all Irish Setters that were affected.
2. The most common malignant neoplasm (cancer) in Irish Setters were osteosarcoma (19% of all cancers and 4.6% of all Irish Setters) followed by melanoma, adenocarcinoma, hemangiosarcoma, and lymphoma. All of these are aggressive tumors and life threatening. Overall, 21.4% of Irish Setters in the survey were reported to have developed cancer. This proportion is only slightly less than that reported for Golden Retrievers and Airedale Terriers. The Golden Retriever breed is believed by many veterinarians to be at high risk of cancer. Further comparisons are made later between the Irish Setter breed and other breeds.
3. The most commonly reported site for cancer was the limb/digit (15.3%), mammary gland (12.4%), and bone (10.9%). Adenocarcinoma was the most common cancer type affecting the mammary gland.

4. Non-malignant (benign) neoplasms most often consisted of lipomas or papillomas. Both types of tumors are usually not life-threatening and can be surgically cured.
5. Cardiovascular disorders affected 6.4% of Irish Setters with a heart murmur being the most common. A heart murmur is not a specific disease per se, but rather reflects some underlying condition such as a valve dysfunction, cardiomyopathy, etc. No Irish Setters were reported to have had a genetically related heart valve problem such as pulmonic stenosis; only one Irish Setter was reported to have subaortic stenosis. Both are inherited and more common in some large and giant breed dogs.
6. Over 15% of Irish Setters had an allergy with food allergy dermatitis being the most common type.
7. The most commonly reported endocrine disorder in Irish Setters was hypothyroidism (about 21% of all Irish Setters and nearly 75% of all endocrine conditions). Hypothyroidism has become epidemic in many large and giant breed dogs in recent years, but the cause is not known. Repeated vaccination has been suggested by some veterinarians to be the major reason behind the increased prevalence of hypothyroidism. It is interesting to note that in contrast to hypothyroidism in dogs, there is currently an epidemic of hyperthyroidism in cats. These findings lend support to the hypothesis of chemicals in the environment that act as endocrine disrupters and are responsible for an upsurge in thyroid diseases in both animals and humans.
8. Over one-fourth of all Irish Setters had a gastrointestinal disorder with bloat/torsion, irritable bowel syndrome and gastritis being the most common. Torsion without bloat was reported to have occurred in only 0.5% of the Irish Setters in the study. In contrast, foreign body which is a common diagnosis in many dogs was only reported to have occurred in 9 (1.6%) of all Irish Setters.
9. Hematologic or blood disorders were reported in <2% of all Irish Setters.
10. Urinary tract/renal disorders were reported for about 15% of all Irish Setters with bladder infections accounting for over one-third (40%) and urinary incontinence accounting for a third of such problems. Urinary incontinence is being reported with increased frequency in middle-aged bitches of many different breeds. Some suspect that neutered bitches, especially those neutered at a young age, are at increased risk for urinary incontinence.

This is an important issue because, while urinary incontinence is not life threatening, it is not readily treated.

11. The frequency of neurological disorders in Irish Setters was 10.4%; 5.8% of Irish Setters were reported to suffer seizures. In some breeds seizures are suspected to be genetically determined. Epilepsy/seizures were listed high among Irish Setter owner concerns.
12. Over a third (38.9%) were affected by some form of musculoskeletal disorder with spondylosis (14.3% of Irish Setters) and arthritis (14.2% of Irish Setters) being the most common. It is likely that many Irish Setters with hip dysplasia also have some arthritis. These conditions are much more common in the larger breeds and prevention is based on selective breeding using radiographic evaluation of the hips as a guide. Weight control is also important for the prevention of progression of hip dysplasia.
13. About 12% of Irish Setters had some eye disorder with cataracts being most commonly reported (5.3% of Irish Setters). It is likely however, that some of the Irish Setters reported to have cataracts had nuclear sclerosis instead, a clouding of the cornea associated with older age. One very positive finding is that no Irish Setters were reported to have had inherited eye disorders such as progressive retinal atrophy.
14. A wide variety of reproductive problems were reported for both bitches and dogs. One-fourth of all bitches in the survey were reported to have had some reproductive problem while only about 16% of dogs were reported to have reproductive problems. Chronic false pregnancy was the most common disorder reported in bitches while for dogs it was infertility.
15. Disorders of the skin and coat affected one-fourth of all Irish Setters in the study. Among these problems, the most frequent was dull, dry coat (28.5%) followed by sebaceous cysts (27.9%). Hot spots plague many breeds of dogs such as the Golden Retriever but account for only 11% of all skin / coat disorders in the Irish Setter breed.
16. Relatively few Irish Setters (2.3%) were diagnosed with disorders of the liver / pancreas.
17. Relatively few Irish Setters (3.4%) were reported to have had respiratory problems.
18. About 16% of the Irish Setters in the survey were reported to experience trauma or accidents. Almost equal numbers of Irish Setters had a laceration requiring stitches, fractures, or lameness requiring treatment.

19. Birth defects or congenital problems were reported in 11% of Irish Setters, with umbilical hernia by far the most common. Congenital problems are usually inherited or are the result of exposure of the pregnant bitch to a toxic chemical.
20. Bacterial infections most often involved the anal glands (27.4% of all bacterial infections). Lyme disease was reported for 4.3% of Irish Setters and owners should consider vaccinating for this problem if they live in an endemic area of the country. The new recombinant Lyme vaccine is thought to be effective and much safer than the previously available killed vaccine. The most commonly reported viral infection was tracheobronchitis or kennel cough, but bacteria alone or a combined infection with bacteria and a virus causes many cases of kennel cough. Fungal infections were uncommon.
21. Parasitic infestations were reported in over a quarter of all Irish Setters (27.4%), with tapeworms, roundworms, and fleas, being the most common. Most of the intestinal parasite infections involved younger animals (see Tables 51 – 53).
22. Chronic or intermittent ear infections were common affecting about a third of the Irish Setters. Ear problems in general are more common in breeds with floppy ears.
23. The prevalence of nose and mouth problems was about 10% with gum problems such as gingivitis being the most common. Feeding of dry foods is usually associated with a lower incidence of dental problems and may partially explain why such problems occur less frequently in the larger breeds.
24. Behavior problems were reported in relatively few Irish Setters (4.1%).

Table 47

1. Irish Setters reported to have had Lyme disease lived in states that are considered endemic. Endemic Lyme areas in the U.S. include the Northeast, upper Midwest and California. Several types of Lyme vaccines are available for dogs and are recommended yearly for dogs living in or traveling to, Lyme endemic areas.

Table 48

1. Only 3.2% of Irish Setters in the survey were reported by owners to have been involved in auto accidents, probably reflecting good management and owner supervision. About 8% of the Irish Setters were hospitalized for some type of health conditions at least once.

As hospitalizations can become expensive, all pet owners should consider the potential benefits of pet health insurance.

Tables 49 & 50

1. Ten percent of Irish Setters were reported to have experienced an acute adverse vaccine- or drug-associated reaction.
2. Dogs of all ages experienced an adverse drug reaction; however, young Irish Setters were predisposed.

Tables 51 & 52

1. These tables indicate the age at first occurrence for the most common health problems in Irish Setters. Cancer and cardiovascular diseases generally affect older animals while endocrine and musculoskeletal disorders generally had their onset in middle age animals.

Table 53

1. This table is similar to previous tables in that it describes the frequency of different health-related disorders by age. However, the method used to calculate the frequency is very different. In previous tables disease frequency was based on the number of incidents or individuals affected and expressed as a proportion (%). That type of measurement however, does not provide an indication of the probability or risk that any individual Irish Setter will develop a specific condition in a given period of time or even over an entire lifetime. By contrast, in Table 53, the frequency of disease is expressed as the incidence rate per 1000 dog years at risk by specific age groups. (One dog year at risk constitutes one dog in a specific age group living for one year or two dogs living for six months each, etc.). The frequency is expressed in this manner because Irish Setters were of different ages at the start of the survey period. As a result, individual Irish Setters may have been observed for very different lengths of time when the survey period ended.
2. For cancer and urinary tract disorders the incidence tends to rise steadily with age while the incidence of many other problems tends to peak in middle age.

Table 54

1. This table describes the number of Irish Setters that were treated for different health disorders and the proportion of those treated that were reported to be cured. For example, 61.5% of the Irish Setters diagnosed with osteosarcoma were treated and of these only 18.8% were cured. In contrast, 84.6% of the Irish Setters with melanoma were treated and of these 72.7% were cured. For diseases with low cure rates, the emphasis should be placed on prevention research.
2. What do these numbers tell us? First, the proportion treated usually is indicative of the treatments available and the prognosis at the time of treatment. For example, many cases of hemangiosarcoma are too far advanced at the time of diagnosis to be candidates for treatment and no effective drug therapy is available. Second, the proportion cured is indicative of the efficacy of currently available treatments. For example, only 1 of the 4 Irish Setters treated for lymphoma was cured. Currently there are no drugs specifically approved for the treatment of cancer in dogs.
3. Very few of the Irish Setters with cardiovascular disease were reported to be cured following treatment. The goal of treatment for diseases such as these is not to cure the problem, but rather to alleviate the signs and to improve the quality of life. The same can be said for other health problems such as epilepsy, ear infections, hypothyroidism, colitis, urinary incontinence, arthritis, and autoimmune disorders.
4. Breed clubs intending to prioritize their research funding can use information in this table. For example, one must decide if it is better to conduct research aimed at developing better treatments or at identifying risk factors for disease that can be used to design preventive strategies.
5. Some problems like ear infections and hot spots have a fairly high cure rate, but tend to recur frequently.

Table 55

1. Behavioral problems requiring treatment occur relatively infrequently in Irish Setters. However when they do occur, the most common management is professional counseling or behavior modification. The role and efficacy of drug treatment of behavioral problems in dogs is still controversial.

Tables 56-65

In these tables we try to identify possible risk factors for specific health disorders in Irish Setters. A risk factor is defined as a characteristic of the host, the environment, or some management practice that is associated with an increased risk of disease. An association is deemed to be statistically significant if the relationship between the risk factor and disease occurred by chance less than 5% of the time (ie., the P-value is <0.05). However, even when the P-value is slightly >5%, the observed relationship might be worth examining in future studies.

Tables 56 & 57

1. Irish Setters with urinary incontinence were significantly more likely to be bitches than dogs. Bitches were also more likely to be diagnosed with sebaceous cysts than dogs. No such relationship was observed for anal sacculitis.
2. As discussed previously, Irish Setter bitches with urinary incontinence were significantly more likely to have been neutered than were bitches without urinary incontinence. A similar relationship between neutering and urinary incontinence was not observed for dogs. However, there were much fewer dogs than bitches with urinary incontinence to make valid conclusions.

Table 58

1. No association was found between body condition (both as puppy and as adult) and cancers such as osteosarcoma, melanoma, adenocarcinoma and hemangiosarcoma. Irish Setters that had bloat were twice as likely to be underweight as adults than Irish Setters that did not have bloat, and this relationship was almost significant (P = 0.07). This relationship agrees with findings from several controlled studies showing that dogs with bloat were more likely to be described as underweight compared with dogs without bloat.
2. Irish Setters with sebaceous cysts were significantly more likely to be overweight and less likely to be underweight as a puppy than those without sebaceous cysts.
3. Body condition was not associated with anal sacculitis, bladder infection and urinary incontinence.

Table 59

1. No association was found between body measurements and the prevalence of cancers, bladder infection, bloat, anal sacculitis, or urinary incontinence.
2. Results from surveys of Akitas, Airedale Terriers, and Golden Retrievers, indicated that canines that developed musculoskeletal diseases such as hip dysplasia were more likely to be overweight and less likely to be underweight as a puppy or as an adult, than were canines that did not develop musculoskeletal diseases. Although such an association was not observed among the Irish Setters in this study, a tendency towards such an association was observed among the bitches.
3. Significantly more bitches with hypothyroidism tended to be overweight. A similar pattern in dogs was not statistically significant. However, it cannot be determined from this survey whether hypothyroid Irish Setter bitches were heavier because of their endocrine imbalance, or whether being overweight somehow predisposed them to hypothyroidism. A similar relationship has been reported previously in other breeds.
4. As with body condition, increased weight was associated with the occurrence of sebaceous cysts in both bitches and dogs. Dogs with sebaceous cysts were also more likely to be taller and to have a higher weight by height index than dogs without sebaceous cysts.

Table 60

1. Irish Setters with osteosarcoma were significantly more likely to be large-boned. Bone structure was not found to be associated with other cancers, hypothyroidism, or bloat.

Table 61

1. Musculoskeletal disorders were not associated with the rate of growth as a puppy, puppy body condition, adult body condition, or bone structure.

Table 62

1. We attempted to relate occurrence of irritable bowel syndrome (IBS) with the personality of the dog as perceived by the owners. Owners scored their dog for each personality trait on a scale of 1 (never, low) to 10 (always, high). Irish Setters with IBS were ranked

significantly lower on their aggressiveness to people compared with Irish Setters that did not develop IBS. Irish Setters with IBS were also less fearful of people than Irish Setters without IBS. This type of research merits further consideration.

Table 63

1. We attempted to identify relationships between the type of foods fed daily to Irish Setters (e.g., dry, canned, or human foods) and some of the more common health disorders including kidney disease, cancers, seizures, ear infection, hypothyroidism, and musculoskeletal disorders. One interesting finding was that Irish Setters with melanoma were less likely to have been fed human foods daily (15.4%) than were Irish Setters that were not reported to have melanoma (39.9%). This relationship was almost significant (P = 0.07). However, too few Irish Setters had melanoma in this study for this relationship to be statistically significant. Since no one has yet identified any diet-related risk factors for canine melanoma, this finding should be evaluated in a larger study.

Table 64

1. Some veterinarians believe that feeding a diet high in protein will predispose dogs to kidney disease. However, to our knowledge, no one has evaluated the type of protein that may be responsible. No significant relationship was observed between the primary type of protein present in dry foods fed to Irish Setters in this survey and the risk of kidney disease.

Table 65

1. Exposure to lawn chemicals was not associated with the risk of developing specific cancers such as osteosarcoma, melanoma, adenocarcinoma, and hemangiosarcoma; however exposure to some flea and tick products was. For example, among Irish Setters with osteosarcoma, 60% were exposed to shampoos versus only 38.1% among Irish Setters without osteosarcoma. The likelihood of seeing a relationship of this magnitude by chance alone was only 3 in a hundred.
2. A similar relationship was found for exposure to flea and tick sprays and melanoma, hemangiosarcoma and ear infection. Irish Setters with ear infection were also significantly more likely to have been given flea/tick pills.

3. In contrast, Irish Setters with seizures were significantly less likely to have been exposed to flea/tick dips. We are not able to explain the significance of this relationship.

Tables 66 & 67

1. Several studies have identified history of bloat in first-degree relatives as a risk factor for canine bloat. We summarized the frequency of bloat in first-degree relatives and showed the relationship between family history and bloat itself. Significantly more (91.3%) of Irish Setters that bloated had a family history of bloat compared with Irish Setters that did not bloat (55%).

Tables 68

1. Processed, dry cereal-based diets have been implicated as a cause of bloat. However, among the Irish Setters that bloated there was no difference in the proportion fed dry food only compared with Irish Setters that did not bloat.

Tables 69 - 71 and Figures 10 - 13

1. The 3 most important causes of death in all Irish Setters were cancer, kidney failure, and "old age". The term "old age" indicates an older dog that dies of no known reason. Collectively, these 3 causes accounted for over half of all deaths in Irish Setters.
2. Cancer was the leading cause of death in Irish Setters whereas in humans it is the third leading cause of death behind heart disease and stroke. These differences between dogs and humans probably reflect the fact that humans are exposed to many risk factors for heart disease such as smoking, hypertension, and alcohol consumption, which are generally absent in dogs.
3. The 3 leading causes of death were not similar in bitches and dogs. In the Irish Setter dogs, cancer was the leading cause of death followed by musculoskeletal diseases, kidney failure, and heart failure.
4. Cancer was the leading cause of death in Irish Setters 3-7.9 and 8-12.9 years of age while in Irish Setters 13+ years of age, "old age" was the leading cause of death and cancer was second. For some unknown reason, cancer appears to decrease in frequency in the very oldest of dogs compared with younger adults. This same pattern has been observed in nearly every breed that has been studied and in people. The relatively high frequency of

cancer in Irish Setters indicates that additional studies are needed for specific cancers to identify environmental and genetic causes.

5. Death from bloat is relatively low in Irish Setters despite its high frequency of occurrence. Perhaps Irish Setter owners are more aware of the clinical signs of bloat and thus are better equipped to give emergency treatment or to get an affected dog more rapidly to a veterinarian.

Table 72

1. The average age at death for all Irish Setters whose cause of death was confirmed by a veterinarian was 11.1 years. This was only slightly less than the average age at death from all causes (11.3 years), regardless of whether the cause of death had been confirmed by a veterinarian.
2. The only disorders associated with early deaths were neurological (average age at death 8.4 years) and infection (9.7 years). GDV also seemed to kill Irish Setters earlier in life (9 years), but when two GDV deaths not confirmed by a veterinarian were excluded, the average age at death appeared to be slightly higher (10.6 years).
3. The average age at death for "old age" was 14.5 years. It is likely that these Irish Setters died from multiple system failure such that no one specific cause of death could be identified.

Table 73

1. An attempt was made to determine if a relationship existed between where an individual Irish Setter was obtained and its life expectancy. The average age at death was greatest for bitches (15.4 years) and for dogs (14 years) that were obtained from a pet store. However, there was only one Irish Setter in each category.

Table 74

1. An attempt was made to relate age at death to characteristics of Irish Setters such as their weight, height, and body condition. It has been shown that obese and underweight humans are at greater risk of early mortality compared with persons of ideal body weight.

2. In dogs there is a well-known relationship between longevity and size of a breed. In general, the larger the breed the shorter the lifespan. For example, Great Danes rarely live beyond ten years of age while smaller terrier breeds often live to 15 years of age.
3. In Irish Setters, no distinct relationship was observed between height, weight, or weight by height index, and longevity.
4. The average age at death for dogs (10.5 years) and bitches (10.0 years) that were characterized as overweight was approximately 0.4-1.6 years less than for dogs (10.9 years) and bitches (11.6 years) that were of average weight. A similar relationship was observed for other large breed dogs. This suggests that by simply preventing obesity in Irish Setters, one can extend life by 1-2 years.

Figures 14 & 15

1. There is very little information available in the literature concerning the relationship between the age at death of an individual dog and the age at death of his or her parents. Such information in humans suggests that parental age at death is a strong determinant of longevity for an individual. We used the survey data to study this relationship in Irish Setters and compare it with similar analyses in Airedale Terriers and Akitas.
2. There was a positive relationship between age at death in Irish Setters and the age at death of the dam. However, the age at death of the dam only accounted for about 3% of the variability in the age at death for Irish Setters in this survey and this was nearly statistically significant (P=0.06), similar to the relationship in Airedale Terriers. In contrast, this relationship was much stronger in Akitas with age of the dam accounting for 19% of the variability in the age at death (P=0.0003).
3. Again, similar to the finding in Airedale Terriers, virtually no association was observed between age at death of an Irish Setter in this survey and the age at death of the sire. In contrast, in the Akita breed a very strong positive relationship was found between age of death of an Akita in the survey and age at death of the sire. In fact, the sire's age at death accounted for about a third (32.6%) of the variability of the age of death of an Akita in the survey and this was highly significant (P=0.001).
4. It is not clear why so little relationship was found between longevity of individual Irish Setters and the age of death of their sire or dam. Until other breeds are evaluated, it is not

possible to know if the pattern observed in the Irish Setter and the Airedale Terrier is the norm or if the pattern observed in the Akita is the norm. Akita breeders are already using these findings in selecting individual animals to breed.

Table 75 & Figure 16

1. The death rate for Irish Setter dogs and bitches was approximately equal in the age groups 0 – 2.9 years, 3 – 7.9 years. However, in the older age groups, 8 – 12.9 years and 13+ years, the death rate for dogs (135.6 and 580.1 per 1000 dog years, respectively) was substantially greater than for bitches (87.4 and 381.8 per 1000 dog years, respectively). This explains why the survival curve for older dogs is steeper than for older bitches. That is the dogs are dying off at a faster rate than the bitches.

Table 76 & Figure 17

1. Death rates by cause did not vary substantially between Irish Setter bitches and dogs. Kidney failure and old age death rates were somewhat higher for bitches than dogs while death rates for cancer and musculoskeletal disease were higher for dogs than bitches.

Table 77

1. Death rates for the most common causes increased steadily with increasing age in both bitches and dogs, with the exception of cancer death rates in dogs.

Table 78

1. It is possible to estimate the potential years of life lost due to specific health-related disorders. This information is useful for prioritizing health-related research. To do this for the Irish Setters in this survey, we subtracted the average age at death for a specific cause from the average age at death for all causes (11.1 years) and then multiplied it by the number of dogs that died of that cause. The magnitude of potential years of life lost thus increases as a function of an earlier age at death for that cause and the number of animals dying of that disease.
2. For example, the potential years of life lost due to cancer in the survey population was (11.1-10.7) X 70 = 28 years.

3. The greatest number of potential years of life lost for Irish Setters in this survey was attributed to cancer (28 years) followed by neurological disease (18.9 years).

Figure 18

1. Since cancer appears to be the leading cause of death in Irish Setters, we compared the proportions of deaths due to cancer in the two surveys. The proportion of deaths due to cancer in the 2003 survey was higher than in the 1997 survey (37.6% vs 26.8%), particularly in the age groups 3-7.9 years and 8-12.9 years.

Tables 79 & 80

1. In these tables we show the lifetime risk of an Irish Setter developing specific conditions and then compare this lifetime risk to that of 4 other dog breeds of comparable size, namely the Golden Retriever, Akita, Airedale Terrier and Wirehaired Pointing Griffon. This analysis is based on the 242 Irish Setters that were dead at the time the survey was conducted. This ensured that we had a complete lifetime picture of health-related disorders for these Irish Setters
2. The highest lifetime risk (about 43% or 1 in 2) was observed for any musculoskeletal disorder while the next highest lifetime risk (1 in 3 or 33%) was observed for any malignant neoplasm, any endocrine, gastrointestinal, parasitic or ear disorder. The specific diseases with the highest lifetime risk were hypothyroidism (1 in 4), chronic or intermittent ear infection (1 in 4), bloat/torsion (1 in 5) and spondylosis (1 in 5).
3. The 1 in 3 lifetime risk of developing cancer in Irish Setters was only slightly lower than that for Golden Retrievers and Airedale Terriers. The perception of many veterinarians is that the Golden Retriever is at very high risk for cancer. It seems that the Irish Setter is not far behind the Golden Retriever in that respect. Of the specific cancers, the lifetime risk for osteosarcoma in Irish Setters was 1 in 11 which is about twice that in Golden Retrievers and Akitas. This indicates that further research is needed on the possible risk factors for osteosarcoma in Irish Setters.
4. In general, the lifetime risk of non-malignant neoplasm was higher in Irish Setters than in other breeds.

5. The lifetime risk of developing any endocrine disease in Irish Setters was similar to that of Akitas (1 in 3). The lifetime risk of hypothyroidism in Irish Setters was as high as that for Golden Retrievers (1 in 4).
6. An Irish Setter's lifetime risk for gastrointestinal disease was high and similar to that of an Akita's (1 in 3). We previously determined that approximately 1 in every 5 Akitas or Irish Setters will develop GDV over their lifetime. This current breed survey confirms these earlier findings.
7. Among the 5 breeds compared, Irish Setters were at the highest risk for musculoskeletal disorders, specifically spondylosis and arthritis.
8. More so than any other breed, 1 in 5 Irish Setter dogs developed male reproductive disorders.
9. As many as 1 in 3 Irish Setters developed ear disorders, much higher than for other breeds we have studied.

Figures 19 & 20

1. These figures represent a family of survival or actuarial curves. They provide information on how long Irish Setters of different gender and ages as of January 1, 1995 are expected to live. For example, of the dogs that were 10+ years of age at the start of the study, approximately 25% died by the end of the first year of follow-up and >50% were dead within 2 years. In contrast, of the dogs that were only 3-4.9 years of age in January 1, 1995, only about 5% died during the first year of follow-up and about 15% by 6 years.
2. Survival curves are used in the human life insurance industry to determine premiums for life insurance based on a person's current age. They could be used by owners and veterinarians to predict how long an individual animal is expected to live.

Tables 81 & 82

1. Owners were asked to rank the three most important diseases of concern in Irish Setters. They responded with cancer, epilepsy/seizures, and digestive tract diseases. This is consistent with the finding that cancer was the leading cause of mortality (death) in Irish Setters, affecting approximately 1 in every 3 Irish Setters. Gastrointestinal disorders affected 1 in every 3 Irish Setters during their life, but GDV, the most common

gastrointestinal disease, was only the 8th leading cause of death. The lifetime risk of epilepsy/seizures was 1 in 19 Irish Setters and any neurological disorder was the 6th leading cause of death.

2. These findings raise the question of what constitutes an important health concern to Irish Setter owners. If a disease such as cancer is very common and is associated with high mortality, it is likely to be of great concern. However, even diseases that are not fatal may be considered important if they are fairly common and not readily curable with treatment.

IV Final comments

Compared with other breeds we have studied, the Irish Setter appears to be relatively healthy. The average age of death is high (11.1 years) and no single disease seems to affect a high proportion of Irish Setters and cause death at a particularly early age. In addition, reported behavior problems were infrequent compared with other breeds. Musculoskeletal, gastrointestinal, endocrine, reproductive, and ear disorders, however are fairly common.

Finally, neutering was shown to substantially increase the risk of urinary incontinence in bitches. While urinary incontinence is not life threatening, it is frustrating to treat. Also, the frequency of urinary incontinence may increase over time as more veterinarians adopt the practice of neutering dogs before 12 weeks of age. Therefore, we need to know more about how age at neutering might influence the risk of urinary incontinence and whether routine exogenous hormone supplementation following neutering is indicated.

Appendix I: 2003 Irish Setter Health Survey Questionnaire

2003 Irish Setter Health Survey©

A Collaborative Effort of the
Irish Setter Club of America
and
The Purdue University School of Veterinary Medicine, Section of Clinical Epidemiology
(Dr. Larry Glickman, Head)

The Irish Setter Club of America (ISCA) and the Purdue University School of Veterinary Medicine would like your participation in a survey to identify the frequency and potential risk factors for health related conditions of Irish Setters. This information will be useful for prioritizing health research resources, for developing disease prevention strategies, and for providing 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 will be submitted to the ISCA for distribution to survey participants and others interested in the breed. All responses will be kept strictly confidential. The Irish Setter Club of America Health Committee assisted in the design of the questionnaire. Funding for this survey was provided by the Irish Setter Club of America Foundation. The success and accuracy of this health survey depends on a high rate of participation by owners.

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

2003 Irish Setter Health Survey
c/o Professor Larry Glickman
Purdue University School of Veterinary Medicine
Department of Veterinary Pathobiology
725 Harrison Street
West Lafayette, IN 47907-2027

Please feel free to make copies of this survey as needed. Additional copies may also be downloaded from the ISCA's web page at http://www.irishsetterclub.org/.

The deadline for responses is August 15, 2003 after which time your questionnaire will not be included. However, earlier responses are appreciated since this will expedite submission of the final report to the ISCA.

Thanks for your participation in this most important study. If you have any questions concerning this survey, please call Connie Vanacore at (973)543-7451 or email at fcvanacore@aol.com

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Selecting Dogs for Entry into the 2003 Irish Setter Health Survey

Each respondent may enter up to five (5) dogs in this survey as long as they meet the eligibility criteria. **Eligible dogs** are those which were alive on January 1, 1996 and for which you know their life history. These dogs can either be alive now or have died since January 1, 1996**.** Surveys submitted for dogs that do not meet these criteria will not be included.

I. General Owner Information

1. How many Irish Setters are currently living with you: ____
2. How many years have you been in the breed: ____
3. What are **<u>your</u>** primary interests: (Check all that apply)

___ Breeder	___ Tracking	___ Agility
___ Show	___ Hunting	___ Search & Rescue
___ Obedience	___ Hunt Tests	___ Breed Rescue
___ Companion/pet	___ Field Trials	___ Assistance/therapy

___ Other (please specify) _____

4. What three diseases or health-related conditions do you feel are of most concern for Irish Setters? Write **<u>one</u> <u>number</u>** that corresponds to the respective disease from the table below on each of the following three lines: (a)=highest concern.
List in order of importance from highest to lowest.

(a) _____	(b) _____	(c) _____

(1)	Cancer (neoplasia)	(9)	Allergies
(2)	Elbow/hip dysplasia	(10)	Autoimmune diseases
(3)	Digestive tract diseases	(11)	Reproductive problems
(4)	Heart disease	(12)	Behavior/temperament problems
(5)	Thyroid diseases	(13)	Ear diseases
(6)	Epilepsy/seizures	(14)	Kidney disease
(7)	Eye diseases	(15)	Neurologic diseases
(8)	Skin/coat diseases	(16)	Other, specify _____

Please fill out a <u>separate survey</u> for *each* Irish Setter

II. General Dog Information

1. Date of birth: ____ month ____ day ____ year
2. Place of birth for this Irish Setter: _____
3. Sex: ____ male ____female

   Neutered: ____ yes ____ no

4. If neutered, date of surgery: ____ month ____ year
5. Was this Irish Setter ever bred: ____ yes ____ no

6. 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	# Euthanized* (congenital defects)	Breeding Method (use code below)
#1						
#2						
#3						
#4						

For <u>Breeding Method</u>, please use the following code:
1=natural; 2=artificial insemination-fresh semen; 3=artificial insemination-chilled semen
4=artificial insemination-frozen semen

*If puppies were euthanized due to congenital defects, what kind of congenital defects occurred?

1.
2.
3.

7. Where did you obtain this dog:

____ bred yourself	____ breeder (kennel)
____ breeder (home)	____ adopted from private owner
____ shelter or rescue	____ pet store
____ service dog	____ other (specify) _____

8. What was the dog's age when you got it? _____

9. For what purpose was this dog bred? (Please check all that apply)

____ conformation	____ companion/pet
____ obedience	____ agility
____ tracking	____ dual purpose hunt/show
____ hunting	

Please Note: For questions 9 to 13, an Irish Setter is considered a ***puppy*** when it is ***< 12 months*** and an ***adult*** when it is ***at least 12 months*** of age.

10. As a puppy (< 12 months), what rate of growth did you try to achieve:

____ maximum	____ average	____ slow	____ don't know

11. As a puppy (< 12 months), would you characterize your dog as:

____ obese ____ overweight ____ average/optimum ____ underweight

12. As a puppy (< 12 months), was your Irish Setter fed puppy food:____ yes ____ no

13. If yes, at what age was your Irish Setter switched to adult food? _____ months

14. As an adult (≥ 12 mo.), what was the dog's usual:

____ weight (lb.) ____ height (in)

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

____ obese	____overweight	____average/optimum	____ underweight

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

____ large boned	____ medium boned	____ small boned

17. How many meals per day do/did you feed your Irish Setter?

___ one	___ two	___ three	___ ad lib (food available most of time)

18. Do/did you feed your Irish Setter from a raised food bowl? ___ yes ___ no

19. Please record the **number of times** each food type is/was fed in the appropriate boxes, based on your dog's **ADULT DIET** (**12 months to 7 years of age**):

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

20. Please record the **number of times** each food type is/was fed in the appropriate boxes, based on your dog's **SENIOR DIET** (**> 7 years of age**):

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

21. For the **commercial** foods fed daily for the longest period of time, write in the code for the first four ingredients as stated on the label. ***Do not include water as an ingredient***.

Dry Food Codes	
(1)	Red meat (meal/by product) – e.g., beef, lamb, venison
(2)	White meat (meal/by product) – e.g., chicken, turkey, pork, duck
(3)	Plant origin – e.g., soy, rice, corn, wheat, millet, oat, potato
(4)	Fat
(5)	Fiber
(6)	Fish or fish meal
(7)	Eggs
(8)	Other

Dry Food codes 1)_____ 2)_____ 3)_____ 4)_____

If you do not have the label available, what is the

Brand _____ **&** Specific Food Type _____ of dry food

Canned Food Codes:	
(1)	Red meat– e.g., beef, lamb, venison
(2)	White meat– e.g., chicken, turkey, pork, duck
(3)	Plant origin – e.g., soy, rice, corn, wheat, millet, oat, potato
(4)	Meat by product
(5)	Other

Canned Food codes 1)_____ 2)_____ 3)_____ 4)_____

If you do not have the label available, what is the

Brand _____ **&** Specific Food Type _____ of canned food

22. Indicate the code for the most common types of home prepared foods used daily:

Home Prepared Food Codes	
(1) Vegetables	(7) Yogurt
(2) Fruit	(8) Eggs
(3) Red meat (e.g., beef, lamb, venison)	(9) Pasta
(4) White meat (e.g., chicken, turkey, pork)	(10) Bones
(5) Other meat	(11) Dairy
(6) Fish	(12) Other

Home Prepared 1)_____ 2)_____ 3)_____ 4)_____

If you feed home prepared meat, do you feed it raw? :____ yes ____ no

23. Please check **the boxes** in the chart below based on the supplements given your dog as an **ADULT (12 months to -7 years of age)**

Type of Supplement	Supplements Given		
	Daily	Weekly	Monthly
Vitamin / Multivitamins			
Minerals			
Cartilage supplement (e.g., glucosamine)			
Food Supplement (e.g., vinegar, garlic)			
Other (specify) _____			

24. Please check **the boxes** in the chart below based on the supplements given your dog as an **SENIOR (> 7 years of age)**

Type of Supplement	Supplements Given		
	Daily	Weekly	Monthly
Vitamin / Multivitamins			
Minerals			
Cartilage supplement (e.g., glucosamine)			
Food Supplement (e.g., vinegar, garlic)			
Other (specify) _____			

25. On average, how many events per year did/does this dog attend (choose a typical year during which the dog was actively competing)? Please indicate zero when appropriate.
    ____ agility ____ obedience ____ field trial/ hunt test ____ conformation

26. How many days did this dog spend hunting in an average season? (Please indicate zero when appropriate).
    ____(# days) upland game birds ___ (# days) field trial / hunt test

27. How is your dog primarily housed (*more than 50% of the time*)?
    Please ONLY choose ONE response:

    ____ in a crate in the house ____ kennel (indoor) ____ free in the house

    ____ kennel (inside/outside) ____ fenced yard ____ garage

    ____ Other (specify)_____

28. Does your dog sleep on your bed
    ____never ____sometimes ____usually

29. Has your Irish Setter ever had a gastropexy? ____ yes ____ no

30. If yes, why was the gastropexy performed? (please check one)
    ___ as the result of an episode of bloat

    ___ to prevent an initial episode of bloat

31. Have any of the following close relatives of your Irish Setter ever bloated?

dam	___ yes	___ no	___ don't know	
sire	___ yes	___ no	___ don't know	
any littermates	___ yes	___ no	___ don't know	
any offspring	___ yes	___ no	___ don't know	___ not applicable

32. What is the current vital status of this dog:
    ____ alive ____ died

    If this Irish Setter died, was it euthanized? ____ yes ____ no

33. If died, date of death: ____ month ____ day ____ year

Cause of Death Codes for Question #34			
(1)	Cancer	(8)	Autoimmune disease
(2)	Old age, dementia	(9)	Neurological / epilepsy
(3)	Heart failure	(10)	Trauma
(4)	Kidney failure	(11)	Infection
(5)	Liver failure	(12)	Endocrine disease
(6)	Gastric dilatation volvulus (bloat)	(13)	Other (specify)_____
(7)	Musculoskeletal / arthritis	(14)	Unknown

34. (a) If this dog died, what was the cause?
Write in the number from the above chart for the cause of death: _____

(b) ***If*** cause ***of death was a cancer, use the codes from Page 11:***

- ♦ Type of Tumor Code _____ unknown ____
- ♦ Location Code _____ unknown ____

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

36. If died, was an autopsy performed: ____ yes ____ no

37. Age at death of parents: Dam: ____ years ____ unknown
Sire: ____ years ____ unknown

Dam still alive ____

Sire still alive ____

III. Personality and Temperament

How would you rank your dog on a scale of 1 to 10 for each of the following characteristics? Please circle ***one number*** in each row:

	Never (Low)				Sometimes					Always (High)
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 strange people	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
8. Fearful of loud noises	**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**

IV. Health Related Conditions

- For the **Cancer** question on the next page (p.12), use the codes from the following table.
- First select a code for the *Tumor Type* and then select a code for the *Location.*
- **Write these two codes in the chart on next page.**
- These same codes are to be used if Cancer was the cause of death: (Question 33 on page 9)

Codes for <u>Tumor Type</u>	**Codes for <u>Location</u>**
1. Adenocarcinoma	A. Bladder
2. Chondrosarcoma (cartilage)	B. Bone
3. Fibrosarcoma	C. Brain
4. Hemangiosarcoma	D. Limb / Digits
5. Interstitial cell tumor	E. Eye
6. Liposarcoma	F. Heart
7. Lymphoma (Lymphosarcoma)	G. Intestine
8. Malignant giant cell tumor	H. Kidney
9. Mast cell tumor	I. Liver
10. Melanoma	J. Lung
11. Mesothelioma	K. Lymph nodes
12. Myeloma	L. Mouth
13. Neuroblastoma	M. Muscle
14. Neurofibrosarcoma	N. Nasal cavity
15. Osteosarcoma	O. Nerve
16. Seminoma	P. Ovary
17. Sertoli cell tumor	Q. Pancreas
18. Squamous cell carcinoma	R. Prostate
19. Transitional cell carcinoma	S. Skin
20. Transmissible venereal tumor	T. Spleen
21. Carcinoma, unspecified	U. Testes
22. Sarcoma, unspecified	V. Uterus
23. Other (specify) _____	W. Mammary gland / breast
24. Unknown	X. Other (specify) _____
	Y. Unknown

1. For each of the conditions listed below, please indicate:

   - Those conditions that affected your dog. Please only report each condition **ONCE**.
   - The **age** at **first diagnosis**
   - Whether a veterinarian confirmed that diagnosis
   - If the condition was treated, cured, or a recurrent problem.

For **cancerous tumors**, use the **tumor type codes** and **location codes** from the table on the preceding page. For the **benign/non-cancerous tumors**, use the **location codes** only**.**

Condition	**Age at Onset**	**Diagnosed by Veterinarian**		**Treated**		**Cured**		**Recurrent Problem**	
	Years	**Yes**	**No**	**Yes**	**No**	**Yes**	**No**	**Yes**	**No**
CANCER (cancerous tumors)									
Tumor Type Code ____ Location Code ____									
Tumor Type Code ____ Location Code ____									
Tumor Type Code ____ Location Code ____									
BENIGN /non-cancerous tumors									
Lipoma Location Code ____									
Papilloma (wart) Location Code ____									
Histiocytoma Location Code ____									
Adenoma Location Code ____									
Polyp Location Code ____									
Cyst: Type _____ Location _____									
Other Non-malignant _____ Location Code ____									

Condition	Age at Onset	Diagnosed by Veterinarian		Treated		Cured		Recurrent Problem	
	Years	Yes	No	Yes	No	Yes	No	Yes	No
HEART & CIRCULATION									
Heart failure-unknown cause									
Cardiomyopathy									
Heartworm Infection									
Heart arrhythmia									
Heart murmur									
Persistent right aortic arch									
Pulmonic stenosis									
Subaortic stenosis									
Valve dysfunction (specify) _____									
Ventricular septal defect									
Other _____									
ALLERGIES									
Allergic dermatitis due to:									
Fleas									
Food (specify)_____									
Inhaled allergens									
Flea dip/insecticide									
Atopic rhinitis									
Insect bites									
Anesthesia									
Drugs (specify)_____ _____									
Other Allergy _____									

Condition	Age at Onset	Diagnosed by Veterinarian		Treated		Cured		Recurrent Problem	
	Years	Yes	No	Yes	No	Yes	No	Yes	No
ENDOCRINE									
Hypothyroid									
Hyperthyroid									
Cushing's (hyperadrenal)									
Addison's (hypoadrenal)									
Diabetes mellitus									
Pancreatic insufficiency									
Pancreatitis									
Other _____									
DIGESTIVE TRACT									
Bloat without stomach torsion									
Bloat with stomach torsion									
Megaesophagus									
Gastritis (chronic or intermittent)									
Excessive vomiting									
Excessive diarrhea									
Excessive flatulence									
Malabsorbtion									
Colitis									
Irritable bowel syndrome									
Foreign body									
Motion sickness									
Other _____									

Condition	Age at Onset	Diagnosed by Veterinarian		Treated		Cured		Recurrent Problem	
	Years	Yes	No	Yes	No	Yes	No	Yes	No
BLOOD DISORDERS									
Hemophilia									
Autoimmune hemolytic anemia									
Chronic anemia									
Thrombocytopenia (or platelet dysfunction)									
von Willebrand's disease									
Canine leukocyte adhesion deficiency (CLAD)									
Bone marrow failure									
Other _____									
URINARY TRACT /- RENAL									
Kidney disease									
Kidney failure									
Bladder stones									
Bladder infection(s)									
Urinary incontinence									
Other _____									
NEUROLOGICAL									
Seizures of unknown origin (epilepsy)									
Seizures of known origin									
Wobbler syndrome									
Dementia (senility)									
Nerve degeneration									
Tremors - generalized									
Head tilt									
Myasthenia gravis									
Other_____									

Condition	Age at Onset	Diagnosed by Veterinarian		Treated		Cured		Recurrent Problem	
	Years	Yes	No	Yes	No	Yes	No	Yes	No
MUSCULOSKELETAL									
Eosinophilic panosteitis									
Osteochondritis dissecans									
Hip dysplasia									
Elbow dysplasia									
Spondylosis									
Degenerative disk disease-weakness or paralysis									
Anterior cruciate ligament tear									
Arthritis									
Patella luxation									
Hypertrophic osteodystrophy (HOD)									
Other _____									
EYES									
Blindness									
Corneal dystrophy									
Progressive retinal atrophy									
Cataracts									
Glaucoma									
Entropion									
Ectropion									
Prolapsed 3rd eyelid									
Distichiasis									
Injury									
Uveitis									
Cherry eye									
Lens luxation									
Other _____									

Condition	Age at Onset	Diagnosed by Veterinarian		Treated		Cured		Recurrent Problem	
	Years	Yes	No	Yes	No	Yes	No	Yes	No
REPRODUCTIVE									
FEMALE									
Infertility									
Failure to carry to term									
Irregular heat cycles									
Chronic false pregnancy									
Difficult whelping (dystocia)									
Mastitis									
Pyometra									
Uterine inertia									
Insufficient milk									
Malformed puppies									
Poor mothering instinct									
Other _____									
MALE									
Infertility									
Cryptorchidism									
Unilateral (monorchid)									
Bilateral									
Enlarged prostate									
Lack of libido									
Abnormal semen									
Testicular atrophy									
Other _____									

Condition	Age at Onset	Diagnosed by Veterinarian		Treated		Cured		Recurrent Problem	
	Years	Yes	No	Yes	No	Yes	No	Yes	No
SKIN/COAT									
Dull, dry coat									
Hot spots									
Lick granuloma									
Seborrhea									
Pigment abnormalities									
Sebaceous cysts									
Sebaceous adenitis									
Lupus erythematosis									
Pemphigus foliaceus									
Demodectic mange									
Sarcoptic mange									
Other _____									
LIVER / PANCREAS									
Pancreatic insufficiency									
Liver shunt									
Liver disease _____									
Other _____									
RESPIRATORY									
Laryngeal paralysis									
Other _____									
TRAUMA/ACCIDENTS									
Fracture/broken bone									
Lameness requiring treatment (not due to fracture or cruciate tear)									
Laceration requiring stitches									
Other _____									

Condition	Age at Onset	Diagnosed by a Veterinarian		Treated		Cured		Recurrent Problem	
	Years	Yes	No	Yes	No	Yes	No	Yes	No
BIRTH DEFECTS									
Umbilical hernia									
Inguinal hernia									
Cleft lip or palate									
Patent ductus arteriosis (PDA)									
Overshot jaw									
Undershot jaw									
Other _____									
INFECTIONS/ INFESTATIONS									
BACTERIAL									
Anal sacculitis									
Pneumonia									
Prostatitis									
Cystitis									
External ear (otitis externa)									
Tonsillitis									
Septicemia									
Lyme disease									
Leptospirosis									
Rocky Mountain Spotted Fever									
Erlichiosis									
Interdigital infection									
Other _____									

Condition	Age at Onset	Diagnosed by a Veterinarian		Treated		Cured		Recurrent Problem	
	Years	Yes	No	Yes	No	Yes	No	Yes	No
VIRAL									
Parvovirus									
Corona virus									
Distemper									
Tracheobronchitis(kennel cough)									
Herpes virus									
Other _____									
FUNGAL									
Ringworm									
Yeast (Candida)									
Blastomycosis									
Coccidioidomycosis									
Other _____									
PARASITIC									
Fleas									
Giardia									
Coccidia									
Roundworms									
Hookworms									
Whipworms									
Tapeworms									
Other _____									
EARS									
Hematoma									
Hearing problem / deafness									
Infections (chronic/intermittent)									
Other_____									

Condition	Age at Onset	Diagnosed by a Veterinarian		Treated		Cured		Recurrent Problem	
	Years	Yes	No	Yes	No	Yes	No	Yes	No
NOSE & MOUTH									
Missing teeth									
Underbite									
Overbite									
Wry mouth									
Gum problems (gingivitis)									
Enamel hypoplasia									
Pigment change in nose									
Other _____									
BEHAVIOR PROBLEMS									
Fear aggression - people									
Fear aggression - dogs									
Dominance aggression - people									
Dominance aggression - dogs									
Fearful / shy of people									
Inappropriate urination									
Separation anxiety									
Obsessive / compulsive barking									
Obsessive / compulsive licking									
Gunshy									
Other _____									

2. Please check the appropriate boxes according to your dog's vaccination schedule. If your Irish Setter has not received the vaccines listed below, please check the appropriate '**Never'** column:

Type of Vaccination	**Frequency of Vaccination**					
	Never	**Puppy only**	**Sporadic** (based on titers)	**Yearly**	**Every 2 years**	**Every 3 years**
Rabies						
Distemper						
Parvovirus						
Leptospirosis						
Lyme disease						
Kennel cough (intranasal)						
Corona virus						
Other_____						

3. Has this Irish Setter ever had any adverse drug or vaccine reactions? ____ yes ____ no
   a. If yes, what was the specific drug or vaccine involved: _____
   b. Was this drug or vaccine reaction diagnosed by a veterinarian? ____ yes ____ no
   c. How old was the dog when this adverse reaction occurred? ___ years ___ months

4. Frequency of worming:

____ Never	____ Sporadic	____ Yearly	____ Based on positive fecal test

Use of heartworm preventative:

____ Never	____ Sporadic	____ Regular

a) If regular, is heartworm preventative given:

___ throughout the year	____ spring to fall

b) If regular, is heartworm preventative given:

___ daily	____ monthly	____ every 6 months

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

Type of exposure	**Never**	**Sporadic**	**Regular**		**If seasonal or year-round, how often?**		**Product name**
			Seasonal	Year-round	Weekly	Monthly	
Lawn chemicals (owner or commercially applied)							
Tick / flea dips							
Tick / flea products applied as drops on skin							
Tick / flea products as pill							
Tick / flea shampoo							
Tick / flea collar							
Tick / flea spray							
Tick / flea – other (Specify product)							

6. If a lawn care product is applied, how much time elapses before the dog is allowed direct contact with treated yard?

_____ don't use	_____ 12 hours or less	_____ at least 24 hours	____ > 24 hours

7. How often are herbicides and or pesticides applied to your yard?

___ never ___ sporadic ___ seasonally ____ regularly throughout year

8. Do you frequently walk your dog through areas known to be treated with chemicals for weed control (areas such as golf courses or subdivision green spaces): _____ yes _____ no

9. Was this dog ever involved in an automobile accident that required treatment by a veterinarian:
   ____ yes ____ no

10. Did this dog ever receive professional counseling or behavior modification for a behavior problem? ____ yes ____ no

11. Was this dog ever medically treated for a behavior problem? ____ yes ____ no

12. Was euthanasia ever considered for a behavior problem? ____ yes ____ no

13. Was this dog ever hospitalized for any health-related conditions other than those noted in the tables starting on page 12? ____ yes ____ no

14. If YES, please specify condition for which hospitalized_____

15. Was your Irish Setter ever tested for:

Hip dysplasia	____ yes	____ no
PRA	____ yes	____ no
CLAD	____ yes	____ no
Thyroid function	____ yes	____ no

V. **Additional Comments**

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

IMPORTANT

Sometimes questionnaires are returned with missing information or entries that are unclear. If this involves crucial information such as age, gender, vital status, the entire questionnaire may not be useable. Therefore, it is helpful if you provide us with a way to contact you if we have questions. None of the contact information you provide below will be entered into the computer database or in anyway become part of the survey. This information will be discarded after your questionnaire responses are computerized for analysis.

Your name:_____

Your address:_____

number street city state zip

Telephone number: (_____)-_____

e-mail address:_____ Fax number: (_____)-_____

Thank you for your participation in this health survey of Irish Setters. 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 Irish Setter Club of America for distribution.