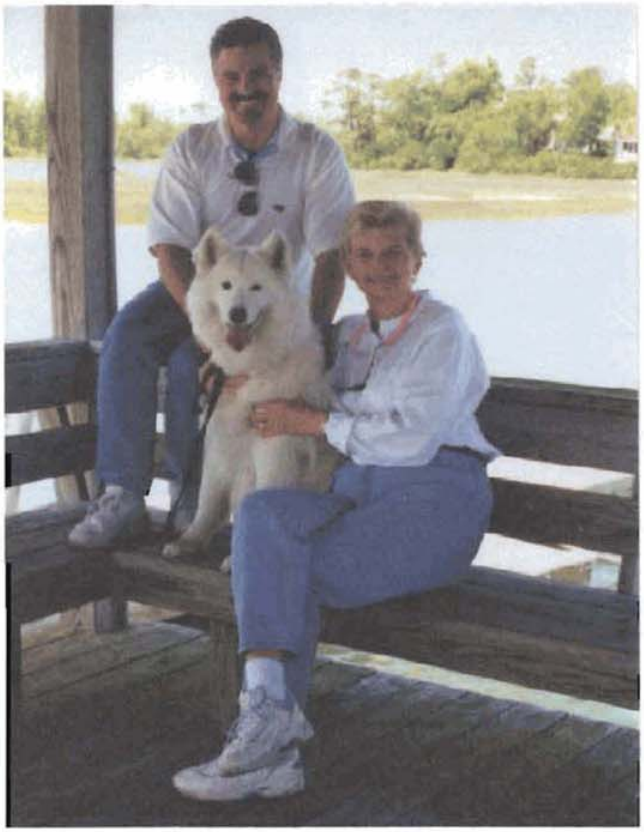
Health Status of the Irish Water Spaniel

DINERO ASSOCIATES

Thomas E. Dinero, PhD

Sonya L. Dinero EdD

May, 2001



About the Authors

Thomas A. Dinero graduated from the University of North Carolina at Chapel Hill in 1964 with an AB in psychology and received his Ph.D. in Educational Psychology from the State University of New York at Buffalo in 1970. He taught graduate level statistics, test theory, and research methodology from 1970 to 1995 at Kent State University. He has published in the area of test theory and has worked with Goodyear Corporation and the Veterans Administration, among other consultancies.

Sonya L. Dinero has a bachelors *magna cum laude* and masters in mathematics and an EdD in educational psychology. She was a professor at Kent State University, Kent, Ohio, and was Director of the Bureau of Research Training and Services there for many years. She has published in the areas of statistics and measurement. She has consulted with a wide variety of agencies and corporations including the Firestone Corporation, the American Dental Association, the Cleveland (Ohio) City Schools and the Education Department of the State of Ohio.

Alexa L. Dinero, Samoyed, age 6, has not yet completed courses in either of the two training academies in which she was enrolled. Her mentors have requested anonymity. Her areas of expertise are pulling, cuddling and training human beings. Her interests include riding in any moving vehicle on land or water, burying plush toys and swimming. She is proud of her title, *Honorary Irish Water Spaniel.*

Introduction

Improving the condition of the Irish Water Spaniels which are entrusted to our care is a priority of the Irish Water Spaniel Club of America. Their condition, health status, and happiness are forefront in this, and we believe that their health, and that of future generations, is paramount. In order to know how to work toward improvement in this area, it is essential to know the current health status of the present generation. In order to do this, a study was undertaken to get as accurate a description as possible of the dogs who are living today.

A note should be made about the selection of the data set. Only living dogs were considered because the present state of health is important. Problems from previous generations may have been resolved or may no longer be relevant. Some respondents did volunteer information on deceased animals and this was collated separately. All statistics presented in the following tables represents living IWS's.

A statistical note is appropriate here. We cannot claim that this is a "scientific" sample in the sense of complete and unbiased representation of the breed. Forty percent of members contacted did not reply, and the number of IWS living with non-members is unknown. What does this say about our data? Since we were doing a count and there may be any number of animals out there with any of the problems, the frequencies represented can be considered an undercount. On the other hand, the relative proportion of the various problems might indeed change if we were to contact all owners. Our data certainly reflect the most engaged of the members and might be considered a "worst case scenario" if owners of healthy dogs did not respond.

Method

A questionnaire was designed with the help of Ginny Spencer of Wilmington, North Carolina. The widest range of physical and mental conditions which could possibly pose serious problems to breeding, raising, training, and enjoying IWS's was created with the assistance of breeders and other owners. This list was later amended by others. Spellings and definitions of terms is consistent with the Merck Manual of Veterinary Medicine.

Several additional questions were added to aid in interpretation. Two of these have an open-ended format, allowing the respondents to clarify their previous responses or add new information.

Sample

In all, 376 surveys were sent to owners and breeders who belonged to the IWSCA between January and March, 2001. Surveys were sent out during the third week of January, and March 10 was set as the final date for accepting responses. Members were reminded through the internet to return the forms. The geographical distribution and response pattern were as presented in Table 1.

Table 1: Geographical Dispersion of the Respondents

Location	Number Sent	Number Received	Return Rate
United States	336	214	63.7%
Canada	26	16	61.5%
Europe	10	6	60%
Australia/New Zealand	4	2	50%
Total	376	238	63.3%

The response rate can be considered high for a mail survey, where no incentive for answering was given by the Club. Except for the country of origin, there was no identification of the respondents unless someone volunteered.

The distribution of number of years the respondents owned IWS's is presented in Table 2. Half of the respondents have owned them fewer than ten years. Four respondents failed to answer the question.

Table 2: Number of Years the Respondents Have Owned IWS's

Number of Years	Frequency	Percentage
0 - 1	16	6.8
2 - 5	57	24.4
6 - 10	57	24.4
11 - 14	35	15.0
15 - 19	24	10.3
20 or more	45	19.2
Total	234	

The number of dogs who have not had a litter was 56. Of those who did, the number of litters was 273 before 1998; 25 in 1998; 22 in 1999; and 34 in 2000.

The number of IWS's currently living on the premises of the respondents varied from one to 14: the modal (most frequently reported) value was 1 with a frequency of 118. The total number of animals included in the survey results was 442.

Results

All responses, regardless of the medical classification or organ system, were totaled and ranked from most frequently seen to least. The top seven are shown in Figure 1. Notice that there is variability in the severity of the conditions reported.. The list is extended to the top 23 problems and this is presented in Table 3 where the percentages have been calculated on the basis of 442 dogs.

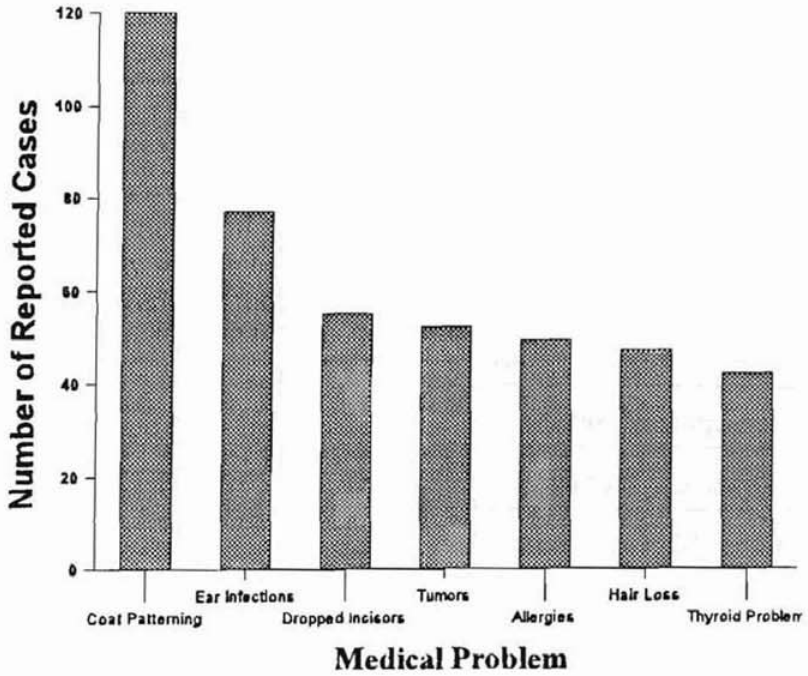


Figure 1: Frequencies of the Top Seven Reported Problems

Table 3: The Most Frequently Occurring Medical Problems

Medical Problem	Frequency	Percentage of Dogs
Coat Patterning	120	27.15
Ear Infections	77	17.42
Dropped Incisors	55	12.44
Tumors	52	11.76
Allergies	49	11.09
Hair Loss	47	10.63
Thyroid	42	9.50
Calculus	39	8.82
Dermatitis	38	8.60
Failure to Conceive	37	8.37
Shyness	37	8.37
Bladder Infections	37	8.37
Still Births	36	8.14
Hip Dysplasia	35	7.92
Arthritis	33	7.47
Conjunctivitis	33	7.47
Adverse Drug Reactions	32	7.24
Non-epileptic Seizures	30	6.79
Other Ear Problems	28	6.33
Other Skin Problems	25	5.66
Irregular Heat Cycles	24	5.43
Unusual Aggression	21	4.75
Skin Infections	20	4.52

On the following pages the data for each category of medical problem have been graphed separately. Hematology data were not graphed because there was only one response, a case of anemia. In addition, 52 cases of tumors were reported.

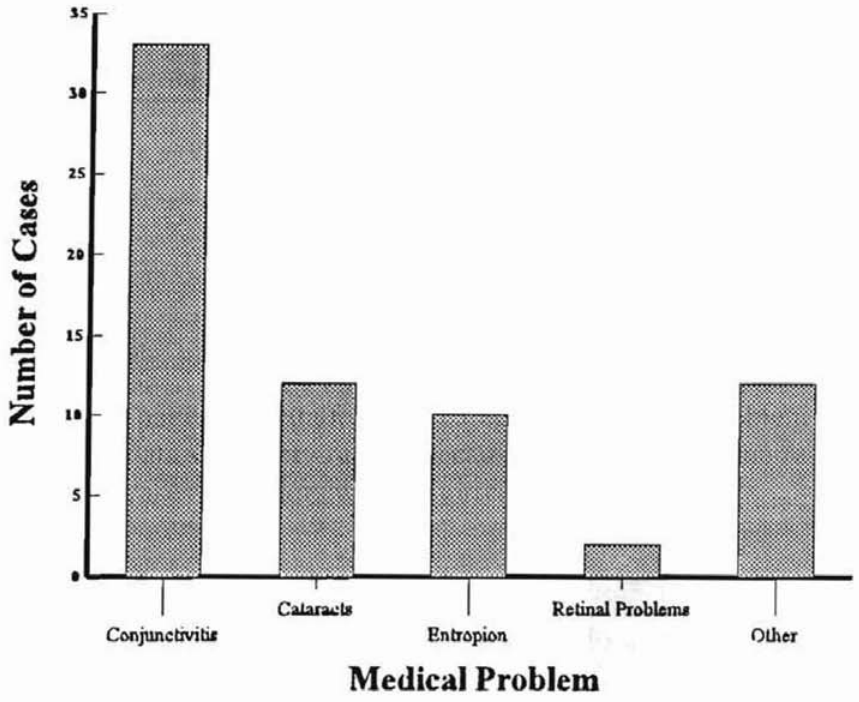


Figure 2: Frequencies of Medical Problems: Eyes

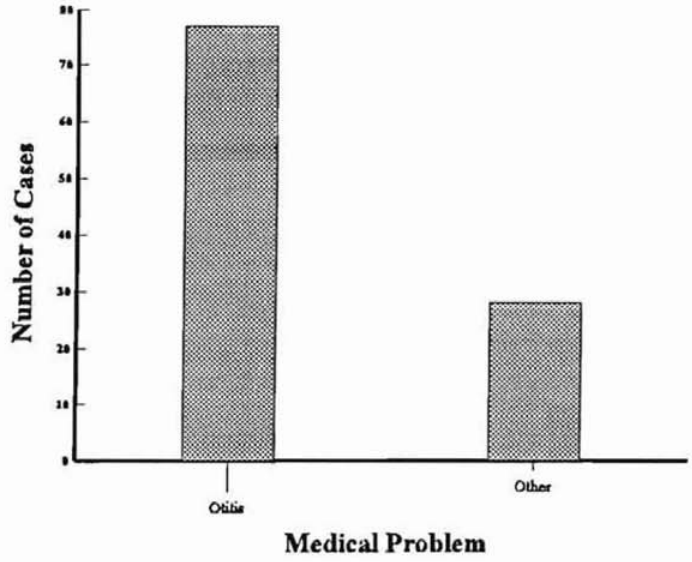


Figure 3: Frequencies of Medical Problems: Ears

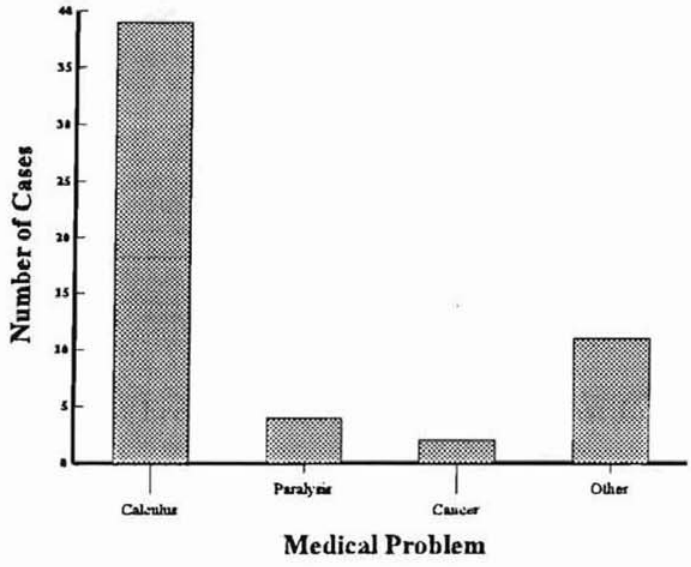


Figure 4: Frequencies of Medical Problems: Bones/Joints/Muscles

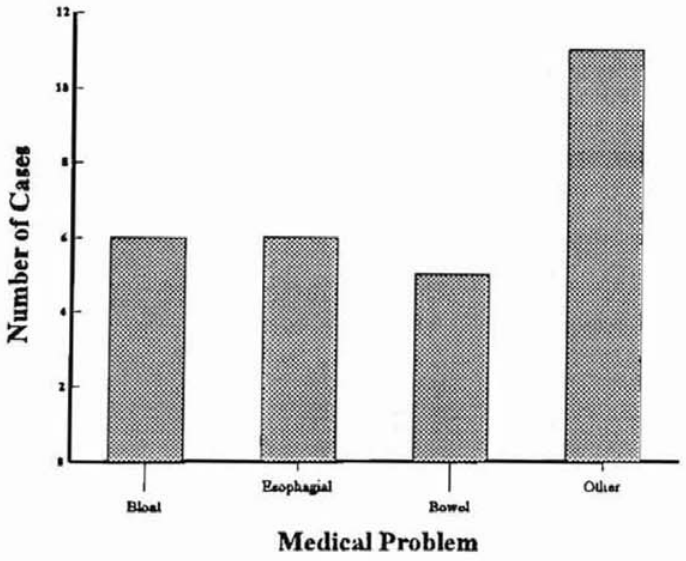


Figure 5: Frequencies of Medical Problems: Gastrointestinal

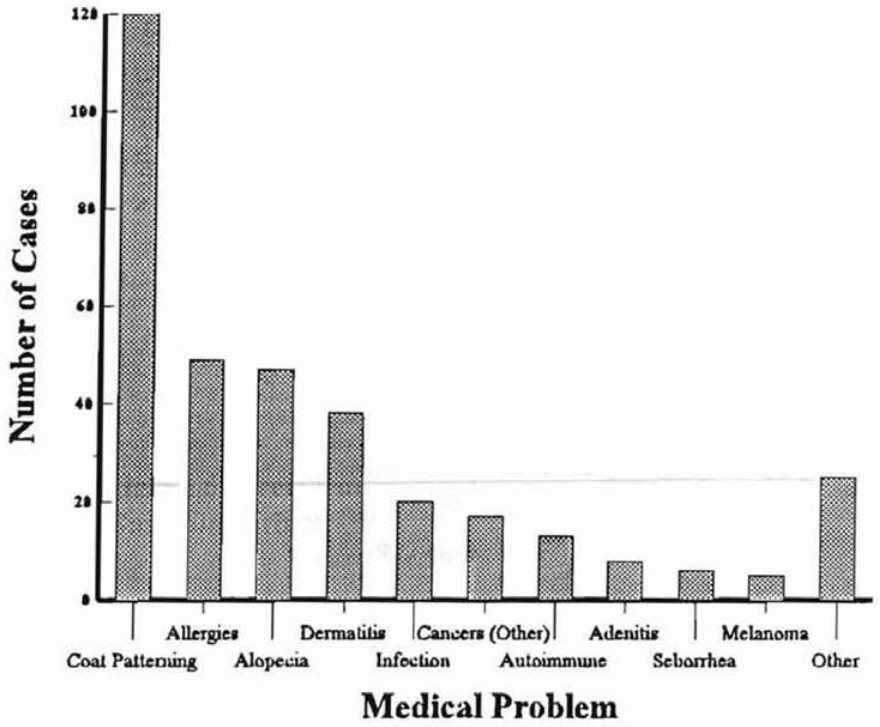


Figure 6: Frequencies of Medical Problems: Skin

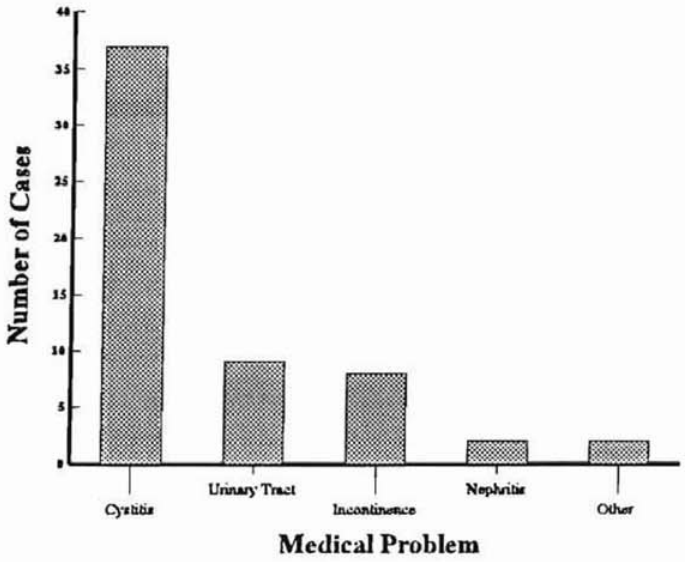


Figure 7: Frequencies of Medical Problems: Bladder/Kidney

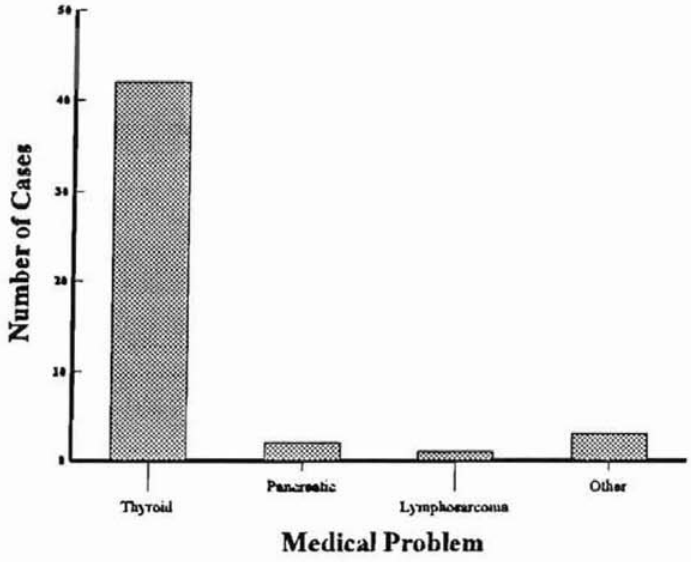


Figure 8: Frequencies of Medical Problems: Endocrine

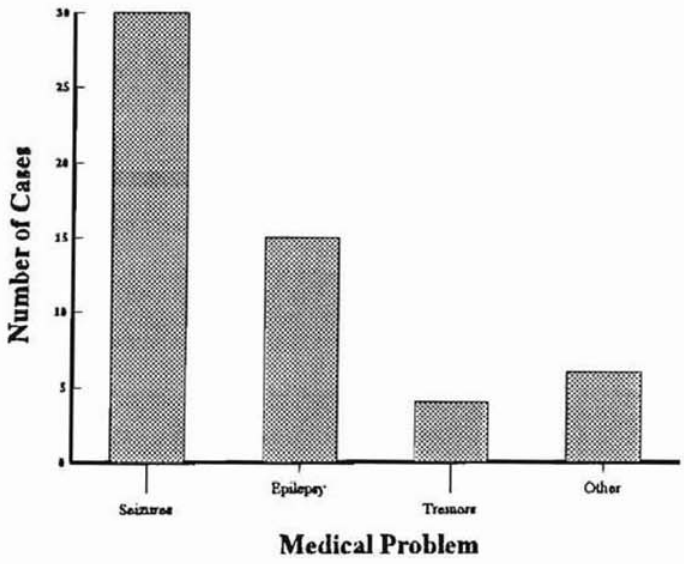


Figure 9: Frequencies of Medical Problems: Nervous System

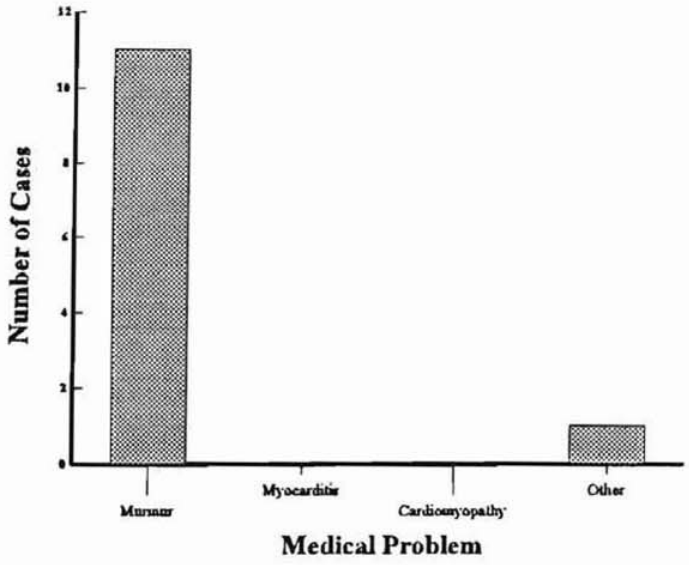


Figure 10: Frequencies of Medical Problems: Heart

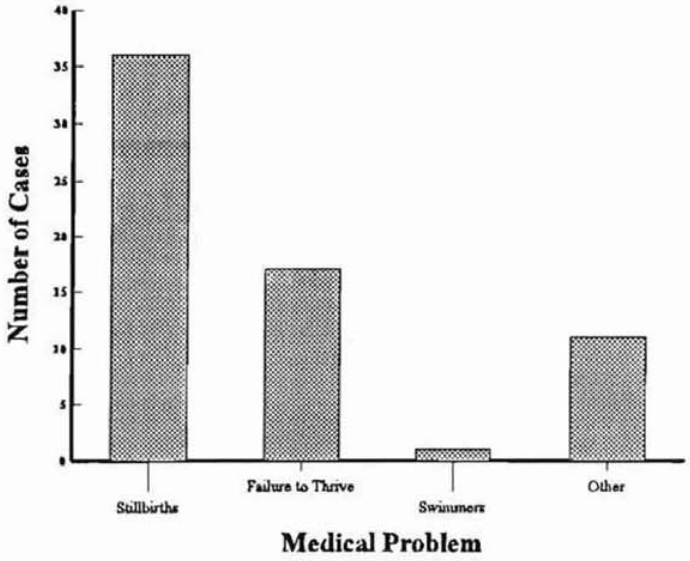


Figure 11: Frequencies of Medical Problems: Puppy

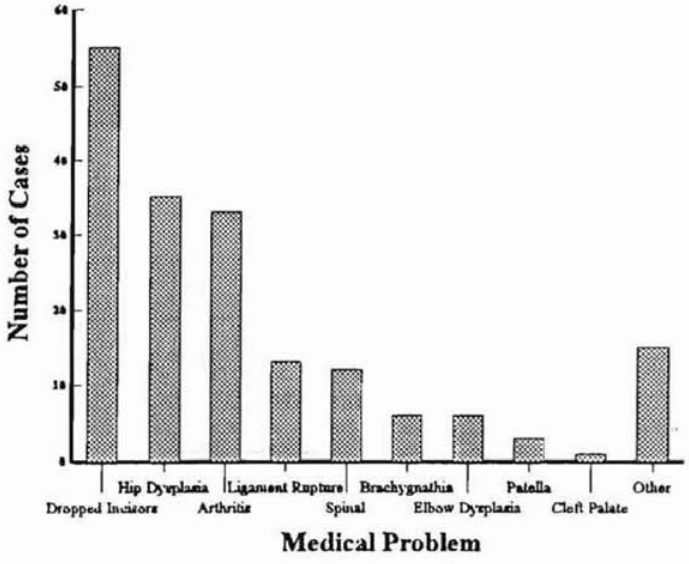


Figure 12: Frequencies of Medical Problems: Orthopedic

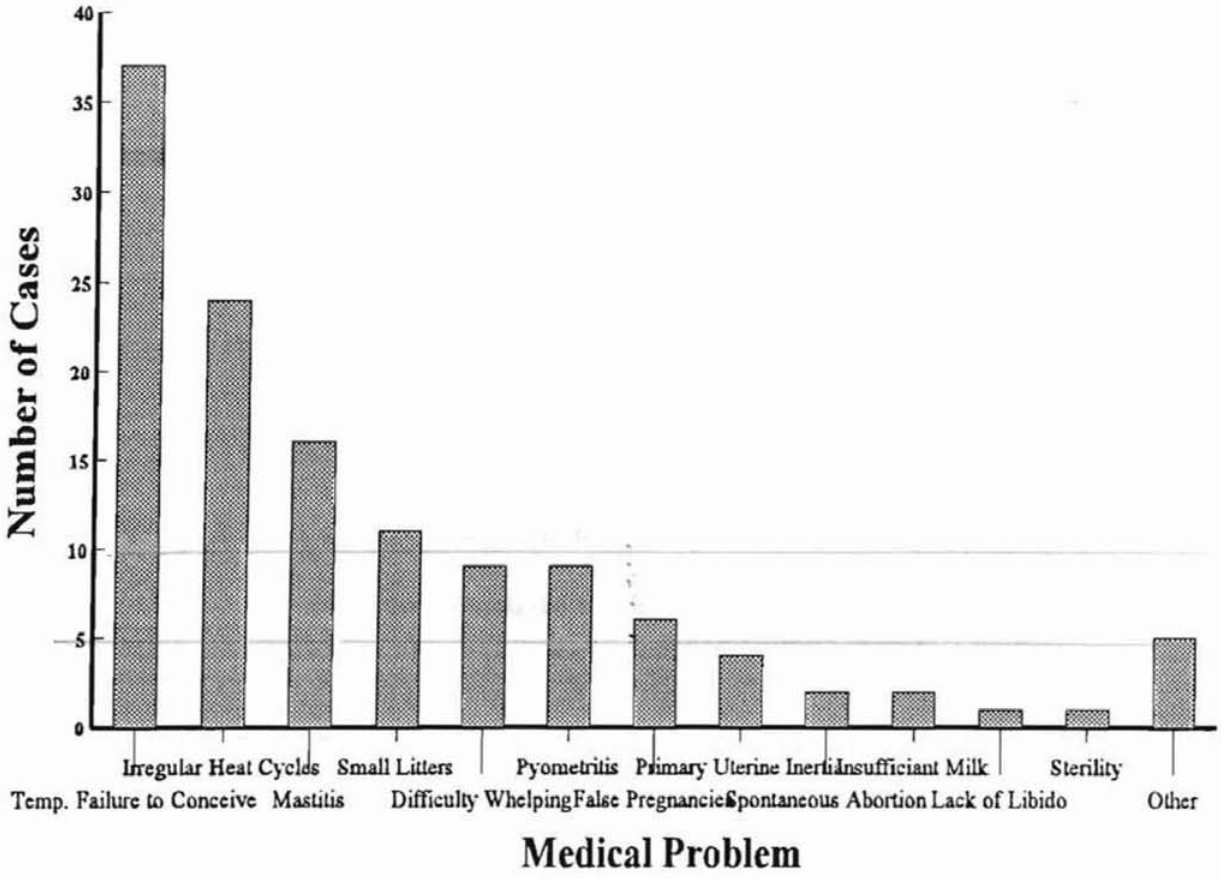


Figure 13: Frequencies of Medical Problems: Reproductive/Female

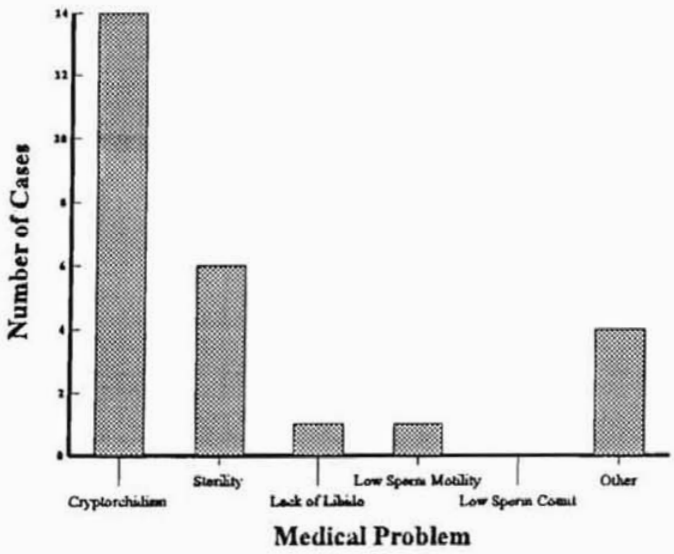


Figure 14: Frequencies of Medical Problems: Reproductive/Male

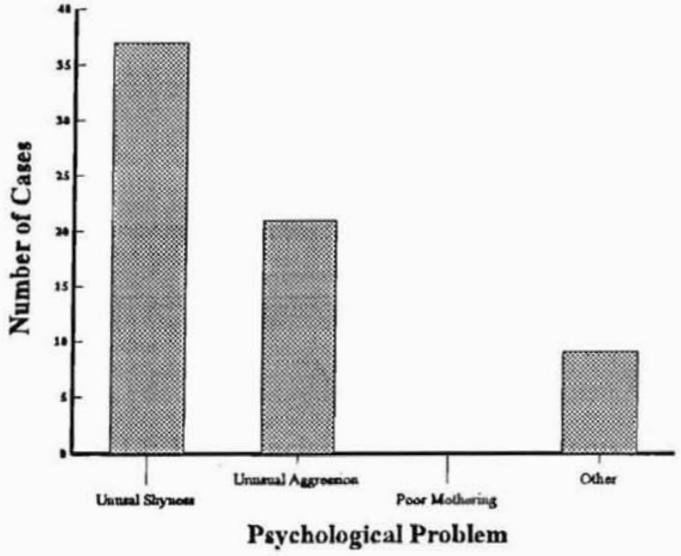


Figure 15: Frequencies of Psychological Problems

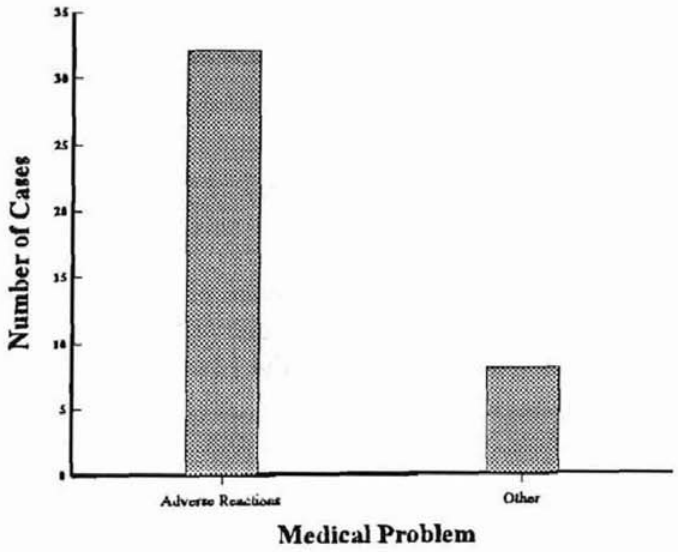


Figure 16: Frequencies of Medical Problems: Drug Reactions

Written responses were scanned for information about the four most frequently appearing medical problems or those with a possible genetic origin. These included coat patterning, tumors, allergies, and hair loss (alopecia).

While coat patterning is not considered a medical problem *per se*, it does have the strong possibility of having a genetic origin. It may, therefore, be of interest to breeders and future owners. There were 120 reported cases of coat patterning among the 442 dogs in the sample for a resulting rate of 27%. Of the 238 surveys returned, 23 owners wrote about their dog(s). It appears that many of the cases reported were in puppies, and that many of these were resolved. Of the cases reported among adult dogs, the patterning appears to be permanent. There was no relationship with thyroid problems.

Cases of alopecia were reported in 47 dogs or 10.6% of the dogs in the survey. Many of the cases were in puppies, and most of the descriptions were of localized coat loss. At least two instances involved vaccination sites, suggesting the possibility of a temporary allergic reaction.

Allergies were reported in 49 cases (11.1%). Of the 16 written comments, seven indicated a skin allergy, five an allergic reaction to food, one to both, and three were unspecified. Because of the alopecia at the vaccination sites reported, it was thought that there might be a connection between allergic reactions and skin problems. There were 166 dogs with information on either or both conditions, forming a data base large enough to study. The chances of a dog without an allergic reaction having alopecia are 10 in 100, while the chances of a dog with an allergy having alopecia are 42 out of 100, that is, four times the rate.[1]

There were 162 dogs with information on either dermatitis or allergic reactions or both. An analysis was run on these two variables, and a non-chance relationship[2] was found indicating a link between these two conditions. The data revealed that dogs with no allergies have a chance of having dermatitis of 8/100 while those dogs with a reported allergy, either in the present or the past, have a 40/100 chance. While no cause and effect relationship can be inferred, the dogs with allergies are five times as likely to have dermatitis than those dogs without a reported allergic reaction.

We also studied the relationship between allergic reactions and coat patterning in the 162 dogs with data on one or both of these conditions. The resulting data[3] indicated that those dogs with allergic reactions have a 73/100 chance of having no coat patterning while those with allergies have a chance of 32 out of 100: those with allergies have over twice the chance (2.28 times) of having coat patterning than those without allergies.

The respondents reported that 52 of their dogs have or have had one or more tumors, for an occurrence rate of slightly over 8 in 100. Twenty-three wrote comments. The youngest dog

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[1]A chi square analysis was run and the resulting $\chi^2 = 15.68$ with one degree of freedom was significant at $\alpha = .0001$.

[2]A chi square analysis was run and the resulting $\chi^2 = 44.84$ with one degree of freedom was significant at $\alpha = .0001$.

[3]A chi square analysis was run and the resulting $\chi^2 = 13.34$ with one degree of freedom was significant at $\alpha = .001$.

was 6 months old when the tumor was found, while the oldest was 13 years. Most of the 18 owners who noted a dog's age reported ages between 5 years and 8 years.

Forty-two dogs (9.5%) were reported to have a thyroid problem, most often hypothyroidism. The link between thyroid problems and drug reactions was studied in 169 animals for which there was information on both of these conditions[4]. If a dog has a thyroid condition, he has a chance of having a drug reaction of 29/100, while if there is no thyroid condition, the chances are 10 out of 100. The resulting odds ratio is 3:1, indicating that dogs with a thyroid condition are three times as likely to have a drug reaction as those without.

A non-medical but possibly genetic condition that was frequently mentioned is shyness. Because it is possible that shyness could be related to aggression, these two psychological traits were studied. The data revealed a non-chance relationship between the two traits[5]. A dog that has not shown any shyness has a 4/100 chance of demonstrating aggression while a reported shy dog has a 40/100 chance, that is the odds are ten time greater that a shy dog will demonstrate aggression than a non-shy dog. Caution should be taken in interpreting these data and in generalizing to the population at large. These psychological traits are very subjective in nature, and without a clear definition of "aggression" or "shyness" specified in exact behaviors, the data are merely preliminary in nature. They do, however, suggest the merits of further study.

A word of caution should be made concerning interpreting the relationships reported above. The data are correlational and show only relationships–they do not, by themselves, indicate what is causing either condition or causing the relationship between the conditions. For any of the relationship noted, there could be one or more causative patterns, involving one or more additional factors, which could have resulted in our data.

Many cases of thyroid deficiency, for example, may not have been identified, may not be severe enough to cause problems, or may not have been identified by laboratory tests. Also, of the 24 thyroid cases, some may have had different drugs administered with possibly differing dosages and some dogs may not have had any drugs at all, and so no reaction would have been noted.

As with any data in this survey, we must be cautious in generalizing to all Irish water spaniels for many reasons. First, the non-respondents may all have healthy dogs, in which case the data would represent relatively more sick dogs. If the non-respondents' dogs are identical to our sample, we are on target, but if they have more illnesses, if the owners are reluctant to report data, or if the owners were not sure how severe symptoms should have been to merit reporting, we have under-estimated the amount of problems. Overall, then, our data are a lower boundary, that is, a conservative estimate of the amount of problems.

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[4]A chi square analysis was run and the resulting $\chi^2 = 6.44$ with one degree of freedom was significant at $\alpha = .01$.

[5]A chi square analysis was run and the resulting $\chi^2 = 33.49$ with one degree of freedom was significant at $\alpha = .001$.

Deceased Animals

Many respondents reported problems with deceased animals. For the most part, the pattern of medical issues reflected those of living animals. There were several exceptions, and these are discussed here.

A total of 365 deceased animals' problems were reported, and the most frequently occurring are presented in Figure 17. All cancers were reported under one heading; these included invasions of all principle organ systems, but no one system or organ was represented more than

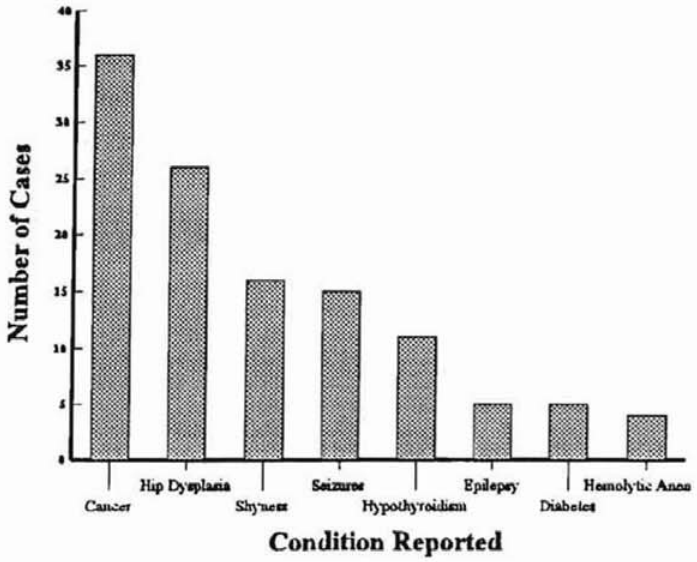

Figure 17: Frequencies of Conditions Reported Among Deceased Animals

another. Cancers would have not been reported as frequently among living animals as among deceased. As one respondent said, "The incidence of cancer in the breed may be higher than this survey would reflect."

It should be reported that one respondent offered the insight (an opinion) that three of the main causes of death among IWS's in the United Kingdom are very likely torsion, lymphoma, and lymphosarcoma.

Discussion

The intention of the present study was to investigate the number of occurrences of conditions of Irish Water Spaniels which might be genetic in origin. Some of the conditions studied are, therefore, not truly medical or actual disease processes. The study was not meant to involve more elaborate measures of epidemiological risk, rate, or other variables. Deceased animals were purposely not the focus of the survey because we had no rationale for putting a cutoff date on this. Additionally, strategic breeding may have eliminated some of the conditions prevalent in past generations. Unless we asked owners to refer to documented personal or veterinary records, our data would have been confounded by respondents' memories, with the older dogs' conditions less reliable than those of more recent history.

Interest in the breed extended to future litters and to past problems. Some writers added information about their deceased dogs, claiming, with some validity, that lethal problems such as some forms of cancer for example would have removed the deceased animals from the survey.

Owners showed concern about several issues, perhaps the most frequently mentioned being temperament. It was put most eloquently and in a detailed fashion by one who said "My personal experience has been that IWS have had temperament problems--extreme shyness, fearfulness, despite intense socialization.... At shows, I have observed IWS slinking along, tails between legs, jumping at any noise, fear of walking on wooden bridges, we have also had 2 with fear of any loud or unusual noises. I think that temperament must be seriously considered.." Other issues discussed include reactions to immunizations, food problems, and epilepsy or other seizures.

Some owners have reported using holistic approaches, non-traditional diets, or alternative medical treatments. These owners were in the minority.

The high response rate in the present study reflects the strong interest that Club members have in their Irish Water Spaniels. Their written responses indicated intense concern for the individual animals under their care. Those owners who responded in writing showed an extremely caring dedication to their animals and to the breed. Many wrote extended descriptions or offered follow-up information. We hope that the information presented in this report will be helpful to all owners of Irish Water Spaniels, to those who choose to breed and to those who merely want companionship or the pride which comes from bringing a beautiful dog to its maximum potential.

Health Status of the Irish Water Spaniel

An Executive Summary

DINERO ASSOCIATES

Thomas E. Dinero, PhD

Sonya L. Dinero EdD

May, 2001

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In all, 376 surveys were sent to owners and breeders who belonged to the IWSCA between January and March, 2001. Ninety-seven percent of the responses came from either the United States (214) or Canada (16). In all, 442 dogs are represented in the data base.

The problems found are, in descending order of occurrence: coat patterning, ear infections, dropped incisors, tumors, allergies, hair loss, thyroid problems (most often hypothyroidism), calculus, dermatitis, failure to conceive, shyness, bladder infections, still births, hip dysplasia, arthritis, conjunctivitis, adverse drug reactions, non-epileptic seizures, other ear problems, other skin problems, irregular heat cycles, unusual aggression, and skin infections. The actual numbers of cases may be found in the complete report.

Several of the more frequent conditions were studied in more detail. These include: coat patterning, allergies, thyroid condition, alopecia, and shyness and aggression.

There were 120 reported cases of coat patterning among the 442 dogs in the sample for a resulting rate of 27%. Of the 238 surveys returned, 23 owners wrote about their dog(s). It appears that many of the cases reported were in puppies, and that many of these were resolved. Of the cases reported among adult dogs, the patterning appears to be permanent. There was no relationship with thyroid problems.

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Many respondents reported problems with deceased animals. For the most part, the pattern of medical issues reflected those of living animals. There were several exceptions: Cancers and hip dysplasia would have not been reported as frequently among living animals as among deceased. As one respondent said, "The incidence of cancer in the breed may be higher than this survey would reflect."

Owners showed concern about several issues, perhaps the most frequently mentioned being temperament. Other issues discussed include reactions to immunizations, food problems, and epilepsy or other seizures.

The high response rate in the present study reflects the strong interest that Club members have in their Irish Water Spaniels. Their written responses indicated intense concern for the individual animals under their care. Those owners who responded in writing showed an extremely caring dedication to their animals and to the breed. Many wrote extended descriptions or offered follow-up information. We hope that the information presented in this report will be helpful to all owners of Irish Water Spaniels, to those who choose to breed and to those who merely want companionship or the pride which comes from bringing a beautiful dog to its maximum potential.