

## **Introduction**

The Old English Sheepdog Club of America Health Committee contacted us about conducting a general health survey for Old English Sheepdogs (OES). The purpose was to determine the frequency of specific health problems affecting the breed, and whether there was a relationship between sex and health problems.

## **Materials and Methods**

The questionnaire was designed to survey common health problems in Old English Sheepdogs. Respondents were asked to complete the survey for any dogs they currently owned, co-owned, or who had died while living with them since 1997. The survey was divided into three main sections. The first section asked for general information on the number of OES currently owned, the number of years the respondent owned OES, the number of males and female OES that they did or do own, and what activities owners were involved in with their OES. The second section asked for information on all OES owned or co-owned since 1997 including current age or age at time of death, sex, and cause of death if applicable. The last section addressed specific categories of health problems in OES. Respondents were to indicate how many of their OES had a particular disease as well as the sex of that dog and sometimes the age of onset of the disease. At the end of the survey there was a question that asked the owners for the health problems they are most concerned with, either ones that were listed in the survey or other ones that we had not mentioned.

The Old English Sheepdog Club of America provided the names and addresses of OES owners from its club membership lists, and people requesting surveys. An initial mailing of the surveys was sent off in February 2003. Postcard reminders were mailed

off in June of 2003 to all participants who had not responded. Then in September of 2003 another copy of the health survey was sent out with an updated mailing list and then a follow-up copy was mailed in February 2004. Copies of cover letters, the questionnaire, and a postcard reminder as well as a graph of response across time are all included in Appendix 1.

A chi-square test was used to analyze the data from this health survey. A p-value less than or equal to 0.05 was considered statistically significant and indicated a difference between males and females and the frequency of these health problems.

## Results

Questionnaires were sent to 572 Old English Sheepdog owners from the United States, 39 were sent to Canada, and 44 were sent internationally. There were 435 surveys returned and included in the data reported. 4 surveys were returned and undeliverable because of bad addresses and 11 surveys were returned saying that respondents no longer owned OES. These 15 surveys were excluded from the report and subtracted from the total of 655 surveys mailed. The response rate was then calculated as 435 out of 640, making the response rate 68%. This information is included in Table 1.

Table 1: General survey information for the OES in this study

| <b>Survey Information on Old English Sheepdogs</b>              |            |
|---|------------|
| <b>Variable</b>   | <b>No.</b> |
| Total number of surveys mailed out                              | 655        |
| Total number of respondents                                     | 435        |
| Total number of returned surveys due to bad addresses           | 4          |
| Non-Old English Sheepdog owners/not able to complete the survey | 11         |
| Overall response rate for Old English Sheepdogs                 | 68%        |
|   |            |
| Total number of dogs involved in the survey                     | 1658       |
| Females owned   | 975        |
| Males owned   | 683        |
| Total number of dogs currently owned by respondents             | 1630       |
| Total number of deceased dogs in survey                         | 521        |

|                  |     |
|------------------|-----|
| Females deceased | 298 |
| Males deceased   | 223 |

The average number of Old English Sheepdogs currently owned by the respondents was 4 and the median number owned was 3. The number of Old English Sheepdogs currently owned ranged from 0 to 40. The 1,658 Old English Sheepdog sample size of this study was comprised of the 1,137 currently owned dogs and the 521 deceased dogs. Table 2 shows the information for the OES include in this study.

Table 2: General Information on Old English Sheepdogs included in this survey

| <b>General Information on Old English Sheepdogs from the survey</b> |            |             |               |                           |
|---|------------|-------------|---------------|---------------------------|
| <b>Variable</b>   | <b>No.</b> | <b>Mean</b> | <b>Median</b> | <b>(Minimum, Maximum)</b> |
| Years of owning Old English Sheepdogs                               | 9276       | 22.8        | 24.0          | (1,63)                    |
| Old English Sheepdogs owned   | 1658       | 3.9         | 3.0           | (0,40)                    |
| Female Old English Sheepdogs currently owned                        | 967        | 2.4         | 2.0           | (0,25)                    |
| Age of females currently owned (yrs)                                | 3960       | 5.8         | 6.0           | (1,17)                    |
| Male Old English Sheepdogs currently owned                          | 663        | 1.6         | 1.0           | (0,15)                    |
| Age of males currently owned (yrs)                                  | 2581       | 5.5         | 5.0           | (1,15)                    |
| Deceased Old English Sheepdogs                                      | 521        |             |               |                           |
| Lifespan of deceased males (yrs)                                    | 2224       | 10.4        | 11.0          | (1,19)                    |
| Lifespan of deceased females (yrs)                                  | 3021       | 10.7        | 12.0          | (1,17)                    |

For those OES that were deceased, respondents were asked to give the cause of deaths. Table 3 lists the most common causes of deaths in OES included in this health survey. Out of the 521 dogs reported deceased, 5 owners reported an unknown cause of death, and 516 reported a cause of death. The others listed in this table included causes of death listed by only one respondent.

Table 3: Common causes of death in the OES of this study

| <b>Common Causes of Death In Old English Sheepdogs</b> |                         |                |              |
|--|-------------------------|----------------|--------------|
| <b>Cause</b>   | <b>No. of Instances</b> |                |              |
|  | <b>Males</b>            | <b>Females</b> | <b>Total</b> |
| Cancer   | 36                      | 56             | 92           |

|                   |    |    |    |
|-------------------|----|----|----|
| Old Age           | 26 | 53 | 79 |
| Euthanized        | 28 | 17 | 45 |
| Heart Problems    | 14 | 23 | 37 |
| Arthritis         | 14 | 21 | 35 |
| Skeletal Problems | 11 | 13 | 24 |
| Tumor             | 9  | 12 | 21 |
| Kidney Problems   | 8  | 10 | 18 |
| Liver Problems    | 5  | 8  | 13 |
| Lymphoma          | 8  | 3  | 11 |
| Stroke            | 5  | 2  | 7  |
| Accident          | 1  | 4  | 5  |
| Blood Clots       | 1  | 4  | 5  |
| Hemorrhage        | 1  | 4  | 5  |
| Nervous Problems  | 4  | 1  | 5  |
| Osteosarcoma      | 2  | 3  | 5  |
| Cerebellar Ataxia | 0  | 4  | 4  |
| Lymphosarcoma     | 4  | 0  | 4  |
| Seizures          | 1  | 3  | 4  |
| Poisoned          | 2  | 1  | 3  |
| Stomach Problems  | 1  | 2  | 3  |
| Cushing's         | 1  | 1  | 2  |
| Diabetes          | 0  | 2  | 2  |
| Dog Fight         | 0  | 2  | 2  |
| Lupus             | 1  | 1  | 2  |
| Torsion           | 0  | 2  | 2  |
| Unknown           | 6  | 2  | 8  |
| Others            | 36 | 42 | 78 |

Respondents were also asked about the types of activities they participated in with their Old English Sheepdogs. Respondents could choose more than one of these activities.

Table 4 shows their responses.

Table 4: Old English Sheepdogs owner activities in this study

| <b>Old English Sheepdogs Owner Activities</b> |     |
|---|-----|
| Pet/companion                                 | 332 |
| Conformation                                  | 272 |
| Breeding                                      | 161 |
| Obedience                                     | 120 |
| Agility                                       | 60  |
| Herding                                       | 48  |
| Therapy Dog                                   | 37  |
| Other activity                                | 26  |

Table 5 shows the health problems listed in the survey and the number of male and female Old English Sheepdogs along with the percentage of total OES with the problems.

Table 5: Descriptive Statistics for Health Problems in the Old English Sheepdog survey

| <b>Old English Sheepdogs General Health Survey</b> |                     |                       |                       |                         |                  |                |
|--|---------------------|-----------------------|-----------------------|-------------------------|------------------|----------------|
| <b>Health Problems</b>                             | <b>No. of Males</b> | <b>% of 683 Males</b> | <b>No. of Females</b> | <b>% of 975 Females</b> | <b>Total No.</b> | <b>Total %</b> |
| <b>Immune System Disease</b>                       |                     |                       |                       |                         |                  |                |
| Anemia   | 6                   | 0.88%                 | 8                     | 0.82%                   | 14               | 0.84%          |
| Discoid Lupus Erythematosus                        | 0                   | 0.00%                 | 1                     | 0.10%                   | 1                | 0.06%          |
| Hemophilia D                                       | 0                   | 0.00%                 | 0                     | 0.00%                   | 0                | 0.00%          |
| Autoimmune Hemolytic Anemia                        | 6                   | 0.88%                 | 14                    | 1.44%                   | 20               | 1.21%          |
| Lymphedema   | 2                   | 0.29%                 | 0                     | 0.00%                   | 2                | 0.12%          |
| Idiopathic Thrombocytopenic Purpura                | 2                   | 0.29%                 | 3                     | 0.31%                   | 5                | 0.30%          |
| Systemic Lupus Erythematosus                       | 0                   | 0.00%                 | 0                     | 0.00%                   | 0                | 0.00%          |
| Other  | 8                   | 1.17%                 | 6                     | 0.62%                   | 14               | 0.84%          |
| <b>Hearing and Balance</b>                         |                     |                       |                       |                         |                  |                |
| Deaf (both ears)                                   | 11                  | 1.61%                 | 19                    | 1.95%                   | 30               | 1.81%          |
| Deaf (in one ear)                                  | 3                   | 0.44%                 | 9                     | 0.92%                   | 12               | 0.72%          |
| Idiopathic Canine Vestibular Disease               | 1                   | 0.15%                 | 3                     | 0.31%                   | 4                | 0.24%          |
| Chronic Ear Infections                             | 34                  | 4.98%                 | 46                    | 4.72%                   | 80               | 4.83%          |
| Other  | 3                   | 0.44%                 | 4                     | 0.41%                   | 7                | 0.42%          |
| <b>Eyes</b>  |                     |                       |                       |                         |                  |                |
| Juvenile Cataracts                                 | 10                  | 1.46%                 | 20                    | 2.05%                   | 30               | 1.81%          |
| Entropion  | 13                  | 1.90%                 | 9                     | 0.92%                   | 22               | 1.33%          |
| Ectropion  | 0                   | 0.00%                 | 6                     | 0.62%                   | 6                | 0.36%          |
| Progressive Retinal Atrophy                        | 1                   | 0.15%                 | 1                     | 0.10%                   | 2                | 0.12%          |
| Primary Retinal Detachment                         | 3                   | 0.44%                 | 4                     | 0.41%                   | 7                | 0.42%          |
| Retinal Dysplasia (abnormal folds)                 | 0                   | 0.00%                 | 1                     | 0.10%                   | 1                | 0.06%          |
| Retinal Dysplasia (geographic detachment)          | 0                   | 0.00%                 | 1                     | 0.10%                   | 1                | 0.06%          |
| Microcornea  | 0                   | 0.00%                 | 0                     | 0.00%                   | 0                | 0.00%          |
| Microphthalmia                                     | 0                   | 0.00%                 | 0                     | 0.00%                   | 0                | 0.00%          |
| Persistent Pupillary Membranes                     | 6                   | 0.88%                 | 10                    | 1.03%                   | 16               | 0.97%          |
| Uveodermatologic Syndrome                          | 1                   | 0.15%                 | 1                     | 0.10%                   | 2                | 0.12%          |
| Glaucoma   | 4                   | 0.59%                 | 4                     | 0.41%                   | 8                | 0.48%          |
| Distichiasis                                       | 1                   | 0.15%                 | 5                     | 0.51%                   | 6                | 0.36%          |
| Other  | 5                   | 0.73%                 | 11                    | 1.13%                   | 16               | 0.97%          |
| <b>Hormones</b>                                    |                     |                       |                       |                         |                  |                |
| Cushing's Disease                                  | 4                   | 0.59%                 | 9                     | 0.92%                   | 13               | 0.78%          |
| Addison's Disease                                  | 2                   | 0.29%                 | 1                     | 0.10%                   | 3                | 0.18%          |
| Hypothyroidism                                     | 56                  | 8.20%                 | 74                    | 7.59%                   | 130              | 7.84%          |
| Other  | 2                   | 0.29%                 | 3                     | 0.31%                   | 5                | 0.30%          |
| <b>Gastrointestinal</b>                            |                     |                       |                       |                         |                  |                |
| Idiopathic Canine Colitis                          | 10                  | 1.46%                 | 9                     | 0.92%                   | 19               | 1.15%          |
| Bloat and Gastric Torsion                          | 10                  | 1.46%                 | 22                    | 2.26%                   | 32               | 1.93%          |

|                                |    |       |     |        |     |       |
|--------------------------------|----|-------|-----|--------|-----|-------|
| Megaesophagus                  | 1  | 0.15% | 5   | 0.51%  | 6   | 0.36% |
| Other                          | 11 | 1.61% | 12  | 1.23%  | 23  | 1.39% |
| <b>Heart</b>                   |    |       |     |        |     |       |
| Subaortic Stenosis             | 1  | 0.15% | 2   | 0.21%  | 3   | 0.18% |
| Cardiomyopathy                 | 3  | 0.44% | 3   | 0.31%  | 6   | 0.36% |
| Patent Ductus Arteriosus       | 0  | 0.00% | 0   | 0.00%  | 0   | 0.00% |
| Tricuspid Valve Dysplasia      | 3  | 0.44% | 3   | 0.31%  | 6   | 0.36% |
| Atrial Septal Defect           | 1  | 0.15% | 0   | 0.00%  | 1   | 0.06% |
| Mitral Valve Defect            | 1  | 0.15% | 4   | 0.41%  | 5   | 0.30% |
| Other Murmurs                  | 12 | 1.76% | 13  | 1.33%  | 25  | 1.51% |
| <b>Kidneys and Bladder</b>     |    |       |     |        |     |       |
| Cystitis                       | 11 | 1.61% | 55  | 5.64%  | 66  | 3.98% |
| Renal Dysplasia                | 2  | 0.29% | 0   | 0.00%  | 2   | 0.12% |
| Incontinence                   | 17 | 2.49% | 131 | 13.44% | 148 | 8.93% |
| Other                          | 8  | 1.17% | 10  | 1.03%  | 18  | 1.09% |
| <b>Liver and Pancreas</b>      |    |       |     |        |     |       |
| Diabetes                       | 1  | 0.15% | 4   | 0.41%  | 5   | 0.30% |
| Pancreatic Hypoplasia          | 3  | 0.44% | 1   | 0.10%  | 4   | 0.24% |
| Portosystemic Shunt            | 2  | 0.29% | 0   | 0.00%  | 2   | 0.12% |
| Other                          | 7  | 1.02% | 11  | 1.13%  | 18  | 1.09% |
| <b>Muscle</b>                  |    |       |     |        |     |       |
| Exertional Myopathy            | 0  | 0.00% | 0   | 0.00%  | 0   | 0.00% |
| Mitochondrial Myopathy         | 0  | 0.00% | 0   | 0.00%  | 0   | 0.00% |
| Muscle Cramping                | 2  | 0.29% | 1   | 0.10%  | 3   | 0.18% |
| Other                          | 1  | 0.15% | 0   | 0.00%  | 1   | 0.06% |
| <b>Nervous System</b>          |    |       |     |        |     |       |
| Cerebellar Ataxia              | 0  | 0.00% | 1   | 0.10%  | 1   | 0.06% |
| Epilepsy                       | 4  | 0.59% | 0   | 0.00%  | 4   | 0.24% |
| Other                          | 1  | 0.15% | 0   | 0.00%  | 1   | 0.06% |
| <b>Skin</b>                    |    |       |     |        |     |       |
| Chronic Hot Spots              | 7  | 1.02% | 6   | 0.62%  | 13  | 0.78% |
| Seborrhea                      | 1  | 0.15% | 0   | 0.00%  | 1   | 0.06% |
| Demodectic Mange               | 2  | 0.29% | 1   | 0.10%  | 3   | 0.18% |
| Interdigital Cysts             | 1  | 0.15% | 5   | 0.51%  | 6   | 0.36% |
| Sebaceous Adenitis             | 4  | 0.59% | 5   | 0.51%  | 9   | 0.54% |
| Other                          | 3  | 0.44% | 6   | 0.62%  | 9   | 0.54% |
| <b>Skeletal</b>                |    |       |     |        |     |       |
| Hypertrophic Osteodystrophy    | 0  | 0.00% | 1   | 0.10%  | 1   | 0.06% |
| Osteochondritis Desiccans      | 4  | 0.59% | 2   | 0.21%  | 6   | 0.36% |
| Nonfusion of Anconeus          | 0  | 0.00% | 0   | 0.00%  | 0   | 0.00% |
| Arthritis                      | 35 | 5.12% | 40  | 4.10%  | 75  | 4.52% |
| Hip Dysplasia                  | 23 | 3.37% | 13  | 1.33%  | 36  | 2.17% |
| Cervical Vertebral Instability | 0  | 0.00% | 1   | 0.10%  | 1   | 0.06% |
| Spondylosis                    | 4  | 0.59% | 6   | 0.62%  | 10  | 0.60% |
| Premature Closure of the Ulna  | 0  | 0.00% | 0   | 0.00%  | 0   | 0.00% |
| Elbow Dysplasia                | 0  | 0.00% | 3   | 0.31%  | 3   | 0.18% |
| Panosteitis                    | 3  | 0.44% | 1   | 0.10%  | 4   | 0.24% |
| Other                          | 4  | 0.59% | 1   | 0.10%  | 5   | 0.30% |

| <b>Respiratory</b>         |    |       |    |       |    |       |
|----------------------------|----|-------|----|-------|----|-------|
| Primary Ciliary Dyskinesia | 0  | 0.00% | 0  | 0.00% | 0  | 0.00% |
| Other                      | 1  | 0.15% | 0  | 0.00% | 1  | 0.06% |
| <b>Tumors</b>              |    |       |    |       |    |       |
| Squamous Cell Carcinoma    | 1  | 0.15% | 0  | 0.00% | 1  | 0.06% |
| Hemangiosarcoma            | 2  | 0.29% | 0  | 0.00% | 2  | 0.12% |
| Osteosarcoma               | 6  | 0.88% | 2  | 0.21% | 8  | 0.48% |
| Nasal Tumor                | 4  | 0.59% | 2  | 0.21% | 6  | 0.36% |
| Lymphoma                   | 3  | 0.44% | 2  | 0.21% | 5  | 0.30% |
| Mammary Tumors             | 0  | 0.00% | 18 | 1.85% | 18 | 1.09% |
| Mouth Tumors               | 3  | 0.44% | 3  | 0.31% | 6  | 0.36% |
| Perianal Tumors            | 0  | 0.00% | 2  | 0.21% | 2  | 0.12% |
| Fatty Tumors               | 22 | 3.22% | 28 | 2.87% | 50 | 3.02% |
| Other                      | 7  | 1.02% | 8  | 0.82% | 15 | 0.90% |
| <b>Temperament</b>         |    |       |    |       |    |       |
| Aggressive (to dogs)       | 9  | 1.32% | 11 | 1.13% | 20 | 1.21% |
| Aggressive (to people)     | 4  | 0.59% | 4  | 0.41% | 8  | 0.48% |
| Fearful                    | 8  | 1.17% | 12 | 1.23% | 20 | 1.21% |
| Sound Sensitive            | 14 | 2.05% | 16 | 1.64% | 30 | 1.81% |
| Other                      | 2  | 0.29% | 1  | 0.10% | 3  | 0.18% |
| <b>Drug Reactions</b>      |    |       |    |       |    |       |
| Anesthesia                 | 0  | 0.00% | 3  | 0.31% | 3  | 0.18% |
| Drug Reactions             | 1  | 0.15% | 1  | 0.10% | 2  | 0.12% |
| Vaccine Reaction           | 5  | 0.73% | 1  | 0.10% | 6  | 0.36% |
| <b>Allergies</b>           |    |       |    |       |    |       |
| Atopy                      | 1  | 0.15% | 3  | 0.31% | 4  | 0.24% |
| Dietary                    | 4  | 0.59% | 2  | 0.21% | 6  | 0.36% |
| Flea Allergy               | 4  | 0.59% | 10 | 1.03% | 14 | 0.84% |
| Grass/Outdoors             | 5  | 0.73% | 5  | 0.51% | 10 | 0.60% |
| Other                      | 1  | 0.15% | 0  | 0.00% | 1  | 0.06% |

The most common health problems were incontinence, hypothyroidism, chronic ear infections, arthritis, cystitis, fatty tumors, hip dysplasia, bloat and gastric torsion, deaf (in both ears), juvenile cataracts, and sound sensitivity.

In order to determine whether there were any associations between sex and occurrence of a particular health problem, a chi-square test was used. A 1.5% difference was chosen as a level that may be of clinical importance as a difference of about 16 dogs would be involved. These health problems included hip dysplasia, incontinence, mammary tumors, cystitis, and arthritis. A p-value of 0.05 or less was considered

significant in determining an association. All of the tested values showed a significant association between sex and health problems within this breed.

Table 6: Information on the association between sex and occurrence of health problems

| <b>Association Between Sex and Health Problems in Old English Sheepdogs</b> |                          |                            |                |
|---|--------------------------|----------------------------|----------------|
| <b>Health Problems</b>  | <b>No. with problems</b> | <b>No. without problem</b> | <b>P-Value</b> |
| Hip Dysplasia   |                          |                            | 0.00*          |
| Female  | 23                       | 952                        |                |
| Male  | 13                       | 670                        |                |
| Incontinence  |                          |                            | 0.00*          |
| Female  | 17                       | 958                        |                |
| Male  | 131                      | 552                        |                |
| Cystitis  |                          |                            | 0.00*          |
| Female  | 55                       | 920                        |                |
| Male  | 11                       | 672                        |                |
| Mammary Tumors  |                          |                            | 0.00*          |
| Female  | 18                       | 957                        |                |
| Male  | 0                        | 683                        |                |
| Arthritis   |                          |                            | 0.00*          |
| Female  | 40                       | 935                        |                |
| Male  | 35                       | 648                        |                |

\* Denotes a value less than 0.0001

At the end of each section in the General Health portion of the survey respondents were asked to list “other” problems their dogs have exhibited within the specific categories. This information is listed in Appendix 2 Table 7.

Table 8 contains data about the different ages of onset of certain diseases. Of the top ten health problems the ages of onset for arthritis, dogs that were deaf in both ears and juvenile cataracts were reported. Arthritis median age of onset was 9 years old and the mean age of onset was 8.7 years old. For dogs that were deaf in both ears the median age of onset is 11 and the mean age of onset was 9.5. For juvenile cataracts the median age of onset was 3 and the mean age of onset was 3.7.

Table 8: Ages of Onset of Selected Disease in this Study



| <b>Age of Onset</b>         |             |               |             |             |
|-----------------------------|-------------|---------------|-------------|-------------|
| <b>Health Problem</b>       | <b>Mean</b> | <b>Median</b> | <b>Min.</b> | <b>Max.</b> |
| Deaf in Both Ears           | 9.5         | 11            | 1           | 13          |
| Deaf in One Ear             | 8.0         | 11            | 1           | 12          |
| Juvenile Cataracts          | 3.7         | 3             | 1           | 10          |
| Hypothyroidism              | 5.1         | 5             | 1           | 12          |
| Incontinence                | 8.4         | 9             | 1           | 14          |
| Epilepsy                    | 5.6         | 5             | 1           | 13          |
| Arthritis                   | 8.7         | 9             | 1           | 15          |
| Hypertrophic Osteodystrophy | none        | none          | none        | none        |

Information concerning specific drug reactions, specific vaccine reactions, and specific allergic reactions were also collected by this survey and are detailed in Table 9. The most reported response to anesthetics was drowsiness and inability to wake up, only one respondent reported death due to an anesthetic.

Table 9: Drug Reactions Reported in this Survey

| <b>Drug Reactions</b>        |                     |
|------------------------------|---------------------|
| <b>Anesthesia</b>            |                     |
| <b>Type</b>                  | <b>No. Reported</b> |
| Telazol                      | 2                   |
| Isoflourane                  | 1                   |
| Domitor                      | 1                   |
| <b>Drugs</b>                 |                     |
| Rimydal                      | 4                   |
| Metronidazole                | 2                   |
| Inteceptor (heartworm pills) | 2                   |
| Loperamide                   | 1                   |
| Nitrofuratin                 | 1                   |
| Norvase                      | 1                   |
| Sulfasalazine                | 1                   |
| Ivermectin                   | 2                   |
| Valium                       | 1                   |
| Ketamine                     | 1                   |
| Vieflex                      | 1                   |
| Flagyl                       | 1                   |
| Program Flea                 | 1                   |
| Amoxicillin                  | 1                   |
| <b>Vaccine</b>               |                     |
| Puppy Vaccines               | 2                   |

|                    |   |
|--------------------|---|
| Lymes Disease      | 2 |
| DHLPP              | 3 |
| Rabies             | 3 |
| DALPP-CV           | 2 |
| Bordatella         | 1 |
| Parvo              | 1 |
| DHP                | 1 |
| Deramaxx           | 1 |
| Clavamox           | 1 |
| Acepromazine       | 1 |
| DHLPP-Rabies Combo | 1 |
| <b>Allergies</b>   |   |
| Food               | 2 |
| Bug Bites          | 1 |
| Itchy Ear and Feet | 1 |
| Dust Mites         | 2 |
| Rag Weed           | 2 |
| Unknown            | 5 |
| Chicken            | 1 |
| Wheat              | 3 |
| Woodland Weed      | 1 |
| Soy                | 1 |
| Oats               | 1 |
| Beef               | 1 |
| Hay Fever          | 2 |
| Red Ants           | 1 |
| OTC Topical Cream  | 1 |

Table 10 includes reproduction data for this survey.

| <b>Reproduction Problems in Old English Sheepdogs</b> |                     |                          |
|---|---------------------|--------------------------|
| <b>Health Problem</b>                                 | <b>No. affected</b> | <b>% affected of 975</b> |
| <b>Female</b>   |                     |                          |
| Failure to Conceive                                   | 48                  | 4.92%                    |
| Irregular Heat Cycles                                 | 9                   | 0.92%                    |
| Prolapse  | 0                   | 0.00%                    |
| Uterine Inertia                                       | 7                   | 0.72%                    |
| Other   | 3                   | 0.31%                    |
| <b>Health Problem</b>                                 | <b>No. affected</b> | <b>% affected of 683</b> |
| <b>Males</b>  |                     |                          |
| Sterility (no sperm)                                  | 1                   | 0.15%                    |
| Abnormal Sperm  | 4                   | 0.59%                    |
| Low Libido  | 3                   | 0.44%                    |
| Prostate Problems                                     | 3                   | 0.44%                    |
| Other   | 2                   | 0.29%                    |

| Health Problem                | No. affected | % affected of 580 |
|-------------------------------|--------------|-------------------|
| <b>Puppies</b>                |              |                   |
| Anasarca                      | 0            | 0.00%             |
| Testicles-Failure to Descend  | 37           | 6.38%             |
| Stillborn Puppies             | 54           | 9.31%             |
| Swimmer Puppies               | 6            | 1.03%             |
| Kidney Disease (under 12 wks) | 2            | 0.34%             |
| Pyoderma                      | 2            | 0.34%             |
| Short Tail                    | 1            | 0.17%             |

At the end of the survey responders were asked to specify what health problems they were most concern with, Table 11 contains their responses and the frequency of each response. They were asked to identify both problems mentioned in the survey and other problems that they were concerned with, however they did not mention any problems that weren't included the survey.

Table 11: Respondents Health Concerns

| <b>Common Health Concerns of Respondents in this Survey</b> |                  |
|---|------------------|
| Health Concern  | No. of Responses |
| Hip Dysplasia   | 65               |
| Cerebellar Ataxia   | 41               |
| Cancer  | 36               |
| Autoimmune  | 24               |
| Hypothyroidism  | 21               |
| Arthritis   | 18               |
| Temperament Problems  | 11               |
| Reproduction Problems                                       | 11               |
| Heart Problems  | 10               |
| Eye Problems  | 9                |
| Deafness  | 9                |
| Skeletal Problems   | 8                |
| Bloat   | 7                |
| Allergies   | 7                |
| Cataracts   | 6                |
| Skin Problems   | 6                |
| Overvaccination   | 4                |
| All Problems  | 4                |
| PRA   | 3                |
| Tumors  | 3                |
| Liver Shunts  | 3                |
| Demodectic Mange  | 3                |

|                   |   |
|-------------------|---|
| Gentic Rproblems  | 2 |
| Lymes Disease     | 2 |
| Lymphoma          | 2 |
| Ear Infections    | 2 |
| Inbreeding        | 2 |
| Epilepsy          | 2 |
| Colitis           | 2 |
| Incontinence      | 2 |
| Aging             | 2 |
| Cushing's Disease | 2 |
| Kidney Failure    | 2 |

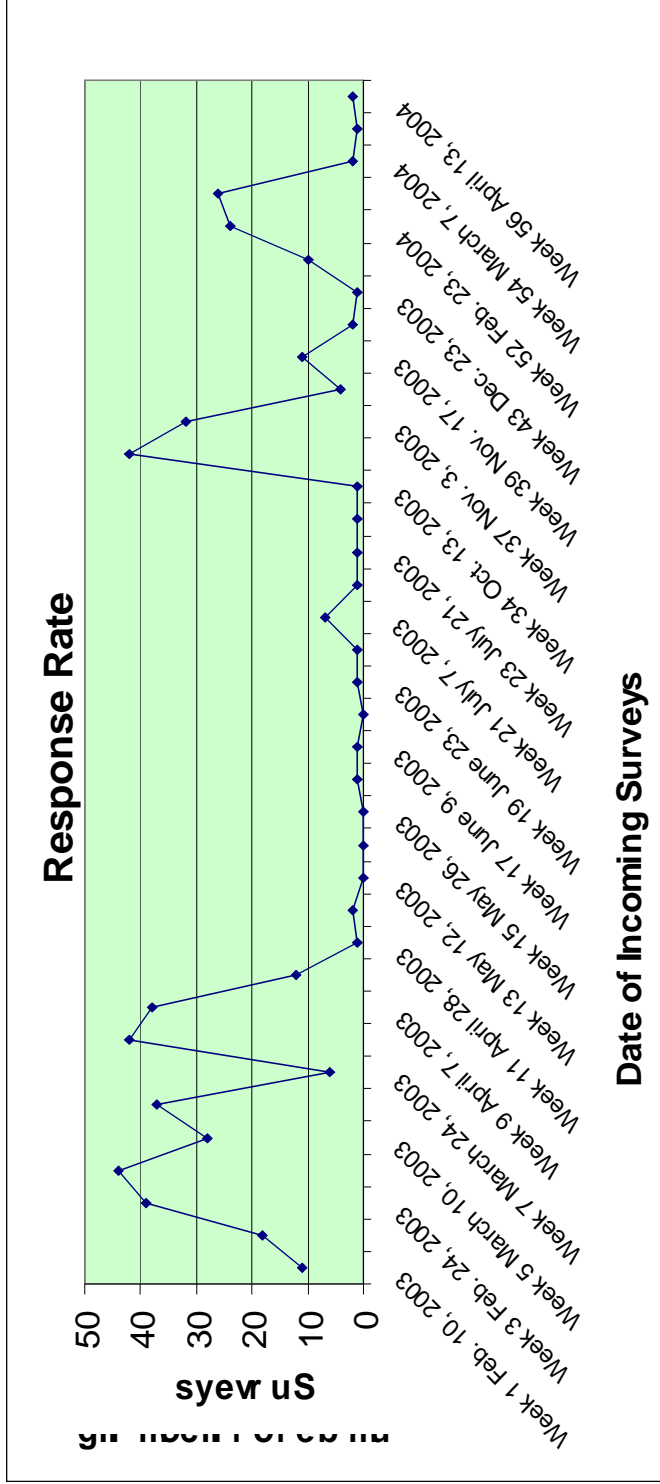
## Discussion

The overall response rate of 67.97% for this survey was moderately high. Of the 435 respondents, 265 of them agreed that they would be willing to provide pedigree information on dogs affected with a particular health problem. This was 60% of all respondents, however about 10% of the 60% remarked that they had acquired their Old English Sheepdogs as rescues and for that reason would be unable to provide an pedigree information; it was not that they did not want to. The most common cause of death was cancer in both male and female Old English Sheepdogs, followed closely by old age, euthanasia, arthritis and heart problems.

The most common activity that owners were involved in with their Old English Sheepdogs was pet/companionship. Other common activities included conformation and breeding, although obedience was a close fourth.

The most common health problems in the male Old English Sheepdog in this study were hypothyroidism, arthritis, chronic ear infections, hip dysplasia, and fatty tumors. The most common health problems in female Old English Sheepdogs of this

study were incontinence, hypothyroidism, cystitis, chronic ear infections, failure to conceive and arthritis.



**Table 7**

| <b>Other Variables with Male and Female Occurences</b> |                 |                   |                     |                   |
|--|-----------------|-------------------|---------------------|-------------------|
|  | <b>No. Male</b> | <b>No. Female</b> | <b>No. Reported</b> | <b>% of Total</b> |
| <b>Bone and Skeletal</b>                               |                 |                   |                     |                   |
| Bone Spurs   | 1               | 1                 | 2                   | 0.12%             |
| Chronic Neck Pain                                      | 1               | 1                 | 2                   | 0.12%             |
| Stiff Knees  | 1               | 1                 | 2                   | 0.12%             |
| Spinal Deterioration                                   | 1               | 0                 | 1                   | 0.06%             |
| Broken Hip   | 0               | 1                 | 1                   | 0.06%             |
| Bilateral Cruciate Ligament Rupture                    | 1               | 0                 | 1                   | 0.06%             |
| Undershot Jaw  | 1               | 0                 | 1                   | 0.06%             |
| Slipped Disk/Back Problems                             | 2               | 0                 | 2                   | 0.12%             |
| <b>Temperament</b>                                     |                 |                   |                     |                   |
| Sensitive to Loud Noises                               | 1               | 2                 | 3                   | 0.18%             |
| Afraid of Fireworks                                    | 0               | 2                 | 2                   | 0.12%             |
| Afraid of Strangers                                    | 0               | 2                 | 2                   | 0.12%             |
| Afraid of Children                                     | 1               | 2                 | 3                   | 0.18%             |
| Unprovoked Attacks                                     | 1               | 0                 | 1                   | 0.06%             |
| Chases Squirrels                                       | 0               | 1                 | 1                   | 0.06%             |
| Growls when is forced to do something                  | 1               | 0                 | 1                   | 0.06%             |
| Afraid of Thunderstorms                                | 4               | 3                 | 7                   | 0.42%             |
| Chases Cars/Trucks                                     | 1               | 0                 | 1                   | 0.06%             |
| Dominance Issues                                       | 0               | 1                 | 1                   | 0.06%             |
| Protective of Owner                                    | 0               | 1                 | 1                   | 0.06%             |
| Overlyfriendly   | 1               | 1                 | 2                   | 0.12%             |
| Shy  | 1               | 1                 | 2                   | 0.12%             |
| Was abused   | 1               | 1                 | 2                   | 0.12%             |
| <b>Kidney/Bladder</b>                                  |                 |                   |                     |                   |
| Urinary Tract Infection                                | 0               | 5                 | 5                   | 0.30%             |
| Lyme Disease   | 1               | 0                 | 1                   | 0.06%             |
| Pyelonephritis   | 0               | 1                 | 1                   | 0.06%             |
| Chronic Bladder Infections                             | 0               | 1                 | 1                   | 0.06%             |
| Kidney Failure   | 1               | 3                 | 3                   | 0.18%             |
| Bladder Stones   | 2               | 0                 | 2                   | 0.12%             |
| Kidney Stones  | 2               | 0                 | 2                   | 0.12%             |
| <b>Liver/Pancreas</b>                                  |                 |                   |                     |                   |
| Liver Cancer   | 2               | 1                 | 3                   | 0.18%             |
| Pancreatic Cancer                                      | 1               | 2                 | 3                   | 0.18%             |
| Benign Growth on Pancreas                              | 0               | 1                 | 1                   | 0.06%             |
| Small Liver  | 0               | 1                 | 1                   | 0.06%             |
| Enlarged Liver   | 1               | 0                 | 1                   | 0.06%             |
| High Creatine Levels                                   | 0               | 1                 | 1                   | 0.06%             |
| Liver Shunts   | 0               | 2                 | 2                   | 0.12%             |
| Liver Disease  | 2               | 2                 | 4                   | 0.24%             |
| Hemorrhagic Pancreatitis                               | 1               | 0                 | 1                   | 0.06%             |
| <b>Muscle</b>  |                 |                   |                     |                   |
| Weakness   | 0               | 1                 | 1                   | 0.06%             |

|   |   |    |    |       |
|---|---|----|----|-------|
| Spinal Myelopathy                       | 1 | 1  | 2  | 0.12% |
| Loss of Muscle Tone                     | 4 | 1  | 5  | 0.30% |
| Degenerative Myelopathy                 | 2 | 1  | 3  | 0.18% |
| <b>Skin</b>                             |   |    |    |       |
| Itching                                 | 0 | 2  | 2  | 0.12% |
| Skin Infections                         | 2 | 2  | 4  | 0.24% |
| Staph Collarettes                       | 0 | 1  | 1  | 0.06% |
| Sebaceous Cysts                         | 7 | 12 | 19 | 1.15% |
| Pressure Callusous on Elbows/Hips       | 0 | 1  | 1  | 0.06% |
| Floor Burns                             | 2 | 0  | 2  | 0.12% |
| Sarcoptic Mange                         | 0 | 1  | 1  | 0.06% |
| Infected Pores and Hair Follicles       | 1 | 0  | 1  | 0.06% |
| Scabies                                 | 1 | 1  | 2  | 0.12% |
| Bilateral Alopecia                      | 0 | 2  | 2  | 0.12% |
| <b>Gastrointestinal</b>                 |   |    |    |       |
| Lypasitic Plasmastic Colitis            | 1 | 0  | 1  | 0.06% |
| Sensitive Stomach                       | 1 | 2  | 3  | 0.18% |
| Bacterial Overgrowth in Small Intestine | 0 | 1  | 1  | 0.06% |
| Chronic Diarrhea                        | 3 | 1  | 4  | 0.24% |
| Inflammatory Bowel Disease              | 1 | 4  | 5  | 0.30% |
| Digestive Enzymes Insufficiencies       | 1 | 1  | 2  | 0.12% |
| Stomach Cancer                          | 0 | 1  | 1  | 0.06% |
| Megacolon                               | 1 | 0  | 1  | 0.06% |
| Upset GI when stressed                  | 1 | 0  | 1  | 0.06% |
| Loose Bowels                            | 2 | 0  | 2  | 0.12% |
| Anal Cancer                             | 0 | 2  | 2  | 0.12% |
| <b>Heart</b>                            |   |    |    |       |
| Slight Murmurs                          | 1 | 4  | 5  | 0.30% |
| Aortic Stenosis                         | 1 | 0  | 1  | 0.06% |
| Arrhythmia                              | 1 | 0  | 1  | 0.06% |
| Defective Valves                        | 2 | 1  | 3  | 0.18% |
| Leak in Mitral and Tricuspid Valves     | 0 | 1  | 1  | 0.06% |
| Slight Thickness of Aortic Valve        | 1 | 1  | 2  | 0.12% |
| Enlarged Heart                          | 0 | 1  | 1  | 0.06% |
| <b>Female Reproduction</b>              |   |    |    |       |
| Cystic Ovaries                          | 0 | 2  | 2  | 0.12% |
| Infected in whelp                       | 0 | 1  | 1  | 0.06% |
| False Pregnancies                       | 0 | 1  | 1  | 0.06% |
| Endometriosis                           | 0 | 1  | 1  | 0.06% |
| No Uterus                               | 0 | 1  | 1  | 0.06% |
| Uterus Opening was insufficient         | 0 | 1  | 1  | 0.06% |
| Mistimed Cycles                         | 0 | 1  | 1  | 0.06% |
| All Fetuses Died                        | 0 | 1  | 1  | 0.06% |
| Placenta Eruptus                        | 0 | 1  | 1  | 0.06% |
| Vaginal Infections                      | 0 | 1  | 1  | 0.06% |
| Vaginal Striction                       | 0 | 1  | 1  | 0.06% |
| Twisted Uterus                          | 0 | 1  | 1  | 0.06% |
| Vaginal Discharge                       | 0 | 1  | 1  | 0.06% |



|                                    |   |   |   |       |
|------------------------------------|---|---|---|-------|
| Open Pyometra                      | 0 | 9 | 9 | 0.54% |
| Uterus refused to contract         | 0 | 1 | 1 | 0.06% |
| Uterine Infections                 | 0 | 3 | 3 | 0.18% |
| <b>Male Reproduction</b>           |   |   |   |       |
| Hyperplasia of Prostate            | 1 | 0 | 1 | 0.06% |
| Enlarged Prostate                  | 6 | 0 | 6 | 0.36% |
| Excess Sperm Production            | 1 | 0 | 1 | 0.06% |
| Impacted Sperm                     | 1 | 0 | 1 | 0.06% |
| Prostatis                          | 1 | 0 | 1 | 0.06% |
| Prostate Cancer                    | 1 | 0 | 1 | 0.06% |
| Chronic Infections of the Prostate | 2 | 0 | 2 | 0.12% |
| Hard Testicles                     | 1 | 0 | 1 | 0.06% |
| Low Sperm Motility                 | 1 | 0 | 1 | 0.06% |
| <b>Tumors</b>                      |   |   |   |       |
| Lung Tumors                        | 2 | 0 | 2 | 0.12% |
| Testicular Tumors                  | 2 | 0 | 2 | 0.12% |
| Brain Tumors                       | 0 | 3 | 3 | 0.18% |
| Pituitary Gland Tumor              | 0 | 1 | 1 | 0.06% |
| Ear Flap Tumor                     | 0 | 1 | 1 | 0.06% |
| Follicular Cysts                   | 1 | 0 | 1 | 0.06% |
| Toe Tumors                         | 0 | 2 | 2 | 0.12% |
| Skin Tumors                        | 1 | 1 | 2 | 0.12% |
| Chest Tumors                       | 0 | 1 | 1 | 0.06% |
| Fibrosarcoma                       | 1 | 0 | 1 | 0.06% |
| Urethral Tumor                     | 0 | 1 | 1 | 0.06% |
| Front Leg Tumor                    | 0 | 1 | 1 | 0.06% |
| Spleen Tumor                       | 1 | 0 | 1 | 0.06% |
| Eyelid Growth                      | 1 | 0 | 1 | 0.06% |
| Bleeding Tumor                     | 0 | 1 | 1 | 0.06% |
| Pheochromocytoma of the Tonsils    | 1 | 0 | 1 | 0.06% |
| Small Muscle Cancer                | 1 | 0 | 1 | 0.06% |
| Cartilage Cancer                   | 0 | 1 | 1 | 0.06% |
| Lymphosarcoma                      | 0 | 1 | 1 | 0.06% |
| Adenocarcinoma                     | 1 | 0 | 1 | 0.06% |
| Thyroid Gland Carcinoma            | 0 | 1 | 1 | 0.06% |
| <b>Eyes</b>                        |   |   |   |       |
| Old Age Cataracts                  | 0 | 1 | 1 | 0.06% |
| Old Age Blindness                  | 0 | 1 | 1 | 0.06% |
| Blind in One Eye                   | 1 | 0 | 1 | 0.06% |
| Discharge from Eye                 | 0 | 1 | 1 | 0.06% |
| Retinal Problems                   | 0 | 1 | 1 | 0.06% |
| Strabismus                         | 0 | 1 | 1 | 0.06% |
| Oversized Eyeball                  | 1 | 0 | 1 | 0.06% |
| Small Optic Nerve                  | 0 | 1 | 1 | 0.06% |
| Cloudy Vision                      | 0 | 1 | 1 | 0.06% |
| Recurrent Tear Duct Blockage       | 0 | 2 | 2 | 0.12% |
| Third Eyelid                       | 0 | 1 | 1 | 0.06% |
| Vitreous Degeneration              | 1 | 0 | 1 | 0.06% |

| <b>Hearing</b>                 |   |   |   |       |
|--------------------------------|---|---|---|-------|
| Pseudona                       | 1 | 0 | 1 | 0.06% |
| Otitis Media                   | 1 | 0 | 1 | 0.06% |
| <b>Immune</b>                  |   |   |   |       |
| Glomerulonephropathy           | 1 | 0 | 1 | 0.06% |
| Colitis                        | 1 | 0 | 1 | 0.06% |
| Cataracts                      | 0 | 1 | 1 | 0.06% |
| Borderline ITP                 | 0 | 1 | 1 | 0.06% |
| Lymphnode Cancer               | 0 | 1 | 1 | 0.06% |
| Elevated Liver Enzymes         | 0 | 1 | 1 | 0.06% |
| <b>Hormone</b>                 |   |   |   |       |
| Aggressive                     | 1 | 0 | 1 | 0.06% |
| Low Thyroid                    | 1 | 0 | 1 | 0.06% |
| Thyroid Cancer                 | 0 | 1 | 1 | 0.06% |
| Thyroid Problems               | 0 | 1 | 1 | 0.06% |
| Thyroiditis                    | 0 | 1 | 1 | 0.06% |
| <b>Nervous</b>                 |   |   |   |       |
| Head Tumors                    | 1 | 0 | 1 | 0.06% |
| Encephalitis                   | 0 | 1 | 1 | 0.06% |
| Walking in Circles, Stared Off | 2 | 0 | 2 | 0.12% |
| Seizures                       | 0 | 1 | 1 | 0.06% |
| Laryngeal Nerve Paralysis      | 1 | 0 | 1 | 0.06% |
| <b>Respiratory</b>             |   |   |   |       |
| Lung Cancer                    | 1 | 1 | 2 | 0.12% |
| Chronic Lung Disease           | 0 | 1 | 1 | 0.06% |
| Bronchitis                     | 0 | 2 | 2 | 0.12% |
| Asthma                         | 0 | 1 | 1 | 0.06% |
| Panted constantly              | 2 | 0 | 2 | 0.12% |
| Paralysis of Larynx            | 1 | 0 | 1 | 0.06% |