

**THE 2005 GERMAN SHORTHAIR POINTER
HEALTH SURVEY:**

FINAL REPORT

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Background

The German Shorthair Pointer National Health Committee requested a general health survey for German shorthair pointers whose owners belong to the German Shorthair Pointer Club of America. The purpose was to find possible emerging breed-related health problems, so that concerns and breed problems can be addressed. Previous surveys were used as a basis for the current survey.

Methods

On May 2, 2005, the survey was mailed to all members of the German Shorthair Pointer Club of America. Postcard reminders were sent out on October 26, 2005 and January 17, 2006 encouraging owners to return the survey even if it was blank because they no longer owned German shorthair pointers. New copies of the surveys were mailed out a final time to non-responders June 10, 2006.

Answers from the surveys were compiled into excel spreadsheets under each survey identification number. It should be made clear that ages are in years, except when noted.

When results showed more than a 2% difference between male and female dogs in any particular health category, a chi-square test was used to analyze the data. Two percent was chosen as a large enough difference to be biologically or clinically important. If the resulting p-value was less than or equal to 0.05, then it was considered statistically significant. Having a statistically significant p-value indicates a difference between the sexes and the frequency of these health problems.

Results

There were a total of 795 German shorthair pointer owners and members of the club who responded with information that could be used for the survey results. Originally, 1364 members were sent surveys and as names were added to the mailing list. However, 33 of these were bad addresses, and were not counted. One blank form was returned and 19 surveys were returned specifying they no longer had German shorthair pointers. Overall, we had a 61% response rate which is moderately high. Information about the response rate can be found in Table A-1. Possible reasons as to why the rest did not reply cannot be certain. Reasons could include: 1) too time consuming; 2) too many dogs to include; 3) too many health problems; 4) very few or no health problems; 5) have not recently owned German shorthair pointers; 6) some other unknown reason. The higher the response rate, the more accurate and conclusive the data. The survey includes a total of 3272 German shorthair pointers.

The first page of the survey was general information about the German shorthair pointer owners and their dogs. The median number of years an individual had owned German shorthair pointers was thirteen. Most owners currently only had one or two dogs; the maximum number of dogs a person owned was twenty. General information can be

found in Table A-2. The most popular activities that these German shorthair pointers participated in are pet companion, hunting, hunt tests, and conformation (Figure A-1 & Table A-3). Owners reported to be most concerned with skeletal problems (e.g. hip dysplasia), epilepsy/seizures, cancer, and heart problems, as seen in Figure A-2 and Table A-4. The top ten most reported health categories were temperament/behavior, cancer, arthritis, kidney/urinary, eyes, mouth, gastrointestinal, umbilical hernias, ears, and skin. (Figure A-3).

There are 2607 living German shorthair pointers and 665 deceased German shorthair pointers, for a total of 3272 dogs included in this survey. The median age of living dogs was 4 years for males and 4 years for females. The median age at time of death was 11 years for males and 12 years for females. The oldest age achieved before death was reported to be 17 years for a male and 17 years for a female. Information regarding the age of dogs can be found in Table A-5. The most common causes of death included cancer, old age, euthanasia, gastrointestinal problems, and heart problems. Old age is a general term and no other exact cause of death was noted. Table A-6 has a complete list of causes of death.

Differences between the sexes were found in four health problems using our 2% rule and chi-square calculations. Males were more likely to have mouth problems, while females were more likely to have kidney/urinary tract problems, mammary tumors, and cancer.

Cancer was one of the most reported health problems. See Table B-1. The identified cancers most often reported were mammary tumors, mast cell tumors, and lymphosarcoma. Twelve percent of the dogs included in the survey had been diagnosed with some form of cancer. There was a significant difference between the sexes reported with mammary tumors. Not surprisingly, female German shorthair pointers were 42 times more likely to be diagnosed with mammary carcinoma than males.

Demodectic mange was reported in three percent of the German shorthair pointers. Skin and hair problems (Table B-2) affected approximately four percent of the dogs.

Ear problems affected approximately four percent of the dogs surveyed as can be seen in Table B-3. Two percent were deaf and almost two percent had chronic ear infections. Seven percent of the dogs were reported to have eye problems (Table B-4). The most common eye problems were cataracts (2.7%) and entropion eyes (1.3%). Problems with the mouth and teeth affected six percent of the German shorthair pointers (Table B-5). Three percent had an undershot jaw and 2% had missing teeth.

Respiratory problems affected less than one percent of German shorthair pointers surveyed (Table B-6). Sixteen percent of the dogs had bone and skeletal problems, as seen in Table B-7. Arthritis affected ten percent of the dogs.

Fewer than one percent of the dogs reported autoimmune or immune problems (Table B-8). Three percent had some type of allergy. Food allergies affected 1.3% of the dogs. Inhaled allergies affected less than one percent of the dogs. Endocrine problems, like

those listed in Table B-9, affected two percent of the German shorthair pointers. Hypothyroidism affected 1.2% of the dogs.

Gastrointestinal tract problems occurred in five percent of the German shorthair pointers (Table B-10). One percent of dogs were affected by anal sac disease and/or irritable bowel disorder. Stomach bloat and GDV occurred in 1.6%. Liver and spleen problems were noted in less than one percent of the survey population (Table B-11). More than four percent of the dogs experienced hernias (Table B-12). The majority of these were umbilical hernias.

Urinary tract problems affected 7.3% of the total dogs. See Table B-13. Three percent had experienced incontinence after spay, and 5% of the females had experienced vaginitis. Overall females were 6.3 times more likely to have kidney and urinary tract problems.

Almost three percent of the German shorthair pointers had experienced a heart problem, as can be seen in Table B-14. Congestive heart failure occurred in 1%. The median age for congestive heart failure was 12 years. Neurological problems affected 4.6% of the total number of dogs (Table B-15). Three percent had experienced seizures or had epilepsy.

Temperament and behavior problems affected more than 13% of the dogs (Table B-16). Five percent had noise phobias and five percent showed aggression towards other dogs.

Twenty-four percent (346 dogs) of the male dogs and 36% (664 dogs) of the female dogs included in this survey were bred in the past 5 years (Table C-1). Almost fifty-four percent of the female dogs were affected by reproductive problems, while only seventeen percent of the males were affected by reproductive problems. The most common reproductive problems in females bred in the past 5 years were mastitis (11%), difficulty whelping (11%), irregular heat cycles (10%), and failure to conceive (9%), as can be seen in Table C-2. The most common reproductive problems in males bred in the past 5 years were infertility (5.2%), prostatic disease (3.5%), abnormal semen (3.2%), and inappropriate libido (3.2%), as seen in Table C-3. In the past five years, 941 litters were reported (Table C-4). Litter and puppy problems occurred in 40% of the litters, as seen in Table C-5. Stillborn puppies occurred in 18.3% of the litters, fading puppies occurred in 7.8% of the litters, and monorchidism occurred in 4% of the litters.

Discussion

The response rate was approximately 61%, which was a moderately high rate. Problems encountered included some respondents were unfamiliar with medical terms, some found the instructions confusing, and some checked off conditions but did not specify the number of dogs affected. Skeletal problems were the health problem that owners were most concerned about; and cancer was the number one cause of death in German shorthair pointers surveyed. Differences between the sexes of more than 2% were found to be significant in four health problems. Males were more likely to have mouth

problems and females were more likely to have kidney/urinary tract problems, mammary tumors, and cancer. From this survey of 3272 German shorthair pointers, the top ten most reported health categories were temperament/behavior, cancer, arthritis, kidney/urinary, eyes, mouth, gastrointestinal, umbilical hernias, ears, and skin.

It is interesting to compare the 2005 survey results to the German shorthair pointer survey that was included in the *Shorthair* magazine in 1992. While the most recent survey had a moderately high response rate, the 1992 response rate was very low at only 14%. Differences between response rates may have occurred for a variety of reasons. The 1992 survey was sent inside a magazine to subscribers while the 2005 survey was sent to members of the German Shorthair Pointer Club of America. It may be that dog owners that belong to a club are more involved with trying to increase the healthiness of their dog's breed. There has also been a general increase in the amount of breed knowledge available to the general public and this perhaps has increased owner desire to become more involved.

The 1992 survey reported the top health problems as: bite/mouth, cancer, behavior, skin problems, hip dysplasia, epilepsy, and bloat/GDV. Hip dysplasia and epilepsy were the only 1992 reported problems that were not included in the top ten problems of the 2005 survey results. Differences between the survey results may be from the differences in response rates, differences between sample populations, differences between diagnostic or veterinary technology over the years, or even the definitions of particular diseases or health problems on the two surveys.

Appendix: Figures

Figure A-1: Owner Activities

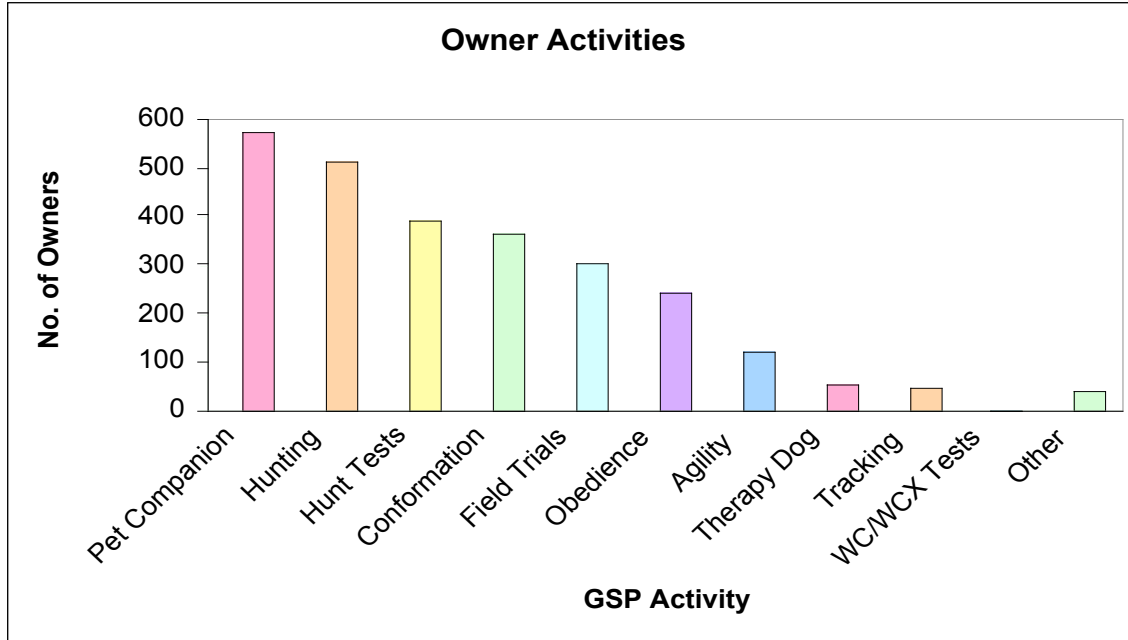


Figure A-2: Owner Concerns

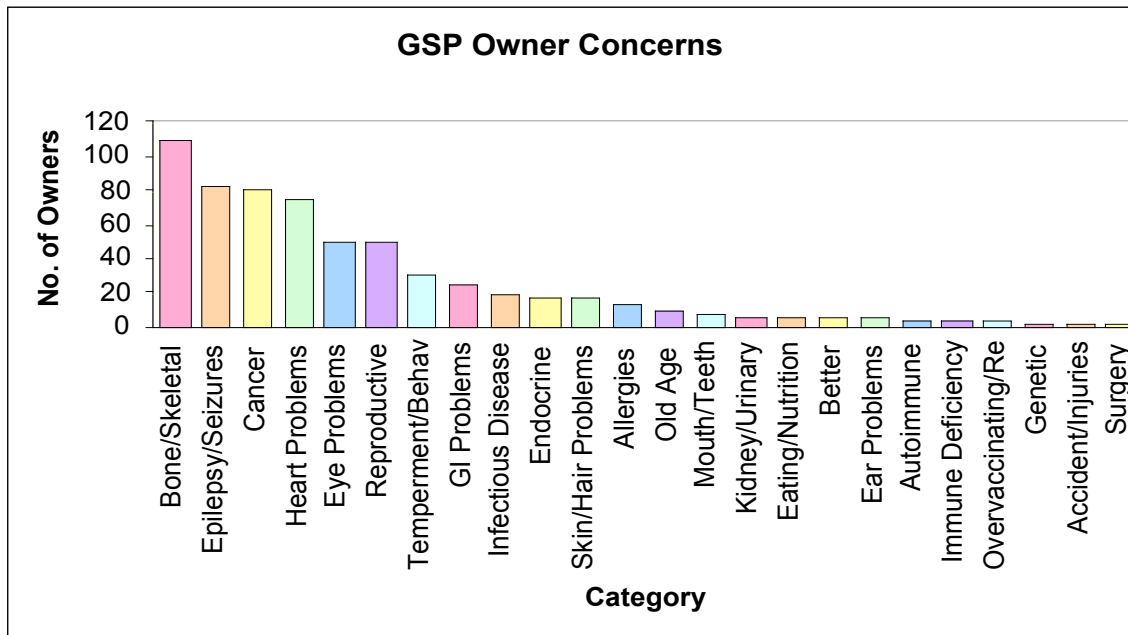
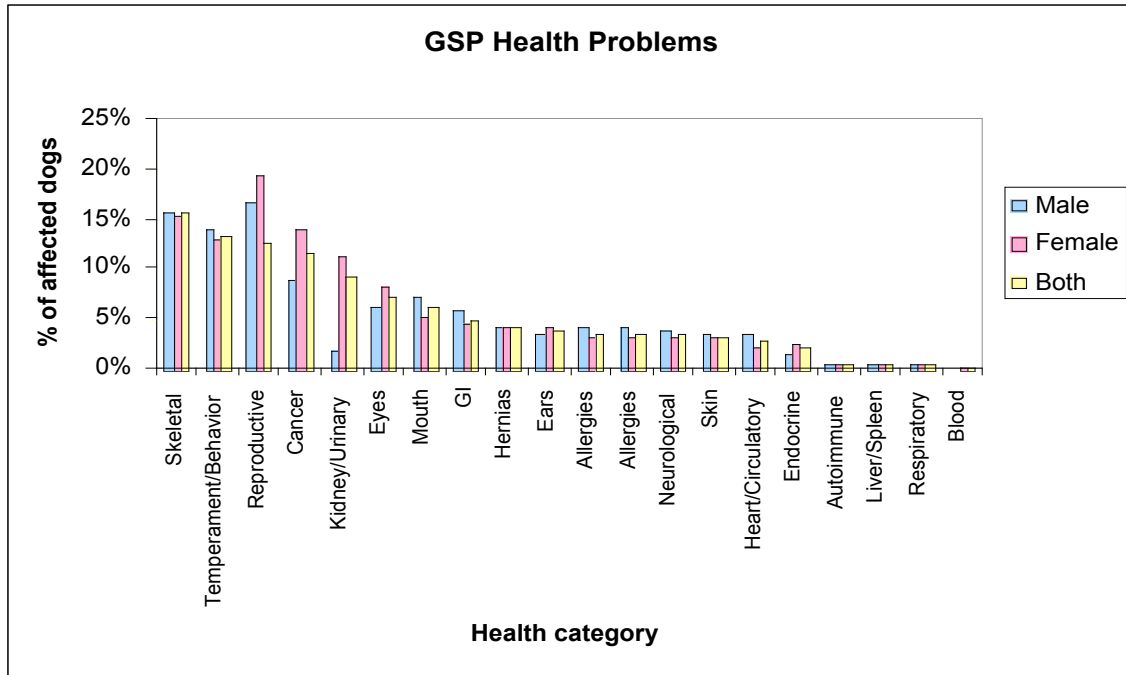


Figure A-3: Health Problems



Tables

Table A-1: Response Rate Calculations

Response Rate Information:

Original Number of Surveys Mailed		1364
Surveys with Invalid Addresses		33
Returned Surveys But No Dogs		19
Returned Blank Surveys		1
Unusable Information		0
Viable Respondent Addresses		1311
Total Completed Surveys (Number of Owners Included in Results)		795
Total Response Rate		60.64%

Table A-2: General Information

Years Owned German Shorthair Pointers:

Median		13
Maximum		57
Minimum		< 1

Number of GSP's Currently Owned:

	Male	Female
Median	1	2
Maximum	20	20
Minimum	0	0

Number of Living GSP's Included in Survey:

	Total	%
Male	1146	43.96%
Female	1461	56.04%
Total	2607	

Number of Deceased GSP's Included in Survey:

	Total	%
Male	289	43.46%
Female	376	56.54%
Total	665	

Total # of Living & Deceased Dogs Included:

	Total	%
Male	1435	43.86%
Female	1837	56.14%
Total	3272	

Table A-3: Owner Activities

Number of Owners with GSP's Involved In:

	Total	%
Pet Companion	572	71.95%
Hunting	515	64.78%
Hunt Tests	394	49.56%
Conformation	369	46.42%
Field Trials	305	38.36%
Obedience	242	30.44%
Agility	123	15.47%
Therapy Dog	57	7.17%
Tracking	51	6.42%
WC/WCX Tests	3	0.38%
Other	42	5.28%

Table A-4: Owner Concerns

Number of Owners Concerned with These Health Problems:

	Total
Bone/Skeletal	109
Epilepsy/Seizures	84
Cancer	81
Heart Problems	76
Eye Problems	51
Temperment/Behavior	31
GI Problems	26
Endocrine Disease/Problems	17
Skin/Hair Problems	17
Allergies	13
Mouth/Teeth Problems	9
Reproductive Problems	50
Kidney/Urinary Tract Problems	7
Infectious Disease	19
Old Age Problems/Quality of Life	10
Eating/Nutrition	7
Better Screening/Testing	6
Ear Problems	6
Autoimmune Problems	5
Immune Deficiency Problems/Disease	4
Overvaccinating/Reaction to Vaccines	4
Genetic Defects/Hereditary Diseases	3
Accident/Injuries	3
Surgery Complications	2

Table A-5: Dog Ages

Age of Living Dogs

	Male	Female
Median	4	4
Maximum	17	18
Minimum	< 1	< 1

Age at Death of Dogs who Died Since 1999

	Male	Female
Median	11	12
Maximum	17	17
Minimum	< 1	< 1

Table A-6: Causes of Death

Common Causes of Death		
Cancer	186	27.97%
Old Age	127	19.10%
Euthanized	42	6.32%
Gastrointestinal Problems/Disease	41	6.17%
Heart Disease/Problems	36	5.41%
Accident/Injury	35	5.26%
Unknown	23	3.46%
Kidney/Urinary Tract Disease/Problems	20	3.01%
Epilepsy/Seizures	18	2.71%
Bone/Skeletal Problems	18	2.71%
Hit by Car	14	2.11%
Liver Disease/Problems	12	1.80%
System/Organ Failure/Could Not Get Up	10	1.50%
Natural	8	1.20%
Stroke	8	1.20%
Infection	5	0.75%
Ate or Ingested Bedding/Pills/Grass/Etc.	6	0.90%
Neurologic Disease/Problems	4	0.60%
ME	3	0.45%
Reaction to Vaccines/Drugs/Overmedicated	3	0.45%
Aneurysm	2	0.30%
Complication due to Surgery	2	0.30%
Heat/Heat Stroke	2	0.30%
Septic Shock	2	0.30%
Tick Borne Diseases	2	0.30%
Virus	2	0.30%
Allergic Reaction	1	0.15%
Anesthesia	1	0.15%
Autoimmune Failure	1	0.15%
Birth Defect	1	0.15%
Blood Disease/Problems	1	0.15%
Brain Disorder	1	0.15%
Complications due to Pregnancy	1	0.15%
Cushing's Disease	1	0.15%
Descending Myelitis	1	0.15%
Diabetes	1	0.15%
Gangrene	1	0.15%
Muscle Loss	1	0.15%
Kidney/Liver Disease	1	0.15%
Laryngeal Paralysis	1	0.15%
Lupoid Dermatitis	1	0.15%
OMHA	1	0.15%
Ruptured Spleen	1	0.15%
Shunt	1	0.15%

Table B-1: Cancer

Cancer Types	Male	%	Female	%	Total	%
Hemangiosarcoma	10	0.70%	17	0.93%	27	0.83%
Lung Cancer	6	0.42%	12	0.65%	18	0.55%
Brain/CNS Tumor	7	0.49%	10	0.54%	17	0.52%
Lymphosarcoma	13	0.91%	15	0.82%	28	0.86%
Mammary Tumor	2	0.14%	102	5.55%	104	3.18%
Mast Cell Tumor	14	0.98%	37	2.01%	51	1.56%
Melanoma	12	0.84%	6	0.33%	18	0.55%
Osteosarcoma	10	0.70%	13	0.71%	23	0.70%
Perianal Tumor	5	0.35%	3	0.16%	8	0.24%
Prostatic Tumor	8	0.56%	-	-	8	0.24%
Squamous Cell Carcinoma	2	0.14%	1	0.05%	3	0.09%
Other:	36	2.51%	34	1.85%	70	2.14%
Spleen Tumors/Cancer	6		1		7	
Testicular Tumors/Cancer	6		-		6	
Abdominal Tumors/Cancer	3		2		5	
Liver Tumors/Cancer	2		3		5	
Nasal/Sinus Tumors/Cancer	4		1		5	
Bladder Cancer	0		4		4	
Heart/Chest Tumors	1		3		4	
Mouth/Jaw	0		4		4	
Lymphocytic Leukemia/Leukemia	0		3		3	
Pancreatic Cancer	2		1		3	
Apocrine/Senovial Cell Carcinoma	1		1		2	
Generalized	0		2		2	
Thyroid Cancer	1		1		2	
Anal Tumor/Cancer	0		1		1	
Astrocytoma	0		1		1	
Cancer of T Cell Lymphocytes	1		0		1	
Chemodectoma	0		1		1	
Colon Cancer	1		0		1	
Fibrosarcoma	0		1		1	
Fibrous Histiocytoma	1		0		1	
Hemangioperisarcoma	0		1		1	
Kidney Cancer	0		1		1	
Liposarcoma	0		1		1	
Myxosarcoma	1		0		1	
Sarcoma	1		0		1	
Spinal Cancer	1		0		1	
Throat Cancer	1		0		1	
Toe Cancer	1		0		1	
Tumor Between Hip and Spine	0		1		1	
Tumor on Skin	1		0		1	
Unspecified	1		0		1	
Total	176	8.71%	322	13.61%	498	11.46%

Table B-2: Skin/Hair Problems

Skin & Hair

	Male	%	Female	%	Total	%
Demodectic Mange	38	2.65%	47	2.56%	85	2.60%
Hereditary Lupoid Dermatitis	4	0.28%	2	0.11%	6	0.18%
Other:	10	0.70%	21	1.14%	32	0.98%
Fatty Tumors/Lipomas	2		9		11	
Alopecia/Pattern Baldness	2		4		6	
Sebaceous Grand Nevus/Sebaceous Cysts	1		0		2	
Skin Lesions	2		0		2	
Canine Papilloma	1		1		2	
Flaky Skin	0		1		1	
Vitiligo	1		0		1	
Follicular Dysplasia	0		1		1	
Contact Dermatitis	0		1		1	
Small Zit	0		1		1	
Discoloration of Hair on Face	0		1		1	
Ringworm	0		1		1	
Skin Infection	0		1		1	
Skin Tags	1		0		1	
Total	52	3.62%	70	3.81%	123	3.76%

Table B-3: Ear Problems

Ears

	Age	Male	%	Female	%	Total	%
Chronic Infection	-	29	2.02%	25	1.36%	54	1.65%
Deafness	12	21	1.46%	45	2.45%	66	2.02%
Other:	-	3	0.21%	6	0.33%	9	0.28%
Yeast Infections		1		4		5	
Ear Mites		0		1		1	
One Ear Infection		1		0		1	
Seasonal Irritation		0		1		1	
Vestibular Disease		1		0		1	
Total		53	3.69%	76	4.14%	129	3.94%

Table B-4: Eye Problems

Eyes	Age	Male	%	Female	%	Total	%
Cataracts	10	33	2.30%	56	3.05%	89	2.72%
Entropion	-	18	1.25%	23	1.25%	41	1.25%
Cherry Eyes	-	5	0.35%	10	0.54%	15	0.46%
Poor Night Vision	12	5	0.35%	9	0.49%	14	0.43%
Persistent Pupillary Membranes	-	4	0.28%	9	0.49%	13	0.40%
Day Blindness	-	6	0.42%	6	0.33%	12	0.37%
Distichiasis	-	4	0.28%	5	0.27%	9	0.28%
Retinal Folds	-	3	0.21%	5	0.27%	8	0.24%
Corneal Ulceration	-	1	0.07%	5	0.27%	6	0.18%
Ectropion	-	3	0.21%	2	0.11%	5	0.15%
Keratoconjunctivitis Sicca (dry eye)	12	0	0.00%	5	0.27%	5	0.15%
Corneal Dystrophy	-	0	0.00%	3	0.16%	3	0.09%
Progressive Retinal Atrophy	0.6	2	0.14%	1	0.05%	3	0.09%
Everted Cartilage of 3rd Eyelid	-	1	0.07%	1	0.05%	2	0.06%
Glaucoma	11.5	1	0.07%	1	0.05%	2	0.06%
Retinal Dysplasia	-	1	0.07%	1	0.05%	2	0.06%
Other:	-	2	0.14%	9	0.49%	11	0.34%
Horner's Syndrome		1		1		2	
Retinal Scarring from Rocky Mountain Spotted Fever		1		1		2	
Constant Weepy Eye		0		1		1	
Different Color Eyes		0		1		1	
Lazy Eye		0		1		1	
Eye Infection		0		1		1	
Chalazion		0		1		1	
Extra Eye Lashes		0		1		1	
Chronic White Exudate		0		1		1	
Total		89	6.20%	151	8.22%	242	7.33%

Table B-5: Mouth & Jaw Problems

Mouth	Male	%	Female	%	Total	%
Undershot Jaw	45	3.14%	37	2.01%	82	2.51%
Missing Teeth	28	1.95%	27	1.47%	55	1.68%
Parrot Mouth	18	1.25%	10	0.54%	28	0.86%
Wry Mouth	5	0.35%	6	0.33%	11	0.34%
Cleft Palate	3	0.21%	5	0.27%	8	0.24%
Other:	8	0.56%	11	0.60%	19	0.58%
Tooth Decay	0		6		6	
Extra Tooth/Teeth	2		1		3	
Crooked Teeth	2		0		2	
Infected Tooth/Teeth	1		1		2	
Anterior Cross Bite	0		1		1	
Retained Premolar	0		1		1	
Bad Bite	1		0		1	
Enamel Dysplasia	1		0		1	
Base Narrow Canines	0		1		1	
Tartar Buildup	1		0		1	
Total	107	7.46%	96	5.23%	203	6.20%

Table B-6: Respiratory Problems

Respiratory						
	Male	%	Female	%	Total	%
Laryngeal Paralysis	3	0.21%	4	0.22%	7	0.21%
Other:	5	0.35%	6	0.33%	11	0.34%
Cough	0		2		2	
Deterioration of Lungs from Fungal Infection	0		1		1	
Collapsed Trachea	0		1		1	
Punctured Lung (Inhaled Spear Grass)	0		1		1	
Asthma	1		0		1	
Congestion in Sinuses	1		0		1	
Abnormal CXR	1		0		1	
Deep Mycosin of Lung	1		0		1	
Pneumonia	1		0		1	
Unspecified	0		1		1	
Total	8	0.56%	10	0.54%	18	0.55%

Table B-7: Skeletal Problems

Bone or Skeletal							
	Age	Male	%	Female	%	Total	%
Arthritis	10	134	9.34%	184	10.02%	318	9.72%
Spondylosis	-	18	1.25%	26	1.42%	44	1.34%
Hip Dysplasia	-	19	1.32%	20	1.09%	39	1.19%
Ruptured Cruciate	-	14	0.98%	24	1.31%	38	1.16%
Osteochondritis dissecans (OCD)	-	11	0.77%	11	0.60%	22	0.67%
Panosteitis	-	10	0.70%	8	0.44%	18	0.55%
Polyarthritis	-	2	0.14%	1	0.05%	3	0.09%
Patellar Luxation	-	0	0.00%	1	0.05%	1	0.03%
Other:	-	14	0.98%	9	0.49%	23	0.70%
Tendonitis/Torn Tendon		4		1		5	
Shoulder Blade Nerve Pinched		1		0		1	
Fractured/Broken Bones		1		3		4	
Calcified Tendon on Shoulder		1		0		1	
Shoulder Problems; Lower Lumbar Pain		1		0		1	
Back Injury - Lower Lumbar Disk Damage		1		0		1	
Dislocated Shoulder		0		1		1	
Rear Weakness		1		1		2	
Long Bones		1		0		1	
Spinal Stenosis		0		1		1	
Hyperextended Carpus		0		1		1	
Elbow Dysplasia		1		0		1	
Lumbosacral Instability		1		0		1	
Bicipital Tenosynovitis		0		1		1	
Unspecified		1		0		1	
Total		222	15.47%	284	15.46%	506	15.46%

Table B-8: Autoimmune Problems

Autoimmune Disease						
	Male	%	Female	%	Total	%
Immune-Mediated Disease	5	0.35%	3	0.16%	8	0.24%
IMHA	0	0.00%	6	0.33%	6	0.18%
Symmetrical Lupoid	1	0.07%	2	0.11%	3	0.09%
Lupus	0	0.00%	0	0.00%	0	0.00%
Onychodystrophy	0	0.00%	0	0.00%	0	0.00%
Other:	3	0.21%	2	0.11%	5	0.15%
Low Immune System	3		1		4	
Lyme Disease	0		1		1	
Total	9	0.63%	13	0.71%	22	0.67%

Allergies						
	Male	%	Female	%	Total	%
Food Allergies	24	1.67%	18	0.98%	42	1.28%
Inhalant (atopy)	18	1.25%	28	1.52%	46	1.41%
Flea	2	0.14%	5	0.27%	7	0.21%
Other	16	1.11%	7	0.38%	23	0.70%
Reaction to Vaccines/Medications	5		2		7	
Insect Bites/Bee Stings	3		1		4	
Allergy to Shampoo	2		1		3	
Hot Spots	1		1		2	
Mold	1		0		1	
Skin Allergies	0		1		1	
Unknown	4		1		5	
Total	60	4.18%	58	3.16%	118	3.61%

Table B-9: Endocrine Problems

Endocrine							
	Age	Male	%	Female	%	Total	%
Hypothyroidism	4.5	15	1.05%	24	1.31%	39	1.19%
Addison's Disease	-	4	0.28%	9	0.49%	13	0.40%
Cushing's Disease	-	3	0.21%	8	0.44%	11	0.34%
Diabetes	-	3	0.21%	3	0.16%	6	0.18%
Other:	-	0	0.00%	2	0.11%	2	0.06%
Interstitial Lymphangectasia		0		1		1	
Unspecified Endocrine Disorder		0		1		1	
Total		25	1.74%	46	2.50%	71	2.17%

Table B-10: Gastrointestinal Problems

Gastrointestinal						
	Male	%	Female	%	Total	%
GDV/Bloating	26	1.81%	26	1.42%	52	1.59%
Anal Sac Disease	14	0.98%	21	1.14%	35	1.07%
Irritable Bowel Disease	18	1.25%	14	0.76%	32	0.98%
Chronic Colitis	6	0.42%	4	0.22%	10	0.31%
Pancreatic Disease	6	0.42%	4	0.22%	10	0.31%
Chronic Vomiting	2	0.14%	7	0.38%	9	0.28%
Pancreatic Enzyme Deficiency	4	0.28%	1	0.05%	5	0.15%
Perianal Fistula	1	0.07%	0	0.00%	1	0.03%
Other:	7	0.49%	5	0.27%	12	0.37%
Gastric Torsion/Mesenteric Torsion	3		1		4	
Gastroenteritis/Eosinophilic Gastroenteritis	2		1		3	
Protein Losing Enteropathy	0		1		1	
Intestinal Obstruction-surgically removed	0		1		1	
Giardia	1		0		1	
Small Bowel	1		0		1	
Stomach Reconstructed to Prevent Food Blockage	0		1		1	
Total	84	5.85%	82	4.46%	170	5.07%

Table B-11: Liver & Spleen Problems

Liver/Spleen						
	Male	%	Female	%	Total	%
Hepatitis	2	0.14%	3	0.16%	5	0.15%
Porto Systemic Shunt	1	0.07%	4	0.22%	5	0.15%
Hepatic Shunt	0	0.00%	2	0.11%	2	0.06%
Other:	4	0.28%	3	0.16%	7	0.21%
Liver and Kidney Failure	0		2		2	
Unspecified	2		0		2	
Liver Enzymes Don't Produce	1		0		1	
Liver Failure due to Rimadahl	0		1		1	
Protein Losing Kidney Disease	1		0		1	
Total	7	0.49%	12	0.65%	21	0.58%

Table B-12: Hernias

Hernias						
	Male	%	Female	%	Total	%
Umbilical	57	3.97%	76	4.14%	133	4.06%
Body Wall	1	0.07%	1	0.05%	2	0.06%
Diaphragmatic	0	0.00%	2	0.11%	2	0.06%
Inguinal	1	0.07%	0	0.00%	1	0.03%
PPDH	1	0.07%	0	0.00%	1	0.03%
Other:	2	0.14%	0	0.00%	2	0.06%
Perineal	2		0		2	
Total	62	4.32%	79	4.30%	143	4.31%

Table B-13: Kidney & Urinary Tract Problems

Kidney/Urinary Tract							
	Age	Male	%	Female	%	Total	%
Vaginitis	-	-	-	83	4.52%	83	4.52%
Incontinence after spay	9	-	-	88	4.79%	88	2.69%
Chronic Renal Failure	-	8	0.56%	18	0.98%	26	0.79%
Non-Spay Incontinence	-	13	0.91%	11	0.60%	24	0.73%
Bladder Stones	-	4	0.28%	4	0.22%	8	0.24%
Hydronephrosis	-	0	0.00%	0	0.00%	0	0.00%
Juvenile renal dysplasia	-	0	0.00%	0	0.00%	0	0.00%
Other	-	4	0.28%	7	0.38%	11	0.34%
UTI		1		5		6	
Crystals		1		1		2	
Urethral Spasm		1		0		1	
Bladder Infection		0		1		1	
Blood in Urine		1		0		1	
Total		29	2.02%	211	11.49%	246	9.32%

Table B-14: Heart & Blood Problems

Heart/Circulatory							
	Age	Male	%	Female	%	Total	%
Congestive Heart Failure	12	20	1.39%	17	0.93%	37	1.13%
Cardiomyopathy	-	8	0.56%	7	0.38%	15	0.46%
Subaortic Stenosis	-	6	0.42%	4	0.22%	10	0.31%
PDA	-	2	0.14%	4	0.22%	6	0.18%
Pulmonic Stenosis	-	0	0.00%	0	0.00%	0	0.00%
Other:	-	17	1.18%	12	0.65%	29	0.89%
Heart Murmur		16		9		25	
Myocarditis		0		1		1	
Pericardial Effusion Adenocarcinomatosis		0		1		1	
Damaged Heart from Heartworms		0		1		1	
Cardiac Arrhythmia		1		0		1	
Total		53	3.69%	44	2.40%	122	2.96%
Blood							
		Male	%	Female	%	Total	%
Clotting Disorder		1	0.07%	3	0.16%	4	0.12%
Von Willebrand's Disease Type II		0	0.00%	2	0.11%	2	0.06%
Lymphedema		0	0.00%	0	0.00%	0	0.00%
Other:		0	0.00%	0	0.00%	0	0.00%
Total		1	0.07%	5	0.27%	6	0.18%

Table B-15: Neurological Problems

Neurological							
	Age	Male	%	Female	%	Total	%
Epilepsy/Seizures	3	46	3.21%	48	2.61%	94	2.87%
Slipped Disc	-	11	0.77%	7	0.38%	18	0.55%
Other:	-	5	0.35%	5	0.27%	10	0.31%
Stroke		2		0		2	
Fibrocartilaginous Embolism		0		1		1	
Vagal Neural Syndrome		0		1		1	
Congenital Disorder		0		1		1	
Degenerative Disks-trauma relater		1		0		1	
Descending Myelitis		0		1		1	
Meningitis		1		0		1	
Degenerative Neurological Disorder		1		0		1	
Unspecified		0		1		1	
Total		62	4.32%	60	3.27%	122	3.73%

Table B-16: Temperament & Behavioral Problems

Temperament/Behavior							
		Male	%	Female	%	Total	%
Noise Phobias		58	4.04%	107	5.82%	165	5.04%
Dog-Dog Aggression		91	6.34%	70	3.81%	161	4.92%
Aggression Towards People		24	1.67%	23	1.25%	47	1.44%
Fear Aggression		17	1.18%	24	1.31%	41	1.25%
Other:		9	0.63%	12	0.65%	21	0.64%
Shy		2		5		7	
Territorial		3		0		3	
Separation Anxiety/Panic Attacks		1		2		3	
Obsessive/Compulsive Behavior		0		2		2	
Nervous Around Small Children		2		0		2	
Cat Aggression		0		1		1	
Mindless Barking		0		1		1	
Fear to the Point of Disorientation		1		0		1	
Nervousness		0		1		1	
Total		199	13.87%	236	12.85%	442	13.29%

Table C-1: Dogs Bred in Past 5 Years

Number of GSP's Bred in the Past 5 Years:

Male	346	24.11%
Female	664	36.15%
Total	1010	30.87%

Table C-2: Female Reproductive Problems

Female Reproductive Problems of Dogs Bred in Last 5 Years

		% of 664
Mastitis	73	10.99%
Difficulty Whelping	71	10.69%
Irregular Heat Cycles	65	9.79%
Failure to Conceive	59	8.89%
Abortions/Resorption	33	4.97%
Pyometra	24	3.61%
Primary Uterine Inertia	16	2.41%
Pseudohermaphrodism	6	0.90%
Other:	12	1.81%
Vaginal Stricture	2	
C-Section	2	
Missing One Nipple	1	
False Pregnancy	1	
Not Producing Enough Milk to Feed	1	
Retained Puppy and Got a Bad Infection	1	
Elevated White Blood Cell Count	1	
Metritis	1	
Rejected Pups	1	
Twisted Uterine Canal	1	
Total	359	54.07%

Table C-3: Male Reproductive Problems

Male Reproductive Problems of Dogs Bred in Last 5 Years

		% of 346
Subfertile/Infertile	18	5.20%
Prostatic Disease	12	3.47%
Abnormal Semen	11	3.18%
Inappropriate Libido	11	3.18%
Pseudohermaphrodism	2	0.58%
Other:	4	1.16%
Cryptorchidism (Not Bred)	2	
Testicular Atrophy	1	
Tumor on Penile Shaft	1	
Total	58	16.76%

Table C-4: Number of Litters in Past 5 Years

Number of Litters in the Past 5 Years:

Number of Litters	Total 941
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Table C-5: Puppy & Litter Problems

Puppy/Litters Problems:

	Affected #Litters	Affected #Puppies	% of 941 Litters
Stillborn	172.5	260	18.33%
Unthrifty	73.5	102	7.81%
Monocryptorchidism	38	74	4.04%
Neurologic Disorder	14	26	1.49%
Cryptorchidism	17	20	1.81%
Cleft Palates	19	18	2.02%
Pseudohermaphradism	7	11	0.74%
Other:	34	48	3.61%
Umbilical Hernia	6	12	
Herpes Virus	4	8	
Intestines Outside Abdominal Cavity	4	5	
Entropion	5	5	
Undershot Jaw	4	4	
Overshot Jaw	3	4	
Sub Aortic Stenosis	3	3	
Autoimmune Disease - Dwarfism	1	3	
Rear End Not Developed	1	1	
Broken Back	1	1	
Late Descending Testicles	1	1	
Breathing Problem	1	1	
Total	375	559	39.85%

Kidney/Urinary Tract

	+	-	Total
Female	211	1626	1837
Male	29	1406	1435
Total	246	3026	3272
OR	6.29	CI	(4.24, 9.34)
Chi-Sq	106.19	P-value	< 0.0001

Mammary Tumor

	+	-	Total
Female	102	1735	1837
Male	2	1433	1435
Total	104	3168	3272
OR	42.12	CI	(10.38, 171.02)
Chi-Sq	76.71	P-value	< 0.0001

Cancer

	+	-	Total
Female	322	1515	1837
Male	176	1259	1435
Total	509	2763	3272
OR	1.52	CI	(1.24, 1.86)
Chi-Sq	17.3	P-value	< 0.0001

Mouth Problems

	+	-	Total
Male	107	1328	1435
Female	96	1741	1837
Total	203	3069	3272
OR	1.46	CI	(1.09, 1.96)
Chi-Sq	6.89	P-value	0.0087