

Manchester Terrier Health Survey

This summary was prepared by the AMTC & CMTC Health Committees.

During the summer of 2002, the Canadian and American Manchester Terrier Clubs administered a comprehensive health survey. The survey looked to establish a baseline incidence of known canine diseases and conditions. As a result it is expected that the survey will be administered at timely intervals in order to offer comparative data and allow breed fanciers to track the progression and frequency of conditions affecting the breed.

In addition to basic health-related information the survey also obtained demographic information, however the anonymity of respondents was carefully guarded.

Background:

The Health Survey was developed initially by the Canadian Manchester Terrier Club and was brought to the attention of the AMTC Health Committee as a possible joint project in January 2001. The original template for the project was derived from a successful survey administered by the Kerry Blue Terrier Club of America. Health Committee representatives from both club's worked to further refine the questions and procedures to more closely match the potential needs of Manchester Terrier fanciers. To this end the committees incorporated input from board members of both clubs, staticians and survey designers, as well as health professionals.

Administration of Survey

A hard copy of the survey was mailed to all members of the Canadian Manchester Terrier Club and of the American Manchester Terrier Club. Additionally, a copy of the survey was made available to other interested parties via the CMTC and AMTC web sites. A reminder was sent to all members to encourage completion of the survey and the closing survey date was extended by two weeks to accommodate late arrivals. Approximately 243 surveys were distributed (United States: 197; Canada: 26; Internet: 20).

Response

86 surveys were completed from the total pool of 243 surveys distributed (35.4%).

General Information

70% of health survey respondents define themselves as Manchester Terrier breeders and 95% as owners. Additionally, 80% of respondents are involved with Conformation, 37% in Obedience, and 23.3% with Agility. 25.6% of respondents consider themselves active in MT Rescue. The majority (32.6%) of respondents have been involved with the breed for over 15 years with the remaining respondents evenly spread over the remaining timeframes (1-5 years: 25.6%; 6-10 years: 27.9%; 11-15 years: 14%). While the maturity of the respondents is evident it should be noted that it is unclear how each individual interprets the phrase 'in the breed.'

When asked to give the primary cause of death of the six most recently deceased Manchester Terriers owned, respondents provided a total of 92 different reasons. Of the total, 24 appear to have been due to traumatic injury while 68 were due to disease. Deaths in the period 1960-1989 were caused by, in descending order, old age, car accident, attacks by animal and seizures. Deaths in the current era (1990-present) were caused by old age, cancer, fire, kidney failure, attack by animal, heart failure, unknown, cardiomyopathy, car accident and premature birth. Several other individual responses were also cited.

When examining average age of death, it was apparent that comparing the age of an animal dying due to trauma versus a newborn puppy or an older dog would be statistically invalid. Age ranges for dogs dying from non-traumatic injuries varied from newly born to 17 years of age. The average age of dogs dying

from old age in the period 1960-1989 was 17 years, while the same statistic for 1990-present was 14.5 years. It is also interesting to note that the average age of dogs dying of cancer was 12.6 years.

Respondents were also asked to identify **in their opinion** the three most prevalent diseases or genetic disorders in the breed in order of importance. During the timeframe 1960-1989 respondents identified von Willebrand's Disease, Legg-Calve-Perthes Disease and Cardiomyopathy as the three most prevalent conditions. For the timeframe covering 1990 to the present the conditions identified were, in descending order: von Willebrand's Disease, Cardiomyopathy, Legg-Calve-Perthes Disease. Several other conditions were also mentioned with some frequency including Epilepsy, Thyroid Conditions and Cancer.

Breeder Responses

Data on Manchester Terrier reproduction was gathered in two sections on the health survey. Information from the first, dealing mainly with general analysis of birth trends, is presented here. It should be noted that the following figures are based only on responses from individuals who have produced one litter or more. Information on more specific problem areas can be found on page five under Reproduction.

18 respondents produced litters from 1960-1989 with an average of 5.28 litters per breeder during that timeframe. The largest litter produced during this period consisted of 11 total puppies; the largest live litter being 10. The smallest litter reported consisted of one puppy and breeders encountered an average of .6 unsuccessful breedings. Natural breedings were utilized with the most consistency.

From 1990 to the present 54 respondents produced litters of Manchester Terriers, averaging approximately 6.9 litters each over this time frame. While it would appear from these figures that the number of litters produced is increasing it should be noted that the number of respondents in the earlier timeframe is small in comparison to the actual number of Manchester breeders during this period. The largest litter produced in this later period consisted of 10 total puppies; the largest live litter being 9. The smallest litter reported consisted of one puppy and breeders encountered an average of .98 unsuccessful breedings. Natural breeding continues to be the most popular breeding method. Not surprisingly the number of litters born via fresh or frozen semen increased slightly, though responses indicate these are not commonly employed. No litters were produced using chilled semen.

*The survey was unable to obtain information on the average number of live births, deaths and stillborn as several individuals failed to provide this information in the proper form (i.e., average per litter rather than total numbers).

Only one breeder indicated having produced a puppy of non-standard colouring, in this case identified as a 'dull black tone.' No respondents reported having produced a blue or white puppy. Breeders predominantly identified linebreeding as their preferred breeding strategy with 63.6% utilizing it as opposed to outcrossing at 36.4%. Intervariety breeding was employed by 14% of respondents.

Cleft palates were encountered by 11% of breeder respondents, though it should be noted that 9.1% had encountered this in only one dog. Other abnormalities included long-haired, curly coat (correct colouring), skin not covering skull, abnormal umbilical, underdeveloped liver, incomplete heart valve development, hermaphrodite, hydrocephalus, enlarged heart as well as several more general physical deformities.

Breeders were asked to indicate the frequency with which they employ health testing in the areas of Legg-Calve-Perthes Disease, Eye testing and von Willebrand's Disease. Analysis indicates that 67.2% of respondents never x-ray for Legg-Calve-Perthes Disease, 27.6% x-ray sometimes and 5.2% always. The majority of those who x-ray do so before age 1. With regard to CERF eye examinations 57.9% of breeders indicate that they never CERF eyes, 24.6% CERF eyes sometimes and 17.5% CERF eyes always. The majority of those who CERF eyes do so at 1-2 years of age. Finally, 42.4% of respondents indicated that they always test for Von Willebrand's Disease, making it the most consistently tested for disease. 35.6% of respondents test only unless the dog is from clear parents, 10.2% test for vWD sometimes and 11.9% indicate that they never test for vWD. DNA testing was indicated as the primary testing method at 77.8% with 22.2% using Blood Assay.

The majority of breeders (44.8%) give three vaccinations by 16 weeks of age, while 29.3% have given four and 19% only two. Adult boosters are administered annually by 58.5% of respondents and rabies vaccinations every three years by the majority (51.2%) of respondents. 22.2% of breeders vaccinate their bitches for infectious diseases prior to breeding. Additionally, 47.3% of breeders always or sometimes vaccinate for parvovirus separately from other diseases. The number of individuals vaccinating their own dogs versus use of a veterinarian for vaccination was split fairly evenly when rated always, sometimes or never. Finally, 56% of respondents always give their dogs Heartworm medication, with 16.7% sometimes and 27.4% never, though geographical diversity should be noted.

Health Factors

Calculations in this section are based on a sample size of 338 dogs in the period 1960-1989, and 1029 dogs in the period 1990 to present. Although the questionnaire did not explicitly ask for 'number of dogs rated for each time period,' dog ownership in the period 1960-1989 was estimated to be at a level equal to 24.7% of the total reported dog ownership (based on the figures collected on page one of the survey). Because the data collected for the period 1960-1989 was intended as a tool for comparative analysis it will be mentioned in this report only in cases where significant changes have been noted between that period and the present (1990-present).

Hematology/Blood Disorders

The most significant disease noted in this section was, not surprisingly, von Willebrand's Disease. 28 cases (2.72%) were identified, though it should be noted that no differentiation was made among carrier or affected individuals as identified through DNA. More comprehensive statistical analysis is available from VetGen. More interesting than the actual rate of disease, however, were the consequences of the condition. No animals were identified as having bled excessively during surgery, due to spontaneous nose bleeds or during nail cutting. Only one (1) individual was reported to have 'bled out' due to Von Willebrand's Disease, that individual did die during the episode.

Cancer/Oncology

Several types of cancer were identified at relatively low levels, none affecting more than 4 individuals. These included Basal Cell Tumors (0.29%), Chondrosarcoma (0.10%), Lymphosarcoma (0.39%), Malignant Melanoma (0.29%), Mammary Cancer (0.29%), Mast Cell Tumor (0.10%), Osteosarcoma (0.10%). Disorders identified under 'other' included Liver Cancer, Pre-cancerous Tumor and Non-malignant Mammary Tumors. While there was no specific type of cancer which exhibited a marked increase between the two time periods analyzed, the overall incidence of oncologic manifestations did increase significantly as only two instances of cancer related illnesses were noted for the period from 1960-1989.

Endocrinology

This disease category offered several conditions that appear to be significant to the Manchester Terrier. Chief among these were Thyroid-related illnesses with 27 cases of Hypothyroidism (2.62%) in the surveyed population and 5 of Hyperthyroidism (0.49%). Other conditions affecting the breed include Cushing's Disease (0.68%), Addison's Disease (0.58%), Diabetes Mellitus (0.10%), Insulinoma (0.10%).

Ear

Deafness affected 15 Manchester's, representing 1.46% of the surveyed population. An additional 4 individuals were identified for the period 1960-1989 (1.18% of that population). Other ear related problems included chronic ear infections (0.10%) and mites (0.10%).

Digestive System/Gastroenterology

The most common condition identified in this category is Coprophagia (stool eating) which affected fully 13.51% of the surveyed population (139 individuals). Impacted anal glands presented a problem for 35 animals (3.4%) while Coccidiosis was noted in 27 (2.62%) and Giardia infections in 24 (2.33%). Biliary Vomiting Syndrome, a condition characterized by episodes of vomiting bile, was found in 14 individuals representing 1.36% of the surveyed population. In all cases, the disease or condition's incidence showed a marked increase in frequency over the period 1960-1989.

Other conditions affecting Manchester Terriers included Colitis (0.49%), Constipation (1.46%), Chronic Diarrhea (0.29%), Esophageal Stricture (0.10%), Gastric Dilation and Volvulus (0.19%), Hiatal Hernia (0.10%), Inflammatory Bowel Disease (0.29%), Irritable Bowel Syndrome (0.39%), Megaesophagus (0.39%), Obesity (0.87%), Pica (0.78%), Hemorrhagic gastroenteritis (0.10%) and Acute pancreatitis (0.49%).

Feeding practices reflected a wide variety of products and methods. Of the 151 individual responses (some respondents having listed more than one product), 34 (22%) were not what can be categorized as commercial dog food. These products included raw and cooked meat, fruit, vegetables, dairy, eggs and 8 individuals identifying BARF as their primary method of feeding. While this does not necessarily reflect that a full 22% of breed fanciers are feeding natural foods exclusively, it does indicate that in addition to those feeding natural diets a significant number are also supplementing their dog's commercial food with natural products. Among commercial dog foods no brand is clearly used with more often than any other is, although Eukanuba, Iams, Pro Plan and Purina did appear with a slightly higher frequency than other brands. Kelp is the most popular supplement currently being used with Brewer's Yeast, Flaxseed, Marine/Fish oils, Multi-Vitamins, Pet-Tab, Prozyme, Sea Meal, Vitamin C and Vitamin E as other popular additives.

Heart/Cardiology

The most significant cardiac condition noted was the presence of a heart murmur, with 28 identified cases representing 2.72% of the surveyed population. The mean age at which individuals were affected was 4.67 years. Of the individuals who identified the 'grade' of heart murmur their Manchester was affected by, 37.5% were grade 1, 37.5% grade 2, 12.5% grade 3, and 12.5% grade 4. It should be noted, however, that this data might not present an accurate picture as information on murmur severity (grade) was provided for only 8 dogs. Cardiomyopathy was found in 1.26% of the population (13 individuals), with a further 3 cases (0.89%) identified in the period 1960-1989. Though not all respondents elected to provide further information on affected dogs, age at death ranged from 3 months to 7 years with eight affected animals dying at under 1 year of age, two at 3 years of age and two at 7 years of age. Of those identified seven were males and four females, five were identified as chrysochlorid.

Other cardiac conditions affecting Manchester's included Arrhythmia (0.19%), Atrial Septal Defect (0.19%), Congestive Heart Failure (0.19%), Myocardial infarct (0.29%), Valve Dysfunction (0.19%), and Enlarged Heart (0.19%). The following was also listed under 'other': "Puppy dropped dead at 12 weeks – autopsy showed scar tissue around the heart. He was also bilaterally chrysochlorid." No specific condition was identified.

Mouth and Teeth

18.37% of Manchester Terriers surveyed were missing teeth (representing 189 individuals). Additionally, overbites were found in 30 cases (2.92%) and underbites in 47 (4.57%). Gingivitis was identified as a problem in 4.86% of the population despite the fact that 78.3% of respondents provide regular dental care through regular brushing (73.5%), surgical cleanings (24.5%) and dental foods (2%). Other conditions included cleft palates (0.68%), Malocclusion (0.39%), Oral Papillomatosis (0.10%), and Salivary gland cyst (0.58%). In the 'other' category periodontal disease, swollen salivary glands, dark front canines (possible damage) and a tongue growth were reported.

Skin

Puppy mange was identified as a consistent problem, affecting 6.22% of Manchester's (64 individuals) in the present time frame and 7.1% in the period 1960-1989. General mange affected 0.68% of the population and localized demodex 1.85%. Seasonal Alopecia presented in 19 cases (1.85%) and ringworm in 28 (2.72%). Other conditions affecting the Manchester Terrier included Atopy (.78%), Hot Spots (0.29%), Lupus erythematosus (0.19%), Puppy Strangles (0.49%), Pyoderma (0.29%), Sebaceous cysts (0.97%), Spiculosis (0.10%), Tumors of the skin (0.39%), Warts (1.17%), Elephantitis (0.78%). There were no reported cases of Ehler's Danlos Syndrome. Conditions listed under the 'other' category include fungal infection, hard bumps inside ear leather, dandruff, dry and cracked ears, bald chest.

Infectious Diseases

No significant infectious diseases were noted, however an individual case was reported for each of the following: Valley Fever, Parvovirus, Dog Show Crud, Helicobacter. No cases of Brucellosis were reported.

Liver Disorders

No significant liver disorders were noted. Pancreatitis occurred in four individuals (0.39%) and Cirrhosis in two (0.19%). An individual case was noted for each of the following: Cholangiohepatitis, Cholelithiasis, Amyloidosis, Portosystemic shunt, and Hepatic microvascular dysplasia.

Musculoskeletal

The most common musculoskeletal condition identified was Legg-Calve-Perthes Disease, which was seen in 15 individuals (1.46%). Luxated patella's were noted in 12 cases (1.17%) and arthritis in 5 (0.49%). Other conditions affecting Manchester Terriers include Cruciate Ligament Tear (0.19%), Elbow Dysplasia (0.10%), Rheumatoid Arthritis (0.19%), Osteoarthritis. Conditions listed under 'other' include overflexion of front legs and damage to growth plate.

Neurology

Seizures were reported in 10 Manchester Terriers, representing 0.97% of the surveyed population and Epilepsy in three (0.29%). A further 6 cases of seizure were noted in the period 1960-1989 (1.78% of that population). Tremors were noted in 6 individuals (0.58%) and Ataxia in 5 (0.49%). Hydrocephalus was seen once (0.10%). Conditions under 'other' include Vestibularitis and one male with an unidentified, progressive neuromuscular disease manifesting symptoms similar to degenerative myelopathy. This individual sired one litter, all puppies showing some symptoms with periods of onset ranging from 6 weeks to 2 years of age.

Ophthalmology

The most significant ophthalmologic disorder noted was cataracts, which were found in 14 individuals (1.36%). Nightblindness was found in 0.68% of the population (seven cases) and Progressive Retinal Atrophy in 0.29% (three cases). Other conditions affecting the breed include Conjunctivitis (0.87%), Entropion – eyelids everting inward (0.29%), ingrown eyelashes (0.10%), Keratoconjunctivitis sicca – dry eye (0.19%), Lens Hardening (0.10%), Ulcerated Cornea (0.19%). Conditions under 'other' included age-related eye changes (clouding), cloudy corneas and Folliculitis.

Respiratory

No significant respiratory conditions were identified. Bronchitis was reported in two individuals (0.19% of population). Conditions listed under the 'other' category include recurrent kennel cough, chronic tonsillitis and tracheal spasms.

Reproduction

Breeders and fanciers surveyed reported 95 cases of false pregnancy in Manchester Terriers, representing 9.23% of the population. Monorchidism was noted in 33 individuals (3.21%) and chryptorchidism in six

(0.58%). Additionally, rear dew claws were seen in 24 Manchester's (2.33%) and umbilical hernias in 18 (1.75%). Infertility was identified in 1.36% of males (14 individuals) while only two cases (0.19%) were reported in females.

With regard to colouring no blue or white puppies were reported and only one case of a dog with proper colouring at birth developing white markings within the first few months. Other conditions affecting Manchester Terriers included Spontaneous Abortion (0.10%), Dystocia (0.58%), Herpes (0.58%), Hermaphroditism (0.19%), Mastitis (0.58%) and Pyometria (0.49%). Conditions listed under the 'other' category include cesarean section, small pelvis and puppies born with small white chest spots.

Kidney/Urinary

The most significant kidney related conditions were Amyloidosis (0.68%) and Oxalate Stones (0.78%), both of which showed a consistent presence through both the period 1960-1989 and 1990-present. Other conditions affecting Manchester Terriers included Incontinence (0.29%), Chronic Renal Failure (0.29%) and one case of renal failure due to an E. coli infection (listed under 'other').

Toxicity

Allergies have long been a concern of Manchester breeders and fanciers. The survey showed that vaccination allergies occurred in 1.26% of the population (13 cases). Vaccinations identified included bordatella, rabies, leptospirosis, and Lyme Disease, though no specific incidence rate is available. Food allergies affected 12 individuals (1.17%) while 16 respondents identified allergens in the 'other' category which included weed killer, Febreeze, Bio-spot, and wheat – again, no specific incidence rate is available.

Temperament

Respondents asked to identify temperament problems pointed equally to aggressiveness and excessive shyness as primary problems in the breed with 38 'cases' of each (3.69%). Fearfulness was attributed to 25 individuals (2.43%). Fear biting was a problem for 11 Manchester's (1.07%) and 19 Manchester's have problems with submissive urination (1.85%). Two individuals also cited hyperactivity as a problem. It should be noted that, with the exception of fear biting and submissive urination, temperament problems were diagnosed at the sole discretion of the survey respondent and consequently no consistent standard was used to measure it.

Common Conditions

Diseases identified in 1% or more of the Manchester population have been categorized below.

Most Common Non-Infectious Diseases		Most Common Non-Infectious Conditions	
vWD	2.72%	Coprophagia	13.51%
Heart Murmur	2.72%	Puppy Mange	6.22%
Hypothyroidism	2.62%	Gingivitis	4.86%
Deafness	1.46%	Impacted Anal Glands	3.40%
Legg-Calve-Perthes	1.46%	Monorchidism	3.21%
Cataracts	1.36%	Seasonal Alopecia	1.85%
Cardiomyopathy	1.26%	Localized Demodex	1.85%
Luxated Patella's	1.17%	Umbilical Hernia	1.75%
		Infertility	1.36%
		Bilious Vomiting Syndrome	1.36%
		Vaccination Allergy	1.26%
		Food Allergy	1.17%
		Warts	1.17%
Most Common Infectious Diseases			
Dermaphytosis (ringworm)	2.72%		
Coccidiosis	2.62%		
Giardia	2.33%		



Comparative Analysis

For purposes of comparison, selected data has been cross-referenced with percentage frequency rates in other breeds below.

	Manchester Terrier	Scottish Terrier	Boston Terrier	Australian Terrier	Toy Rat Terrier	Whippet	Terverun	Papillon	PBGV	Bouvier
Heart Murmur	2.72%				0.60%	6.00%		20.0%	0.93%	2.10%
Hypothyroidism	2.62%		2.50%	3.10%		5.00%	4.87%	8.00%	4.06%	6.70%
Deafness	1.46%	1.20%	3.80%	2.60%		1.00%		8.00%	1.55%	
Legg-Calve-Perthes	1.46%	0.06%		3.50%	0.40%		0.09%			
Cataracts	1.36%	1.10%		8.80%		4.20%	3.43%		2.65%	1.40%
Cardiomyopathy	1.26%		1.10%			0.50%	1.02%			0.90%
Luxated Patella's	1.17%	1.20%	9.70%	15.9%	1.00%		.032%	47.0%	2.03%	0.10%
Monorchid	3.21%	0.06%			0.30%					
Chryptorchid	0.58%	0.06%	1.89%	6.50%	0.60%	13.0%	2.55%		0.93%	5.07%
Cleft Palate	0.68%	0.60%	5.70%		0.40%	0.71%	0.37%		0.30%	

1997 Australian Terrier Health Survey: <http://www.australianterrier.org/survey.html>

1995 Scottish Terrier Health Survey: <http://clubs.akc.org/stca/healthsurvey.htm>

2000 Boston Terrier Survey: <http://bostonterrierclubofamerica.org/health/healthsurvey2.htm>

2000 Whippet Health Survey: <http://www.sighthoundreview.com/WHF/SURVEYRESULTS.htm>

Bouvier Health Survey: <http://www.bouvier.net/health/ghcresults.html>

1998 Belgian Terverun Health Survey: <http://www.abtc.org/healthSurvey.htm>

2002 Rat Terrier Statistics and Health Survey

2000 Papillon Health Survey: <http://papillonclub.org/PapillonHealth/survey2000.html>

2001 PBGV Health Survey (PDF)