

GDLAWA Incorporated 2014 Health & Lifestyle Survey

A pet population of 285 Great Dane dogs.

Western Australia is the largest state in Australia in size but one of the smallest in population sitting at almost 11% of the country's residents living in WA. The state's size is over 2,500,000 sq kms yet approximately 65% of the population live in and around the capital city of Perth. Perth is one of the most isolated capital cities in the world and the closest capital city to it is over 2,000kms away.

The Great Dane Lovers Association of Western Australia Incorporated (GDLAWA) is a social pet club inaugurated in 2003. The formation of the club was to provide Great Dane owners in Western Australia with a social club that organised monthly events and provided support to Dane owner-members, and to the wider community. The club is breed specific but by being a pet-social club, is able to include Danes of all origins & colours along with Dane Crosses and 'honorary danes'. Many of the members have a Great Dane and another breed so all member dogs are included in the activities. The club walks are certainly a sight for the general public when they see a large group of giant dogs and their best friends all strolling a path together!



The GDLAWA organises on-lead walks once a month in the metropolitan Perth area and runs an annual Fun Day. Monthly walk attendance averages 60 – 70 dogs and the Fun Day, around 100. The club also provides an opportunity for prospective Dane owners to visit homes to learn about owning a Dane, attend the walks as a guest to see the variety of colours, ages, sizes and demeanours, provides articles and newsletters to members, offers a general public contact point and provides rescue & rehoming services in Western Australia for the breed.

The GDLAWA is not an ANKC (Australian National Kennel Club) affiliated breed club although some members of the club show their Danes and some are Registered Breeders. Whilst not being ANKC affiliated, the club supports the betterment of the breed and works closely with the wider Dane community across Australia with information sharing and for rescue & rehoming.

The 2014 Health & Lifestyle Survey was a project performed by the GDLAWA Committee as a means of gathering a snapshot perspective of owner's habits and the health status of the Great Danes in the club at this moment in time and as a purely pet population. The club's profile at the time of the survey was 223 memberships with 270 Great Danes and 97 Honorary Danes (Dane crosses, other breeds).

SURVEY OUTLINE:

- The survey commenced mid - January 2014 and the phone surveys were conducted over seven weeks until the end of February 2014.
- **Only purebred Great Danes** were included in this survey to ensure that health related issues specific to the breed could be measured.
- Club members, ex-members, adopters of rescues and others were emailed an outline of the survey and asked to participate. Those who wished to share their dog's information were booked a timeslot for the interview.
- Rescue dogs were included where, the owner had adopted them and had, or does have them from adoption point for whole of life or to current time.
- Deceased dogs were included where all of the survey questions being asked could be answered.
- The survey population was randomised simply by **'optional participation'**.
- The survey was conducted by phone interviews where the owners were asked a pre-written set of 68 questions. Phone interviews were conducted by one person from the GDLAWA Committee, to avoid vagaries of answers.
- **Questions relating to any 'health issue' required that the issue had been clinically diagnosed to avoid any blurring.**
- Data collected is 'actual' and may not be a recommended treatment at all. EG: anti-histamines for urinary incontinence. As a non-clinician, the surveyor is presenting the 'actual response' and not varying it by appropriateness.
- The survey goal was to measure as many parameters as possible for this broad-based pet population and present the data in prevalence and percentage form. The origins of the dogs were collected but dog names, owner's names and breeders are not published.

Once the data collection was completed, the analysis of every question and results was performed to derive the actual numbers of prevalence of each lifestyle or health issue. With 68 questions, there was also an ability to cross-match data and pull together reciprocal outcomes such as 'age of sterilisation versus incontinence prevalence' and many other issues.

Following the analysis component, the report was written and all tables and charts created from the data result in this document.

As the GDLAWA is not a clinical body, the data analysis is purely 'factual' based on 'what is' rather than 'interpretive'. Whilst the club does have members who are scientists or veterinarians, this survey was to be purely a prevalence survey to show the **actual results for the population canvassed**.

For readers of the data, it is important to understand that this population of 285 Great Danes shows a specific prevalence percentage for **this population** and may not be a true **'probability'** of having health issues. There are many clinical studies available that show very specific interrogative efforts and may show higher or lower prevalence outcomes.

To further qualify, this population was a 'pet group' and have a very involved ownership in a relatively affluent lifestyle. The population also included a very large range of origins and only limited familial relationships which can spread or reduce the incidence of congenital health issues.

The prevalence data for each issue follows and the GDLAWA Committee would like to extend grateful thanks to the 151 people who participated and contributed the 285 dog's data to this project.

Without your information and willingness to share it, this valuable insight into a population of Great Danes would not have been possible!

PLEASE NOTE: Some small rounding of percentages to 4 decimal places may mean results do not always exactly equal 100% in tables and charts.

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Females: Urinary Incontinence	12.7%	16 - 17
Bloat/GDV	8.1%	17 - 21
Endocrine Diseases: Addison's, Cushings, Thyroid Imbalances	0%	22
Orthopaedic Issues	8.1%	22 - 23
Arthritis	14.4%	23 - 24
Cruciate Ligament Injuries	7%	25
Heart Issues, specifically DCM	3.9%	26
Cancers	10.2%	27 - 29
Eye Conditions	12.3%	30
Allergies	31.9%	31 - 32
Anal Glands	27.7%	33
Temperament		34
Other Medical Issues Experienced		35
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DOG POPULATION OVERVIEW:

285 purebred Great Danes from 151 owners were surveyed.

SEX	285 dogs	
Male	143	50.2%
Female	142	49.8%

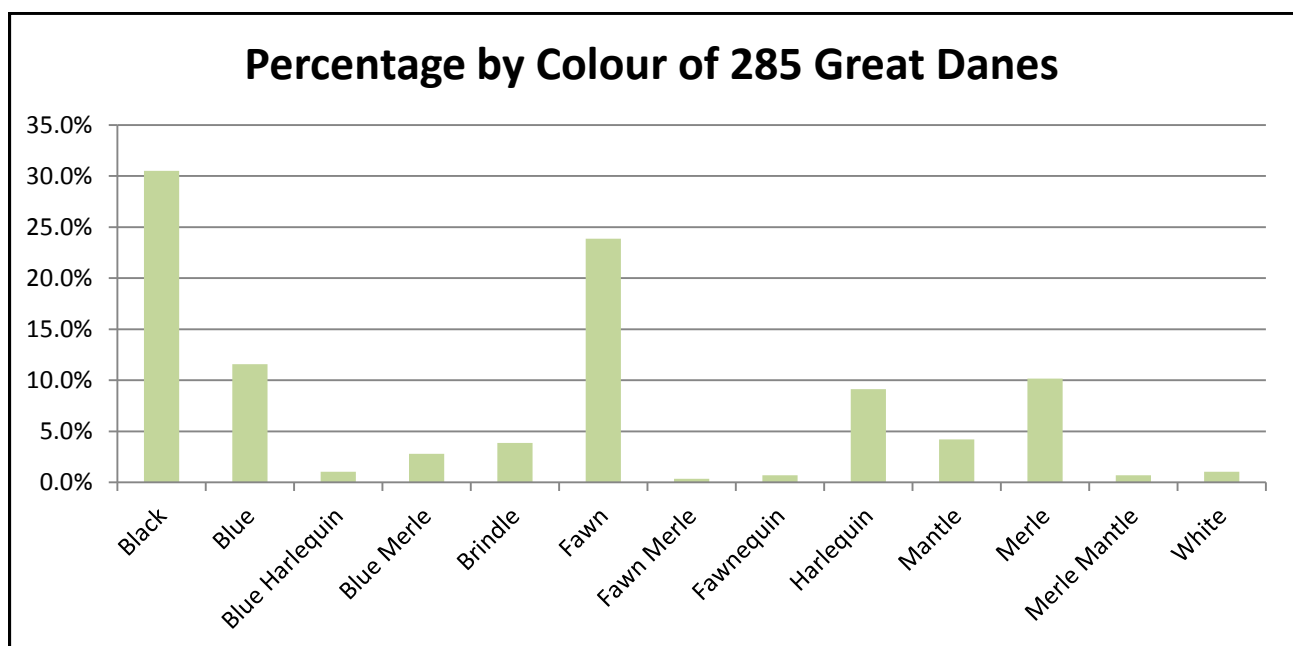
Of the 285 dogs surveyed and excluding the 'Unknowns' who were some rescues without any prior information at surrender point, the known population came from **114 different lines/prefixes**. We believe this is a relatively unique situation and is reflective of the club's location, isolation and propensity to buy dogs both locally and from inter-state breeders.

OWNERSHIP INITIATION	285 dogs	
Purchased	225	78.9%
Rehomes	31	10.9%
Rescue Adoptions	29	10.2%

BREEDER ORIGIN	285 dogs	
Registered Breeder	178	62.5%
Unregistered breeder	83	29.1%
Unknown (Rescue or Rehome of unknown origin)	24	8.4%

COLOUR	285 dogs	
Black	87	30.5%
Blue	33	11.6%
Blue Harlequin	3	1.1%
Blue Merle	8	2.8%
Brindle	11	3.9%
Fawn	68	23.9%
Fawn Merle	1	0.4%
Fawnequin	2	0.7%
Harlequin	26	9.1%
Mantle	12	4.2%
Merle	29	10.2%
Merle Mantle	2	0.7%
White	3	1.1%

The ANKC Breed Standards for the Great Dane dog in Australia recognises the colours of Fawn, Brindle, Black, Blue, Harlequin (Blue & Black) and Mantle. Merles cannot be shown in Australia. In normal circumstances, all merles would be brought together in one group and colours like fawnequins and white would be reallocated. For the purposes of this particular set of data, we have elected to provide a complete breakdown by actual colours rather than Breed Standard colours. *It is important to reflect that breeding for colour in this breed is better done with thorough understanding of the genetics behind it.*



AGE IN SURVEY:

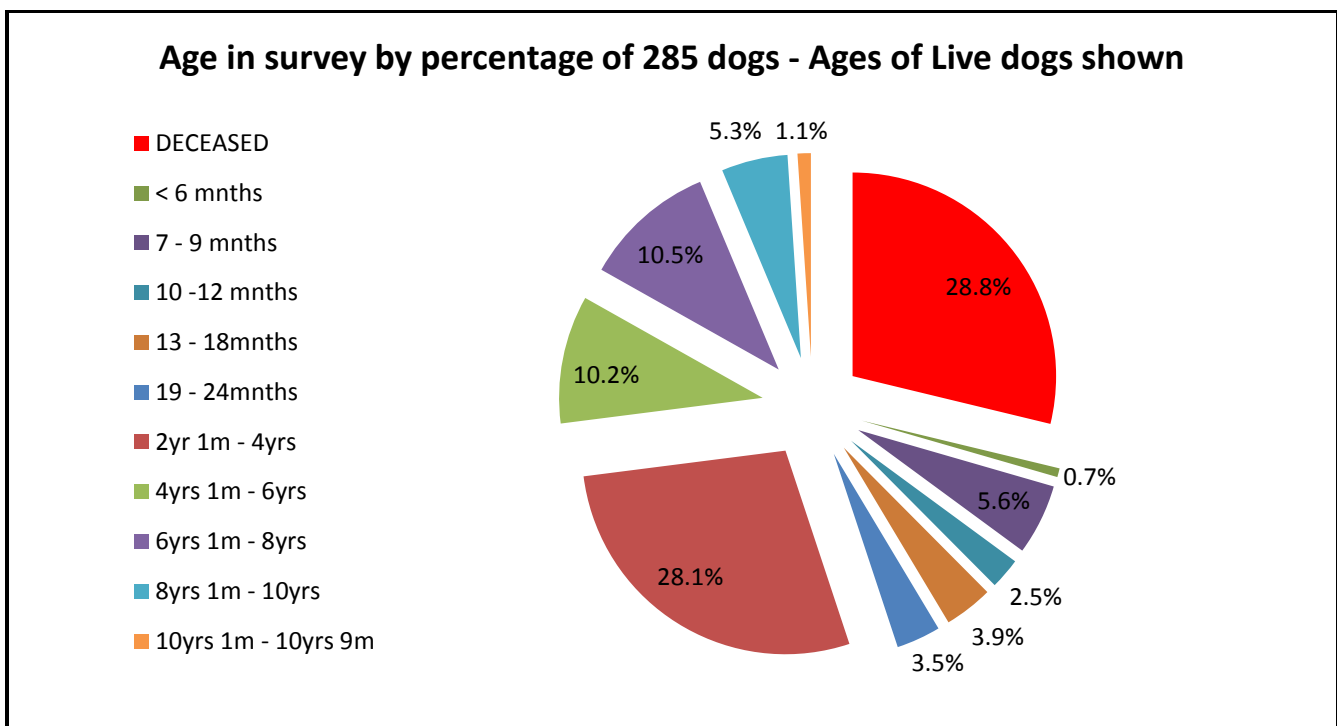
The survey was randomised simply by optional participation and no dog was rejected unless their complete data was not available or their diagnosis was not clinically acquired. It is interesting to know that the randomisation provided an inherent variety of ages across the 285 dogs.

- 157 or 55% of the **currently alive dogs** were over 2yrs old which gives good opportunity for Great Dane specific health issues to have shown if present.
- 82 or 28.8% of the dogs surveyed were deceased but able to contribute their lifestyle and health history. Their age of passing away was collected.
- Adding the deceased dogs age of passing to the currently alive ages meant that 233 of 285 dogs or **81.8% surveyed were aged 2yrs or over and therefore would be classed as 'adult' dogs.**

AGE IN SURVEY	285 dogs	
DECEASED	82	28.8%
< 6 months	2	0.7%
7 - 9 months	16	5.6%
10 -12 months	7	2.5%
13 – 18 months	11	3.9%
19 – 24 months	10	3.5%
2yr 1m - 4yrs	80	28.1%
4yrs 1m - 6yrs	29	10.2%
6yrs 1m - 8yrs	30	10.5%
8yrs 1m - 10yrs	15	5.3%
10yrs 1m - 10yrs 9m	3	1.1%

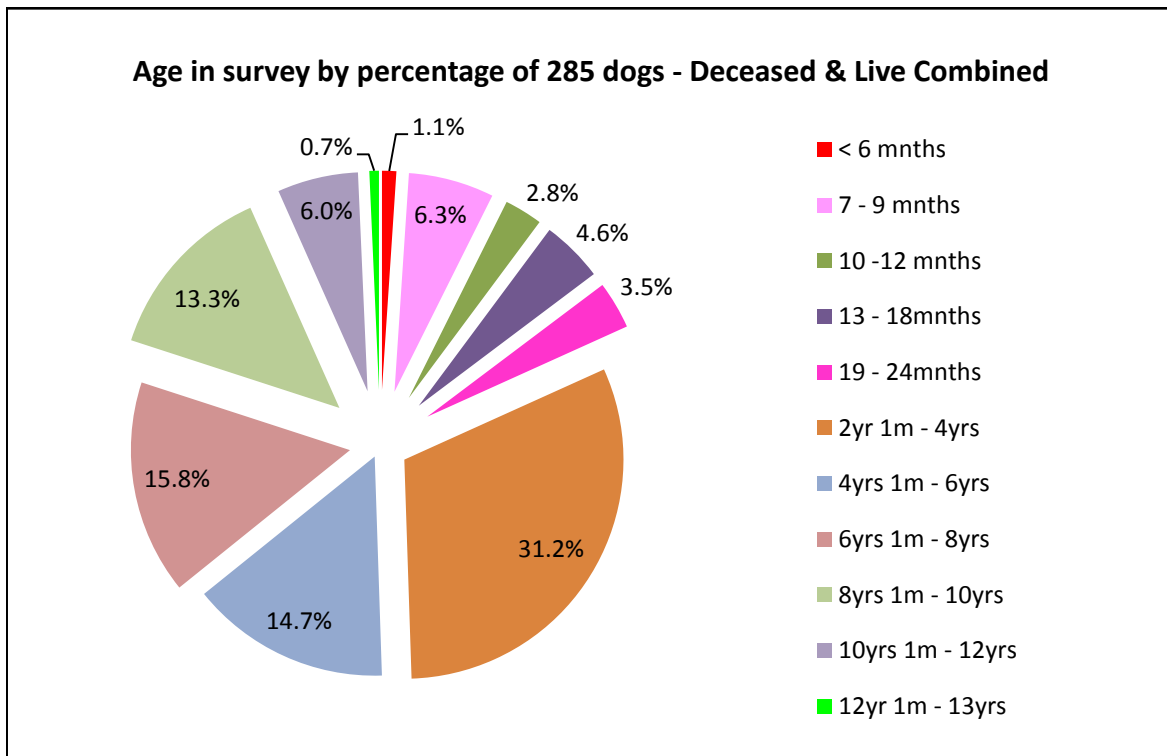
NB: 6 dogs have ages that are best estimate as no information was known at rescue/adoption

AGE OF DECEASED DOGS AT PASSING	82 of 285 dogs	
< 6 months	1	1.2%
7 - 9 months	2	2.4%
10 -12 months	1	1.2%
13 - 18months	2	2.4%
19 - 24months	0	0.0%
2yr 1m - 4yrs	9	11.0%
4yrs 1m - 6yrs	13	15.9%
6yrs 1m - 8yrs	15	18.3%
8yrs 1m - 10yrs	23	28.0%
10yrs 1m - 12yrs	14	17.1%
12yr 1m - 13yrs	2	2.4%



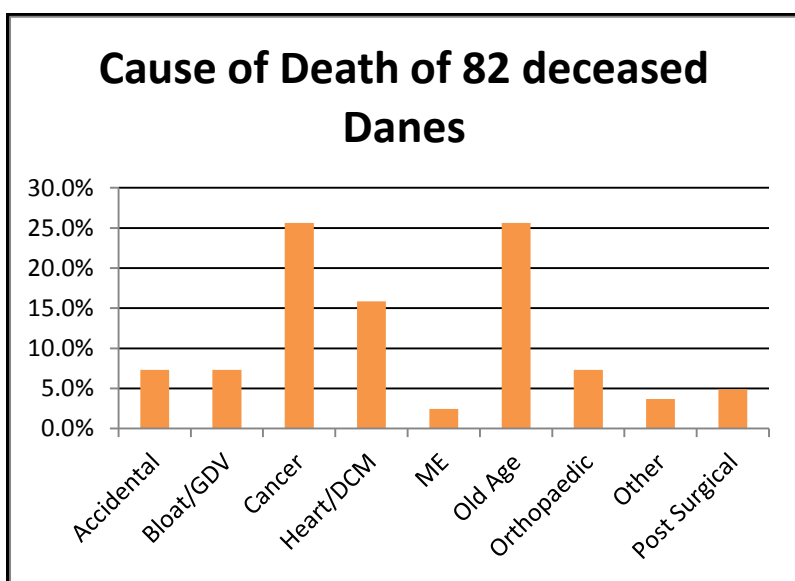
One of the most common questions asked about Great Danes is ‘How long do they live’! Most Great Dane information cites a life expectancy of between 7 – 10yrs with many variations in between.

Great Danes are considered to be senior from 5yrs old being a giant breed and it was heartening to see that 102 or 35.8% of the dogs surveyed were, or had lived to be 6yrs old and over and 6.7% had celebrated being 10yrs plus.



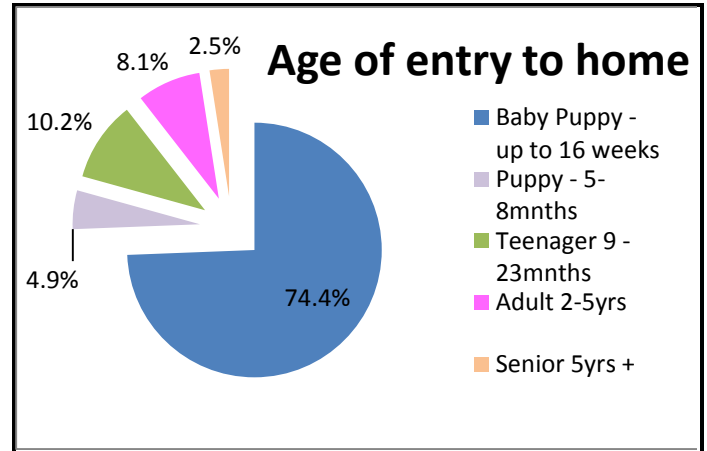
Of the 82 deceased Great Danes, there were 25 different causes of death where some were replicated and others unique. On a positive note, around one quarter of the deaths were related simply to ‘old age’ and the challenges of mobility that come with it. Other causes have been grouped into relative issues:

- GDV (6 dogs) – Bloat & torsion deaths were either post-op or euthanized for poor prognosis of recovery.
- Cancers (21 dogs) – 38% of the cancer deaths were from Osteosarcoma and 28.6% were head/ neck cancers.
- Heart/DCM (13 dogs) – 61.5% of this group were diagnosed Dilated Cardiomyopathy and the remainders were sudden infarction.
- ME (2 dogs) – Megaesophagus
- Orthopaedic (6 dogs) – 3 were Wobblers, 2 were Hypertrophic Osteodystrophy and 1 was Hip Dysplasia.



AGE OF ENTRY INTO THE HOME:

- 78.9% of the dogs surveyed were purchased by their owners, some as baby pups, others as older pups or dogs and the rest were adopted.
- 57.5% of all the dogs came into the home as 8-12 week old puppies and almost three-quarters (74.4%) were in their home by 16 weeks.
- 48 or 16.8% of all the dogs surveyed came into the home at an age older than 1yr. The 33 dogs that came into the home aged 1yr 1 month – 2yrs 11months is impacted by the number of teenage rehomes.



AGE OF COMING INTO HOME	285 dogs in survey	Rescue /Rehomes	% of total for each age
Born to home (including 1 adoption of a pregnant bitch)	8	1	2.8%
6 weeks	9	0	3.2%
7 weeks	20	0	7.0%
8 weeks	82	0	28.8%
9 weeks	10	0	3.5%
10 weeks	29	0	10.2%
11 weeks	9	0	3.2%
12 weeks	34	1	11.9%
13 weeks	2	0	0.7%
14 weeks	3	1	1.1%
15 weeks	1	0	0.4%
16 weeks	5	1	1.8%
5 months	6	1	2.1%
6 months	3	1	1.1%
7 months	3	1	1.1%
8 months	2	1	0.7%
9 months	2	2	0.7%
10 months	3	3	1.1%
11 months	1	1	0.4%
12 months	5	3	1.8%
1 year 1 month - 1 year 11 months	18	16	6.3%
2 years – 2 years 11 months	15	12	5.3%
3 years – 3 years 11 months	2	2	0.7%
4 years – 4 years 11 months	6	6	2.1%
5 years – 5 years 11 months	3	3	1.1%
6 years	3	3	1.1%
8 years 6 months	1	1	0.4%

VACCINATION REGIMES:

Participants were asked whether they vaccinated their dogs with an annual 'all-in-one', a tri-annual with Kennel Cough annually done, not at all or on an adhoc basis. Puppies that had only had their first set of vaccinations were separated to prevent skewing results.

Most of the tri-annual vaccination dogs had been annually vaccinated for at least 2 years prior to changing to the newer regimes.

CURRENT VACCINATION REGIMES	285 dogs	
Annual full vaccination	216	75.8%
3yrly vaccinations & annual Kennel Cough	45	15.8%
Still a puppy on base vaccinations	6	2.1%
Adhoc or occasional vaccinations done	2	0.7%
Not vaccinated at all	16	5.6%

FLEA, WORMING & HEARTWORM REGIMES:

Just over one-third of the dogs surveyed were being given an '*all-in-one*' variation of *Flea, Worm & Heartworm* treatment on a monthly basis.

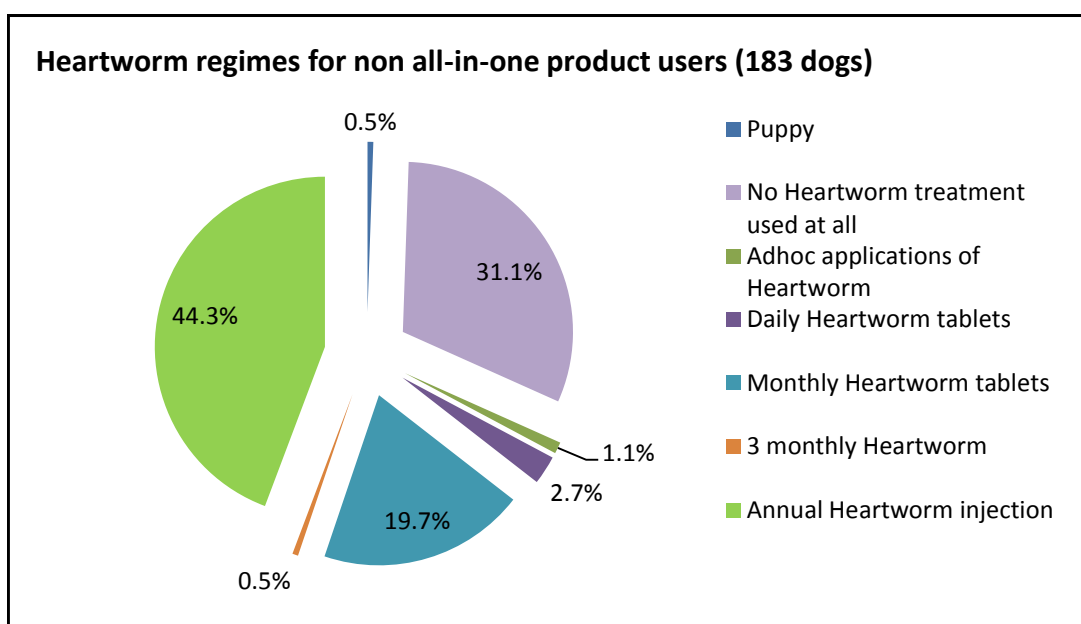
81.4% of the dogs on a monthly 'all-in-one' treatment were also on an annual vaccination regime as well and a further 16.7% of them were on the tri-annual vaccination.

FLEA, WORM, HEARTWORM REGIMES	285 dogs	
Monthly All-in-one Product	102	35.8%
Other variation approaches	183	64.2%

HEARTWORM: Dogs NOT on a monthly all-in-one treatment

20% of the **total dogs** surveyed were not treated for Heartworm at all.

- For **non-users** of monthly all-in-one treatments (183 dogs), Heartworm was treated in a variety of ways.
- 44.3% or 81 dogs were being given an annual Heartworm injection.
- 19.7% or 36 dogs were being given a monthly separate Heartworm tablet.
- 4.9% or 9 dogs were treated with an alternative regime for timing such as daily, 3-monthly or adhoc.

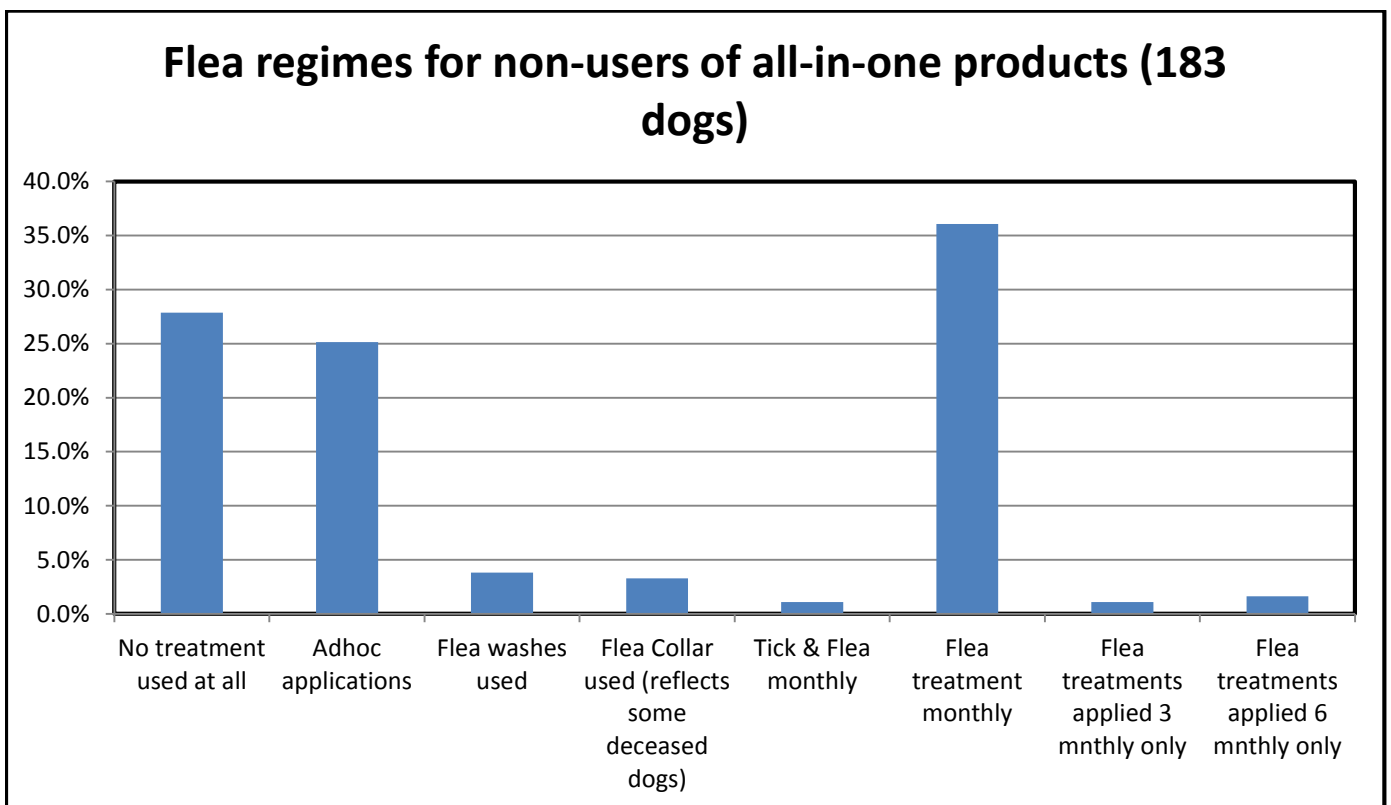


FLEA TREATMENT REGIMES: Dogs NOT on a monthly all-in-one treatment

35.8% of all dogs surveyed were being treated with an all-in-one monthly flea, worm & heartworm treatment. Of the remaining 183 dogs not on an all-in-one monthly treatment, 53% were either not treated for fleas at all or on an adhoc or as needed basis. This may reflect the ‘inside dog’ nature of Great Dane ownership.

As some of the dogs surveyed were deceased and had been alive in the 1990’s (8.4%), some were treated for fleas with washes and/or flea collars prior to the wider availability of treatment options. With a growing prevalence for Heartworm injections given annually, some dogs were treated separately for fleas and worms with just over a third using a monthly application.

FLEA REGIME FOR NON USERS OF ALL-IN-ONE PRODUCTS	183 dogs	
No treatment used at all	51	27.9%
Adhoc applications	46	25.1%
Flea washes used	7	3.8%
Flea Collar used (reflects some deceased dogs)	6	3.3%
Tick & Flea monthly	2	1.1%
Flea treatment monthly	66	36.1%
Flea treatments applied 3 mnthly only	2	1.1%
Flea treatments applied 6 mnthly only	3	1.6%

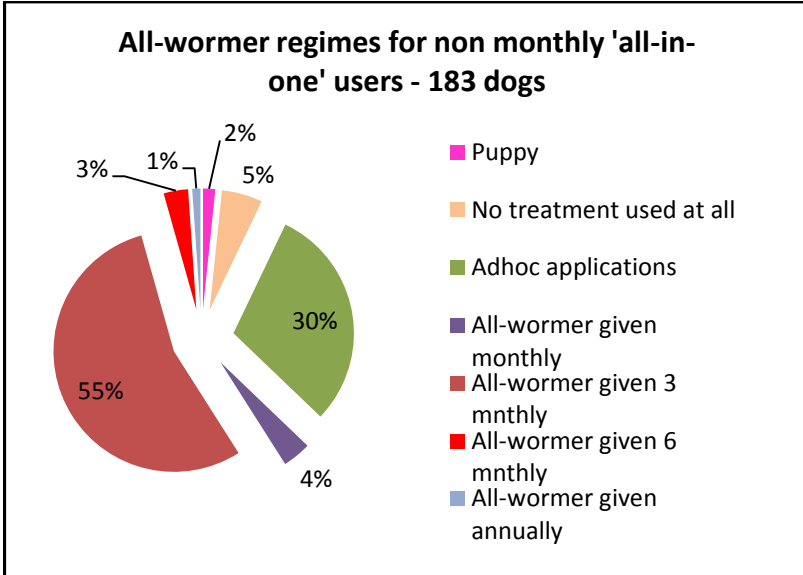


WORMING REGIMES:

74.4% of all dogs surveyed were wormed for all-worming regularly, either in a monthly all-in-one or with a separate all-wormer given on the normal regime practice.

The remaining 25.6% of dogs varied in their all-worming treatments.

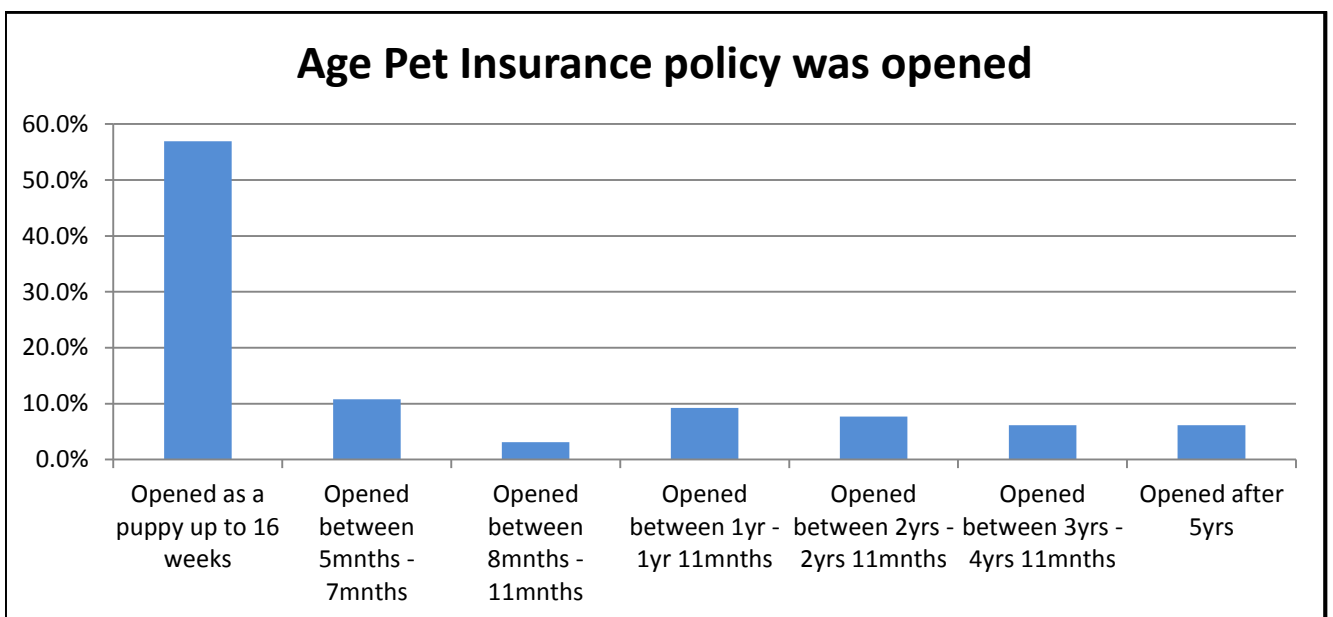
ALL-WORMER REGIME FOR NON USERS OF ALL-IN-ONE PRODUCTS	183 dogs	
Puppy	3	1.6%
No treatment used at all	10	5.5%
Adhoc applications	55	30.1%
All-wormer given monthly	7	3.8%
All-wormer given 3 monthly	100	54.6%
All-wormer given 6 monthly	6	3.3%
All-wormer given annually	2	1.1%



PET INSURANCE:

Pet insurance policies were held by 45.6% of all dogs surveyed with 56.9% of them opened as puppies prior to the age of 16 weeks. **70.8% of all insurance policies were opened by the time the dogs were 11 months old.**

PET INSURANCE	285 dogs	
Hold a current pet insurance policy	130	45.6%
No pet insurance policy current	155	54.4%

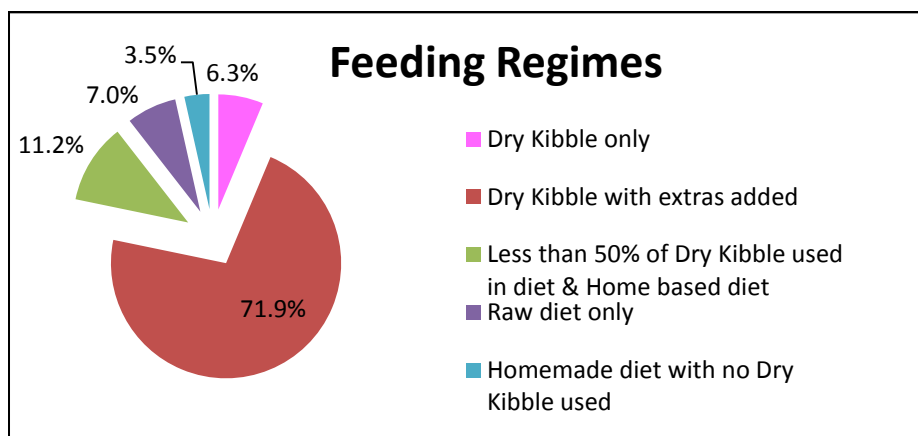


DIET & FEEDING REGIMES:

Participants were asked to describe their feeding regimes for all dogs surveyed and then the data was broken into 5 descriptive categories.

- **Dry Kibble Only:** no extras added 90% of the time.
- **Dry Kibble with Extras:** Kibble forms 80-90% of the diet intake but extras are added to most meals. Extras included tinned fish, raw meats, homemade meals, table-scrap, chicken necks/frames/wings, pet meat rolls.
- **Less than 50% Dry Kibble used:** Kibble is used for one meal or for a percentage of not greater than 50% of meals with remaining half or more being a variety of home-made or commercial products.
- **Raw diet only:** Dogs fed on a total raw diet which may include a prey model diet and no kibbles used at all.
- **Home-made diet:** No raw used or kibble at all.

CURRENT FEEDING REGIMES	285 dogs	
Dry Kibble only	18	6.3%
Dry Kibble with extras added	205	71.9%
Less than 50% of Dry Kibble used in diet & Home based diet	32	11.2%
Raw diet only	20	7.0%
Homemade diet with no Dry Kibble used	10	3.5%



Kibble types:

89.5% or 255 dogs surveyed were being fed Dry Kibble.

Individual brands were not measured.

Participants were asked what brand they fed and the brands were classified into Premium or Supermarket categories.

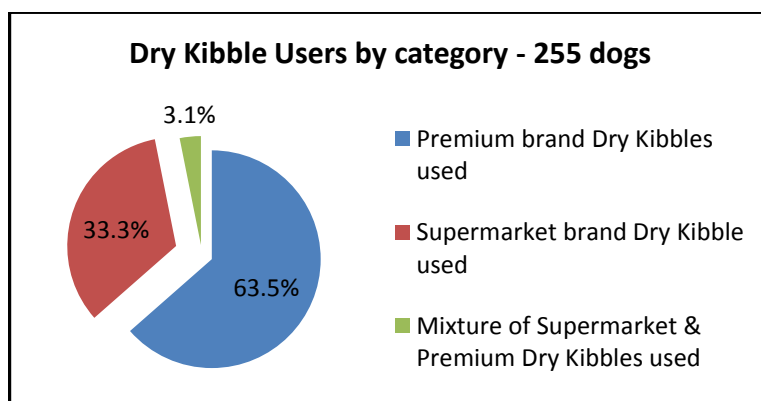
DRY KIBBLE USERS BY CATEGORY AS CURRENTLY FED	255 dogs	
Premium brand Dry Kibbles used	162	63.5%
Supermarket brand Dry Kibble used	85	33.3%
Mixture of Supermarket & Premium Dry Kibbles used	8	3.1%

The classifications were made as:

Premium kibble: available only from vets and pet specialty supply stores, online & retail.

Supermarket: available from grocery stores.

Of the Premium feeder, more than 65% were using one of two brands of food.



PUPPY GROWTH PERIOD FEEDING:

85.6% of the 285 dogs surveyed came to the owners whilst a puppy or still in the 'growth period' when most Dane owners are traditionally feeding carefully & consciously around slow, even and stable growth. All participants were asked what they had used for the feed programme in the puppy growth period of up to one year old. 14.4% of the dogs were adopted older and no information on the feeding regime was available.

PUPPY GROWTH PERIOD	285 dogs	
Large Breed or Giant Puppy Premium used	166	58.2%
Large Breed or Giant Puppy Supermarket used	19	6.7%
Large Breed or Giant Adult Premium used	11	3.9%
Large Breed Adult Supermarket used	29	10.2%
Raw diet used	6	2.1%
Home based diet used	13	4.6%
Unknown (adopted older)	41	14.4%

FEEDING PRACTICES:

Great Danes have a strong anecdotal and evidentiary link between feeding products and styles of eating and health issues so the survey included questions around feeding practices. There are clinical studies that show or negate links with a predisposition to Bloat/GDV and feeding practices and the opportunity to gather prevalence data on practices was harnessed in this survey.

Speed of eating was classified into Fast or Scoffer (virtually inhaling without chewing), Normal (chewing at a reasonable pace and relatively interested in food) and Slow (distracted, walks away, chews every morsel).

The 'soaking' of kibble or food prior to serving was a practice often prescribed to Great Dane owners, and frequently done so in an effort to reduce Bloat. This survey shows the practice is almost non-existent in this population.

SPEED OF EATING BY DOG	285 dogs	
Fast eater/scoffer	79	27.7%
Normal eater	124	43.5%
Slow eater	82	28.8%

SOAKING OF DRY KIBBLE PRIOR TO FEEDING	285 dogs	
Food is soaked to pre-swell	5	1.8%
Pre-soaked for medical reasons	3	1.1%
Not pre-soaked at all	247	86.7%
Not applicable - no kibble used	30	10.5%

LIMITING EXERCISE BEFORE AND AFTER MEALS:

The majority of dog owners in this surveyed population continue to limit exercise pre & post meals and almost all said they did this in relation to preventing Bloat/GDV. The majority **did not limit water** pre & post meals or exercise although many said they did not usually need to actively limit water post exercise as the dogs came home to rest. Many gave their dogs a drink following exercise at a park/beach and whilst out of the home so water was limited by volume available and owner handling the water level.

EXERCISE, FOOD & WATER PRACTICES	285 dogs	NO		YES	
Limit exercise pre & post meals		67	23.5%	218	76.5%
Limit water pre & post meals		253	88.8%	32	11.2%
Limit water pre & post exercise		236	82.8%	49	17.2%

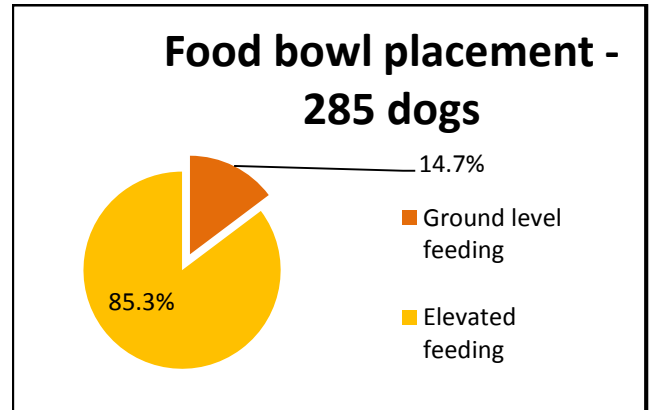
FOOD BOWL FEEDING HEIGHT:

Food bowl placement for meals has had varied opinions over the years. Many Dane owners have relied on elevating to ‘prevent Bloat’ and some studies in the past ten years have promoted ground level feeding as less likely to have Bloat.

85.3% of the 285 dogs surveyed were fed at an elevated position.

Elevated varied from ‘knee height’ to ‘shoulder height’.

Total raw diet dogs varied between elevated and ground level feeding and depending on the type of meats that meal, some dogs remained eating elevated and some took the bone/meats from the bowl and ate it at ground level themselves.

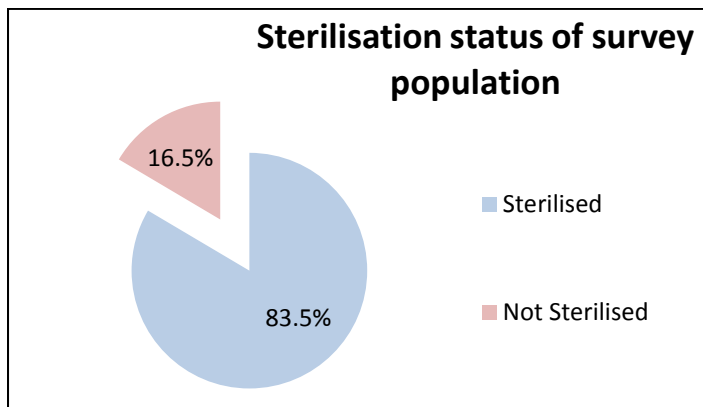


ELEVATION OR GROUND LEVEL FEEDING	285 dogs		Raw Only	% of total dogs	Kibble based	% of total dogs	Other Diets	% of total dogs
	Ground level feeding	42	14.7%	3	1.1%	38	13.3%	1
Elevated feeding	243	85.3%	17	6.0%	217	76.1%	9	3.2%

STERILISATION:

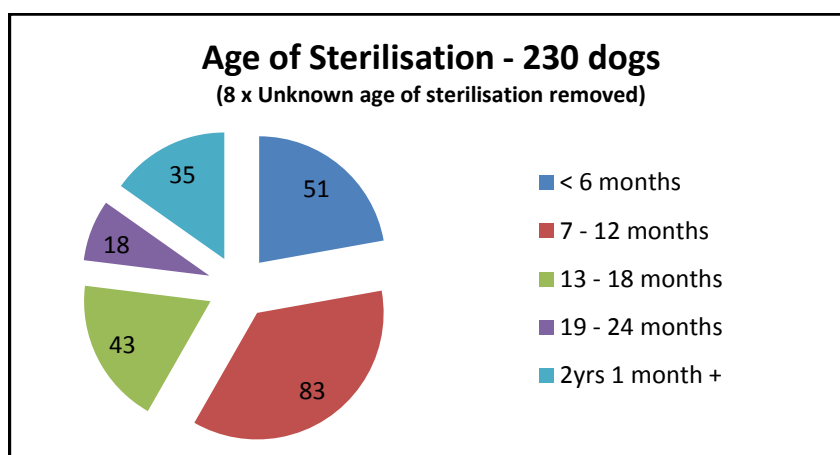
Sterilisation of dogs in a pet population was the most common outcome shown in this survey. A small handful of dogs were breeding dogs and/or show dogs, some were still very young and some were rescue or re-homed dogs that had been sterilised prior to adoption. Most, as evidenced by being purchased as pups, were pet dogs.

STERILISATION	285 dogs		Male – 143 dogs		Female – 142 dogs	
	Sterilised	238	83.5%	116	81.1%	122
Not Sterilised	47	16.5%	27	18.9%	20	14.1%



AGE & TECHNIQUE OF STERILISATION:

- Of the 238 dogs (83.5%) of the population surveyed, that were sterilised, the age and style of sterilisation varied.
- Of the male population sterilised, 4 dogs or 3.4% were chemically castrated at the time of the survey and the remainder were permanently castrated.
- 56.3% of all the sterilised Great Danes were sterilised by 12 months old.
- The split of male versus female sterilisation before 12 months of age was relatively even with sterilisations of the 134 dogs in that age group having been 54.5% of females and 45.5% of males.
- A further 18.1% were sterilised by 18 months old.
- 21.4% were sterilised at 6 months or younger.
- 3.4% had an unknown sterilisation age as they were adopted already sterilised and the age of the procedure was not known.

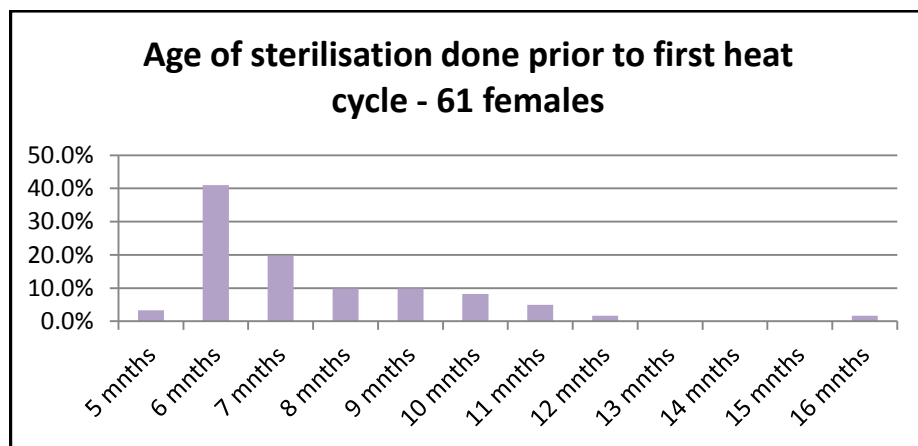
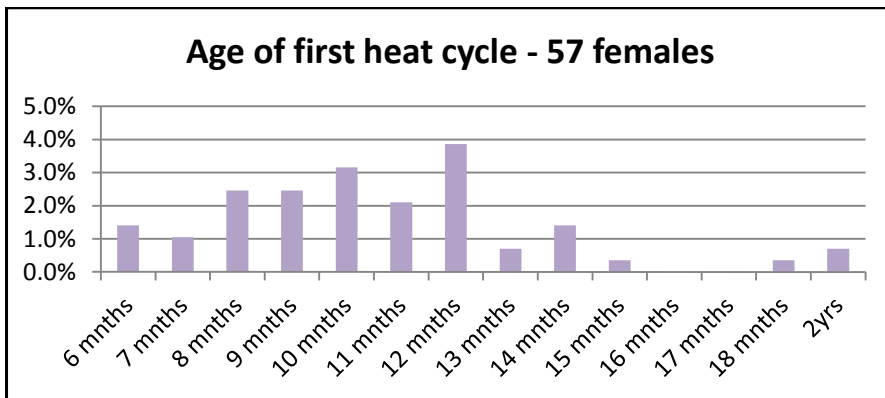


STERILISATION AGES	238 dogs		Male		Female		Castration	Chemical Castration	Spey
Unknown	8	3.4%	5	2.1%	3	1.3%	5		3
3 months	1	0.4%	1	0.4%	0	0.0%	1		0
5 months	3	1.3%	1	0.4%	2	0.8%	1		2
6 months	47	19.7%	22	9.2%	25	10.5%	22		25
7 months	23	9.7%	10	4.2%	13	5.5%	10		13
8 months	13	5.5%	5	2.1%	8	3.4%	5		8
9 months	9	3.8%	1	0.4%	8	3.4%	1		8
10 months	13	5.5%	4	1.7%	9	3.8%	3	1	9
11 months	12	5.0%	8	3.4%	4	1.7%	8		4
12 months	13	5.5%	9	3.8%	4	1.7%	8	1	4
1yr 1month - 1yr 6months	43	18.1%	24	10.1%	19	8.0%	23	1	19
1yr 7months - 2yrs	18	7.6%	11	4.6%	7	2.9%	11		7
2yrs 1month - 3yrs	16	6.7%	6	2.5%	10	4.2%	6		10
3yrs 1month - 4yrs	9	3.8%	5	2.1%	4	1.7%	5		4
4yrs 1month - 5yrs	7	2.9%	3	1.3%	4	1.7%	2	1	4
5yrs 1month - 6yrs	3	1.3%	1	0.4%	2	0.8%	1		2

FEMALE ISSUES: Heat Cycles, Phantom Pregnancies, Pyometra & Urinary Incontinence:

- Of 142 female dogs in the survey, half were either sterilised prior to their first heat cycle, had not yet experienced a heat (puppies) or the information was unknown to the owners.
- Of 57 females who experienced a heat cycle of known age, only 2 or 3.5%, experienced a Pyometra and both were on their first heat cycle.
- 40 of the 57 females, or 70.2%, experienced their first heat cycle between the ages of 8 – 12 months.
- 61 females were sterilised prior to experiencing a heat cycle at all.
- 60.7% of the 61 females sterilised prior to their first heat cycle were sterilised at 6 or 7 months.

FIRST HEAT CYCLE & AGE	142 females		Pyometra
None experienced - sterilised prior to first heat	61	43.0%	
Unknown	17	12.0%	
Not yet - still young	7	4.9%	
6 months	4	2.8%	
7 months	3	2.1%	
8 months	7	4.9%	
9 months	7	4.9%	
10 months	9	6.3%	1
11 months	6	4.2%	
12 months	11	7.7%	
13 months	2	1.4%	
14 months	4	2.8%	
15 months	1	0.7%	1
16 months	0	0.0%	
17 months	0	0.0%	
18 months	1	0.7%	
2yrs	2	1.4%	



PHANTOM PREGNANCIES:

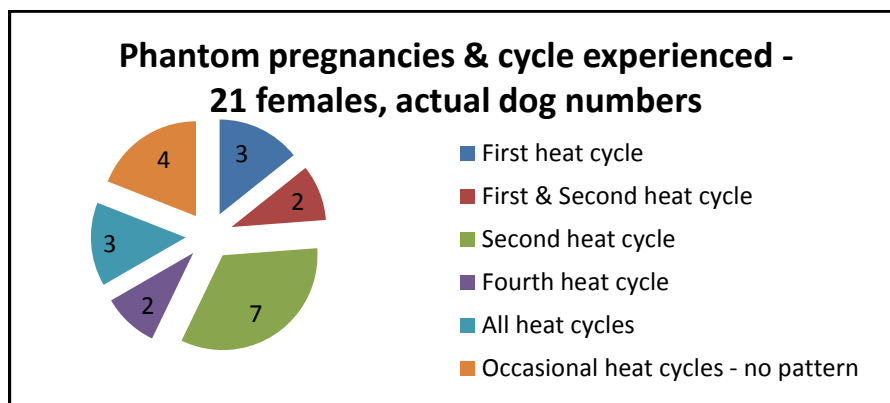
Of 142 female dogs, 57 or 40.1% experienced or are still experiencing heat cycles. Unsterilised female dogs may show 'phantom pregnancies' at some or all heat cycles which can be challenging for the family and sometimes the dog.

21 females, or 25.9% of the dogs that experienced or are still experiencing heat cycles had shown phantom pregnancies.

PHANTOM PREGNANCY	142 females	
Sterilised prior to first heat cycle	61	43.0%
Sterilised after first heat cycle but not had a Phantom Pregnancy	27	19.0%
Unsterilised but not had a Phantom Pregnancy	9	6.3%
Too young at survey time to measure	7	4.9%
Unknown	17	12.0%
Have experienced a Phantom Pregnancy once or more in life	21	14.8%

Excluding those females too young to have had a heat cycle, for the 57 females who are unsterilized, or were unsterilized past one or some heat cycles, **the prevalence rate of phantom pregnancies for unsterilized females is 36.8%** for this population.

Of the 21 females who had experienced phantom pregnancies, 17 or 81% had gone on to be sterilised by the survey period. There did not appear to be any correlation between the age of the first heat cycle and the occurrence, or reoccurrence of phantom pregnancies with even distribution across all ages of onset of heat cycle.



URINARY INCONTINENCE IN FEMALES:

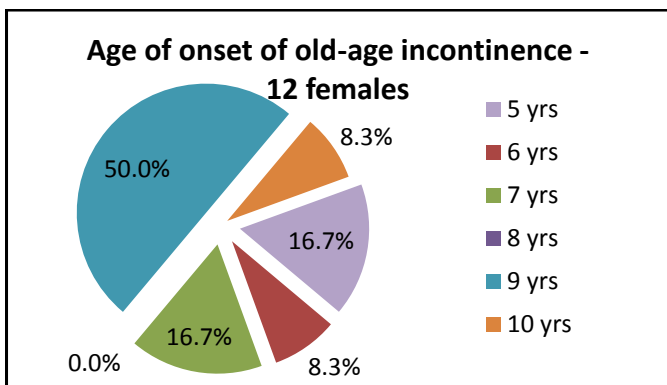
- 142 female dogs were included in the survey of which 25 or 17.6% suffered any level of urinary incontinence.
- **Old – age onset incontinence was limited to 12 or 8.5%** of all females surveyed.
- Post-sterilisation linked urinary incontinence occurred in 6 or 4.2% of females, with 5 of the 6 showing incontinence within 2-6 months of sterilisation.
- Medically caused incontinence was diagnosed in 7 or 4.9% of the females.

URINARY INCONTINENCE - FEMALES	142 females		Speyed 5 -11 months	Speyed 1yr - 2yrs 11 months	Speyed 3yrs - 4yrs 11months	Speyed over 5yrs	Not speyed or unknown age	Whelped
Never suffered any urinary incontinence unless linked to a UTI	117	82.4%	56	27	10	1	23	13
Old age onset	12	8.5%	7	2	1	2	0	4
Post-sterilisation	6	4.2%	2	4	0	0	0	0
Medical reasons (cancers, C.C.F. linked to DCM, allergies etc)	7	4.9%	6	1	0	0	0	0

Old-age urinary incontinence occurred in 8.5% of the female population with onset commencing in over 50% of those females, aged 9yrs or older.

Treatment regimes for urinary incontinence excluding medical issue onset, varied from no treatment to the use of hormone therapy. Of the 18 females with old-age or post-sterilisation onset of urinary incontinence, 8 or 44.4% of the females had continued & frequent hormone therapy prescribed to combat the issue.

Of 122 sterilised female Great Danes 79.5% of them had never or not yet experienced any urinary incontinence at all.



TREATMENTS FOR FEMALE URINARY INCONTINENCE, OLD AGE & POST-STERILISATION CAUSED	18 females	
No treatment deemed needed - very occasional incontinence	5	27.8%
Toileting regime only	1	5.6%
Anti-histamines prescribed	1	5.6%
Once only medication regime used then settled	3	16.7%
Continued, frequent medications (daily, weekly or less frequently but continued)	8	44.4%

BLOAT AND/OR GASTRIC DILATATION VOLVULUS:

Great Dane dogs, as a breed, display an 'above-average' prevalence for having bloat and/or GDV occur in their lifetime. For many owners, it is one of the greatest fears of loving a Great Dane. Research into the how's & why's of this medical crisis is plentiful yet there are still no absolutes available. Some owners rely on knowing family history, being prepared to look for the signs and acting quickly, sheer luck and some rely on using the prophylactic Gastropexy surgery to gain time and prevention of the torsion component of the GDV experience.

Of the population of 285 Great Dane's surveyed, 38 or 13.3% had had the Prophylactic Gastropexy surgery completed on them, prior to any bloat or GDV experience as a preventative measure.

PROPHYLACTIC GASTROPEXY PERFORMED	285 dogs	
Prophylactic Gastropexy done	38	13.3%
Males in survey pexied	15	5.3%
Females in survey pexied	23	8.0%

31 or 81.6% of the dogs pexied prophylactically were completed prior to turning 2yrs old and 27 or 71.1% of those were done at the same time as sterilisation.

A further 7 dogs surveyed will be prophylactically pexied when they are sterilised as reported by their owners.

2 were completed via laparoscopic methods and the remaining 36 were open abdominal surgery.

PROPHYLACTIC GASTROPEXY PERFORMED	38 dogs		With Sterilisation	Separate Procedure
6 months - 9 months	12	31.6%	11	1
10 months - 12 months	10	26.3%	9	1
1 yr 1month - 2yrs	9	23.7%	7	2
2 yr 1month - 3yrs	1	2.6%	1	0
3 yr 1month - 4yrs	3	7.9%	3	0
4 yr 1month - 5yrs	0	0.0%	0	0
5 yr 1month - 6yrs	1	2.6%	0	1
6 yr 1month - 7yrs	1	2.6%	0	1
7 yr 1month - 8yrs	1	2.6%	0	1

PROPHYLACTIC GASTROPEXY OUTCOMES:

Of the 38 dogs surveyed, who have been prophylactically gastropexied:

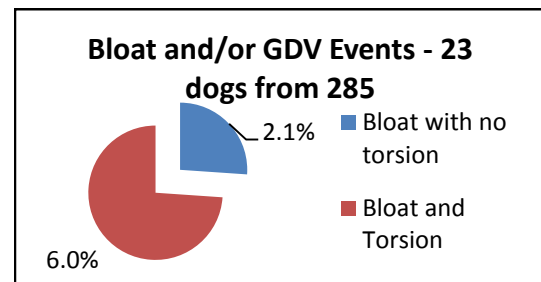
- 2 have experienced a bloat event.
- 1 was a minor event and the other has had multiple bloats but never proceeded to a torsion due to the Gastropexy tack.
- 2 of the pexied dogs have subsequently died, at 6yrs & almost 8yrs, both without incident from GDV or their prophylactic Gastropexy.
- 78.9% of the prophylactically pexied dogs had unremarkable post-op recoveries.
- 18.4% had some minor post-op issue from external wound opening to suture reaction then all proceeded to unremarkable recovery.
- 1 dog has had on-going post-pexy issues with meal retention & vomiting and continues to require a management programme for this acquired issue.

PROPHYLACTIC GASTROPEXY RECOVERY	38 dogs	
No post-op issues at all	30	78.9%
External suture line opened & required re-suturing	3	7.9%
External suture line opened slightly but did not need re-suturing	2	5.3%
Reaction to sutures & wound infection requiring antibiotics	1	2.6%
Bulge in suture line but fluid reabsorbed	1	2.6%
Post-op vomiting caused, requires frequent small meals since	1	2.6%

PREVALENCE OF ACTUAL BLOAT AND/OR GDV EVENT:

Of the 285 dogs surveyed, 23 or 8.1% have experienced a bloat and/or GDV event.

Of the 17 dogs that suffered a full GDV event, 3 were put to sleep prior to any life-saving surgery and 14 or 82.4% underwent a post-GDV Gastropexy.



BLOAT AND/OR GASTRIC DILATION VOLVULUS - OVERVIEW	23 dogs	
Had been previously prophylactically gastropexied & did not torsion	2	8.7%
Bloat only and was then prophylactically gastropexied	1	4.3%
Of the 17 dogs who torsioned	17 dogs	
Post GDV Gastropexy	14	82.4%
Post-op complications but went on to be stable	0	0.0%
Post-op complications and required on-going medical management	0	0.0%
Post-op complications causing death or death soon after linked to GDV	2	11.8%
No post-op complications and went on to be stable	6	35.3%
No post-op complications but left with ongoing medical/lifestyle issues	6	35.3%
Passed away from GDV without surgical intervention	3	17.6%
Of the 18 dogs who lived having bloated and/or torsioned	18 dogs	
Never re-bloated or not yet	14	77.8%
Re-bloated once but not causing death	0	0.0%
Re-bloated twice but not causing death	1	5.6%
Re-bloated multiple times but not causing death	3	16.7%
Of the 23 dogs who bloated and/or torsioned - known first-degree family members who also bloated	7	30.4%
NB - 3 of the 23 are rescue dogs with no known history or origins		

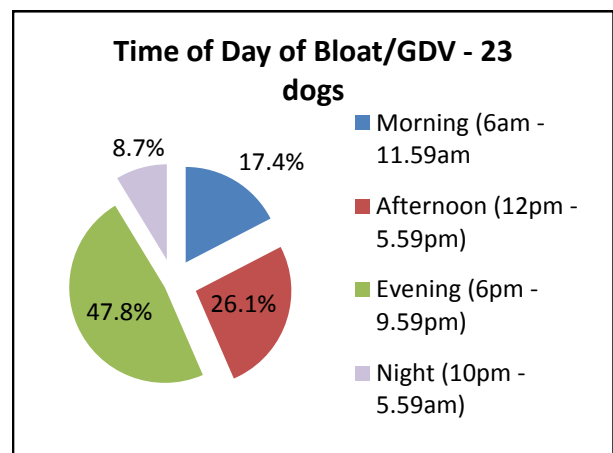
Bloat and/or GDV Event insights:

- **23 dogs experienced a bloat and/or GDV event giving a prevalence of 8.1% in this population.**
- 6 dogs experienced a bloat only and did not progress to torsion.
- 2 of the dogs who experienced a bloat had been Prophylactically Gastropexied. One was deemed as having been saved by the Prophylactic Gastropexy and the other's bloat was not severe.
- 17 dogs experienced a full GDV event.
- 3 dogs were euthanased based on age or poor prognosis post-op.
- The remaining 14 dogs had Gastropexies post-bloat.
- 2 of the 14 post-bloat pexied dogs passed away within days or weeks from GDV event complications
- 6 of the remaining 12 GDV event dogs who lived had/have ongoing medical issues linked to their GDV experience including organ damage.
- 6 of the remaining 12 GDV dogs who lived have had no further issues from their GDV event and/or post-bloat Gastropexy.
- Of the total 23 dogs, 56.5% were male and 43.5% were female.
- 13 of the 23 dogs, or 56.5%, were 5yrs old or older when they bloated and/or torsioned.
- 8 of the 10 dogs (80%) who bloated and/or torsioned prior to being 5 yrs old, were males.

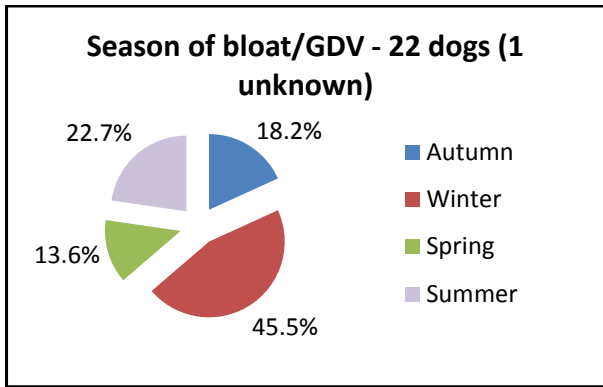
BLOAT AND/ OR GASTRIC DILATION VOLVULUS	23 dogs		Bloat		GDV		Male		Female		Death linked to GDV	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
< 12mnths old	1	4.3%	1	4.3%		0.0%		0.0%	1	4.3%		0.0%
1yr - 1yr 11mnths	3	13.0%	1	4.3%	2	8.7%	3	13.0%		0.0%		0.0%
2 yrs - 2yrs 11mnths	3	13.0%	1	4.3%	2	8.7%	2	8.7%	1	4.3%		0.0%
3 yrs - 3yrs 11mnths	1	4.3%		0.0%	1	4.3%	1	4.3%		0.0%		0.0%
4 yrs - 4yrs 11mnths	2	8.7%		0.0%	2	8.7%	2	8.7%		0.0%	1	4.3%
5 yrs - 5yrs 11mnths	2	8.7%		0.0%	2	8.7%	1	4.3%	1	4.3%		0.0%
6 yrs - 6yrs 11mnths	2	8.7%	1	4.3%	1	4.3%	1	4.3%	1	4.3%		0.0%
7 yrs - 7yrs 11mnths	3	13.0%		0.0%	3	13.0%	1	4.3%	2	8.7%	1	4.3%
8 yrs - 8yrs 11mnths	1	4.3%		0.0%	1	4.3%		0.0%	1	4.3%		0.0%
9 yrs - 9yrs 11mnths	2	8.7%	2	8.7%		0.0%	1	4.3%	1	4.3%		0.0%
10 yrs - 10yrs 11mnths	3	13.0%		0.0%	3	13.0%	1	4.3%	2	8.7%	3	13.0%
				26.1%		73.9%	13	56.5%	10	43.5%		21.7%

TIME OF DAY:

- Just under half, 47.8% of the events occurred in the evening between 6pm and 9.59pm.
- 26.1% of the events occurred in the afternoon between 12pm and 5.59pm.
- The remaining 6 dogs bloated and/or torsioned in the night hours of 10pm – 5.59am (2) and morning hours of 6am – 11.59am (4).

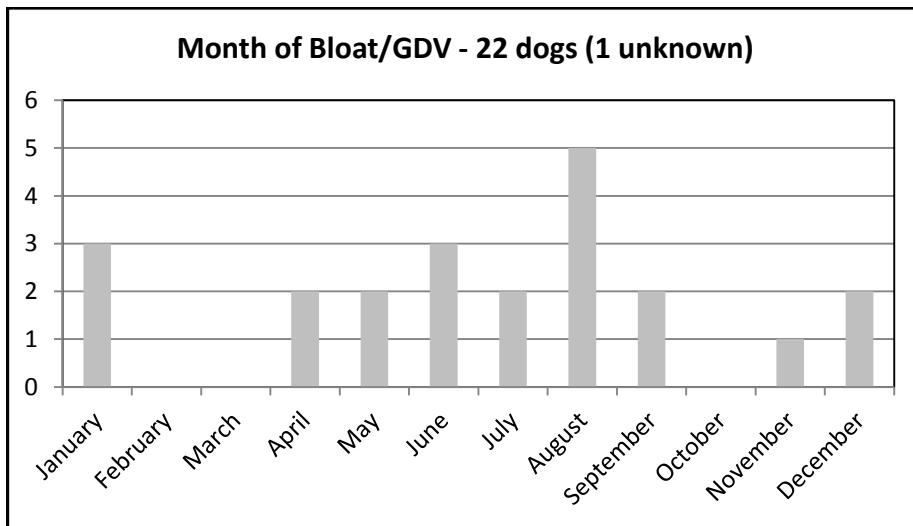


MONTH OR SEASON OF GDV EVENT:



NB: Seasons in Australia are: Autumn (March, April, May), Winter (June, July, August), Spring (September, October, November) and Summer (December, January, February).

- 10 or 45.5% of the bloat/GDV events occurred in Winter months with 5 of those occurring in the month of August.
- A further 22.7% or another 5 dogs suffered their event in Summer months of December or January.
- There were none recorded for February, March or October.
- One dog’s owner did not remember the exact month the GDV occurred but had all other details.
- The month of occurrence did not alter the time of day in relativity to the Group norm at all, with evenings holding highest prevalence.



ACTIVITY AROUND THE BLOAT/GDV EVENT:

15 of the 23 dogs, or 65.2%, were at home and nothing ‘out of the ordinary’ occurring and most owners described it as ‘same as every other day’.

- Almost half the dogs had eaten a normal meal and followed their usual post-meal pattern and were resting.
- Only 1 dog had owners away from home and 2 had other medical problems happening at the time which may have caused stress.
- 87% of the 23 dogs were NOT in any stressful situation at all and were calm when the symptoms arose.

BLOAT AND/OR GASTRIC DILATION VOLVULUS - EVENTS PRIOR	23 dogs	
Been for a normal walk	1	4.3%
Boarding or owners away from home	1	4.3%
Undergone/going another medical problem	2	8.7%
Sleeping (night or owners at work)	3	13.0%
Following a normal meal & usual post-meal pattern	10	43.5%
Just had a drink	1	4.3%
Normal relaxing at home	5	21.7%

DIET, EATING & PERSONALITY TYPES OF BLOAT/GDV DOGS:

- 91.3% of the dogs who bloated or torsioned were fed on an elevated basis.
- 73.9% of the bloat/GDV dogs were classified as 'calm, laidback' dogs.
- 65.2% of the bloat/GDV dogs were classified as 'normal pace' eating dogs.
- 78.3% of the bloat/GDV dogs were on a Dry Kibble diet with Extras.
- None of these criteria vary from the wider survey population 'norms' in percentage of each characteristic's prevalence by much at all except that there were more 'normal pace of eating' dogs who bloated and/or torsioned.

FEEDING POSITIONS OF THE 23 DOGS WHO BLOATED AND/OR TORSIONED	23	Bloat/GDV % of 23 dogs	Survey Group % of 285 dogs
Fed high	21	91.3%	85.3%
Fed on ground	2	8.7%	14.7%
PERSONALITY TYPES OF THE 23 BLOAT/GDV DOGS			
Calm, laidback, cruisy	17	73.9%	58.6%
Bouncy, energetic, happy	1	4.3%	18.9%
Stressy, nervy, reserved	5	21.7%	22.5%
EATING STYLE OF THE 23 BLOAT/GDV DOGS			
Scoffer	3	13.0%	27.7%
Normal	15	65.2%	43.5%
Slow	5	21.7%	28.8%
DIET TYPE OF THE 23 BLOAT/GDV DOGS			
Dry Kibble only	1	4.3%	6.3%
Dry Kibble with extras	18	78.3%	71.9%
Total Raw	2	8.7%	7.0%
Home based, less than 50% Dry Kibble	2	8.7%	11.2%

NB: There were 10 dogs from the 285, on a home diet with no kibble. No Bloat/GDV events were recorded for that group.

SYMPTOMS DISPLAYED:

- 23 dogs surveyed bloated and/or torsioned.
- Only one dog showed just one symptom, in this case a distended abdomen.
- 2 dogs or 8.7%, showed only 2 of the classic symptoms of GDV.
- 16 dogs or 70%, showed 3 or 4 classic symptoms of GDV.
- 4 dogs or 17.4% showed 5 or 6 classic symptoms of GDV.
- 16 dogs had distended abdomens, or very tight/hard to the touch.
- The appearance of pain or being 'different', unhappy or restless was described by many owners and was seen to be a not-the-norm behaviour.
- All dogs were taken to vet care in time based on their recognition of symptoms.

BLOAT AND/OR GASTRIC DILATION VOLVULUS - SYMPTOMS DISPLAYED	23 dogs	
Seemed Uncomfortable /listless /desperate	14	60.9%
Anxious/ nervy	4	17.4%
Trying to vomit/ Dry retching	6	26.1%
Foamy retching	2	8.7%
Head hanging down	7	30.4%
Stomach/ abdo tight or hard but not distended	4	17.4%
Stomach Distended and/or hard	12	52.2%
Restless / Pacing	7	30.4%
Not wanting to move much	2	8.7%
Salivating / Drooly	3	13.0%
Frothy mouth	1	4.3%
Whining	0	0.0%
Reluctant to lay down	6	26.1%
Wanting to lay down on side	4	17.4%
Hunching stance	4	17.4%
Panting	0	0.0%
Seems to be in pain	7	30.4%

ENDOCRINE CONDITIONS:

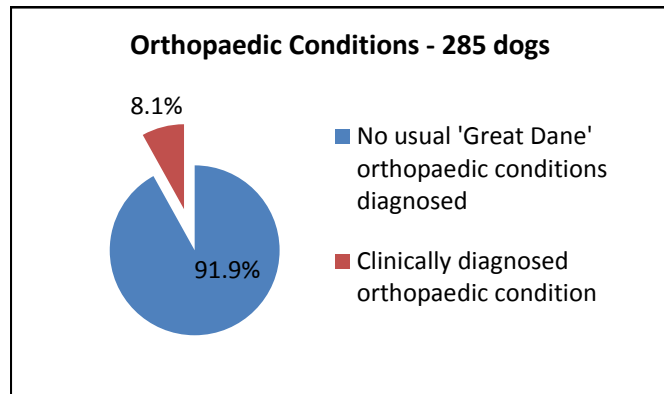
All dogs were surveyed for the clinical diagnosis of Endocrine conditions such as Addison's, Cushings or any form of Thyroid problems.

None of the 285 dogs surveyed had ever been diagnosed with any Endocrine problems at all.

ORTHOPEADIC CONDITIONS:

The Great Dane breed is known for a predisposition for exhibiting a collection of orthopaedic problems, some inheritable and some acquired. The 285 dogs surveyed were questioned for clinical diagnosis of the following orthopaedic problems:

- Hip Dysplasia
- Hypertrophic Osteodystrophy (HOD)
- Osteochondritis Dissecans (OCD)
- Panosteitis
- Wobblers Disease



Of the 285 dogs surveyed, only 23 or 8.1%, had been diagnosed with any of the usual Great Dane orthopaedic conditions although some had more than one condition.

Almost 92% of the dogs surveyed were free from these conditions.

The prevalence ratio for this population of Great Danes shows an incidence, by orthopaedic issue, from 285 dogs of:

- HOD presence: 1.4%
- OCD presence: 1.4%
- Hip Dysplasia presence: 2.5%
- Panosteitis: 0.7%
- Wobblers Disease: 3.2%

ORTHOPEADIC CONDITIONS DIAGNOSED BY TYPE, OF TOTAL POPULATION SURVEYED.	285 dogs	
HOD	4	1.4%
OCD	1	0.4%
OCD & Joint Mice	1	0.4%
OCD & Hip Dysplasia	2	0.7%
Hip Dysplasia	4	1.4%
Hip Dysplasia & Wobblers	1	0.4%
Panosteitis	2	0.7%
Wobblers	8	2.8%
	23	8.1%

Orthopaedic conditions impact on the life expectancy of all dogs but the skeletal framework is the mainstay of the Great Dane breed as mobility for a giant dog is critical. Some dogs may have these conditions but have not been diagnosed until older age when their impact becomes more evident, however they are generally diagnosed quite early in life.

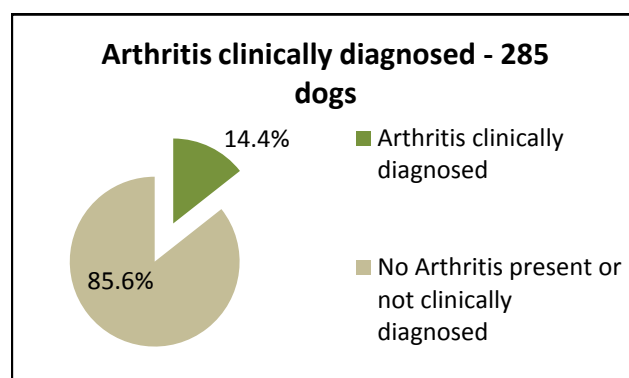
- 56.5% of the conditions were diagnosed in the 23 dogs before adulthood, which is classed as 2yrs old for Great Danes.
- 78.3% of the conditions were managed with conservative methods for these dogs.
- Two of the dogs were put to sleep, one as a juvenile and one as a senior, with poor prognosis of overcoming their condition.
- A further 4 dogs died from complications from their diagnosed orthopaedic condition but had lived to ages varying from almost 4yrs through to almost 8yrs old.
- *The remaining 73.9% of dogs are either still alive or passed away from another medical condition totally unrelated to their orthopaedic diagnosis.*

ORTHOPAEDIC CONDITIONS AND AGE DIAGNOSED									
	Age Diagnosed						Treatment Modality		
	< 12mths	1yr 1m - 2yrs	2yrs 1m - 3yrs	3yrs 1m - 4yr	4yr 1m - 5yr	5yr 1m +	Surgical Treatment	Medical Management	PTS
HOD	3	1						3	1
OCD						1		1	
OCD & Joint Mice			1					1	
OCD & Hip Dysplasia	1		1				1	1	
Hip Dysplasia	2		1			1	1	2	1
Hip Dysplasia & Wobblers			1				1		
Panosteitis	2							2	
Wobblers	2	2		2	1	1		8	
	10	3	4	2	1	3	3	18	2
	43.5%	13.0%	17.4%	8.7%	4.3%	13.0%	13.0%	78.3%	8.7%

ARTHRITIS:

Arthritis can be brought on in Great Danes from injury, wear & tear or from a predisposing orthopaedic condition. **In the surveyed population of 285 Great Danes, only 14.4% of dogs had been clinically diagnosed with Arthritis**

- Given that the Great Dane breed is a heavy dog and may be considered more at risk of joint issues, it is heartening to see that less than 15% of the population exhibited arthritis at this time.
- 81.8% of the entire survey population were over the age of 2yrs old and therefore considered adults.
- 77 dogs or 27% were over the age of 4yrs & 1 month and could be considered at the 'at-risk' age group of joint damage or decay.
- 14.4% or 41 dogs surveyed had been clinically diagnosed with Arthritis.



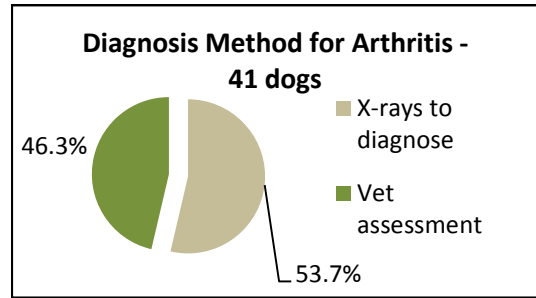
DIAGNOSIS & TREATMENT METHODS FOR ARTHRITIS:

Almost 54% of the 41 dogs were x-rayed to confirm the presence of arthritis in joints. Some of the x-ray events were for other reasons and arthritis was diagnosed from the findings.

Treatment regimes for the diagnosed arthritic dogs varied across conservative and medical but **80.5% of the 41 dogs are/were receiving some medication therapy for their arthritis.**

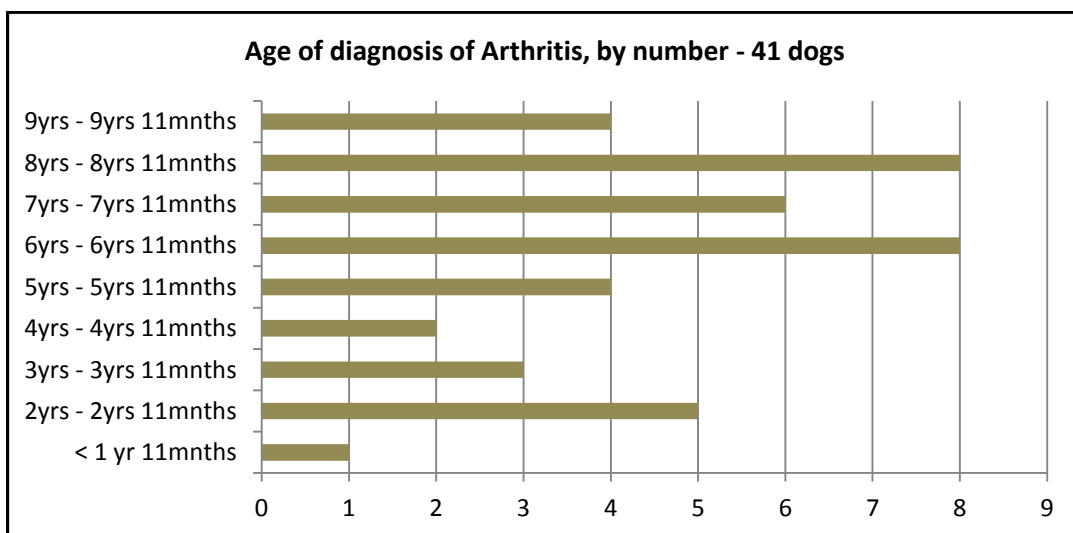
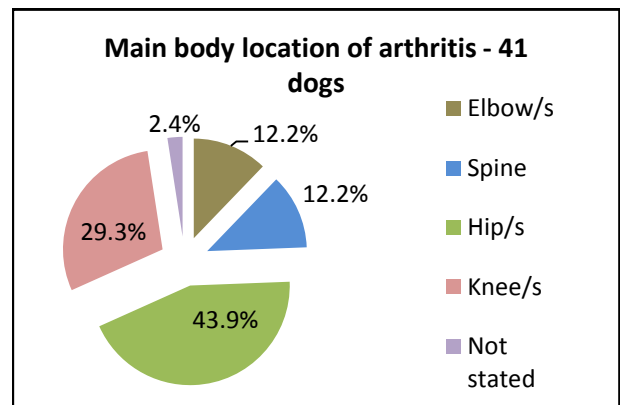
Arthritis was not prevalent by either sex with 21 males and 20 females of the group of 41 dogs being almost evenly split.

ARTHRITIS TREATMENT MODALITIES	41 dogs	
Cartrophen/Zydax Regimes	20	48.8%
Other Meds and/or pain relief	13	31.7%
Holistic: Diet/ supplements/ acupuncture/massage/Bowen)	6	14.6%
No treatments needed yet - very mild	1	2.4%
No treatments - diagnosed alongside serious medical issue & euthanized	1	2.4%



AGE DIAGNOSED & JOINTS AFFECTED BY ARTHRITIS:

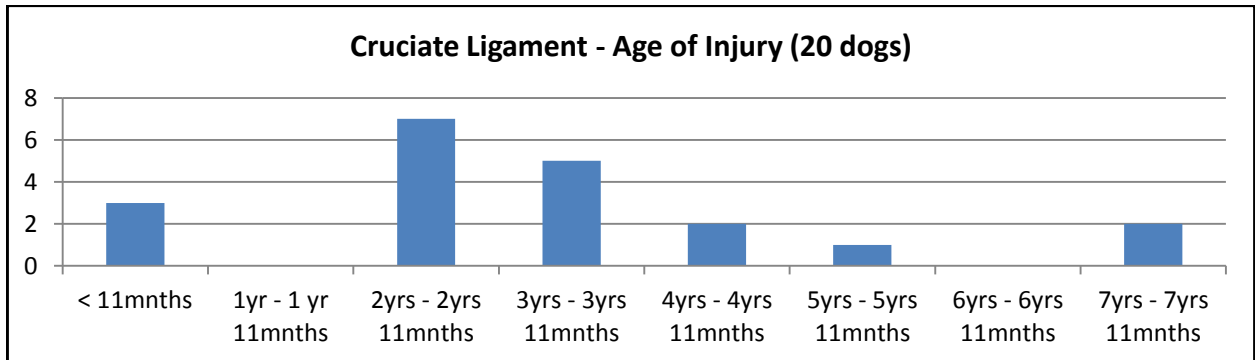
- 73.2% of the arthritic dogs had arthritis in weight bearing joints such as the knees (29.3%) and hips (43.9%) as the main location.
- Of the 41 dogs with arthritis diagnosed, 14 or 34.1% had either an accompanying orthopaedic condition or a cruciate ligament injury, or both.
- Of the 7 dogs with an accompanying Orthopaedic condition, their orthopaedic problem was either Hip Dysplasia or in 2 cases, OCD.
- **30 of the 41 (73.1%) Great Danes diagnosed with Arthritis were diagnosed at or over the age of 5yrs old.**



CRUCIATE LIGAMENT INJURIES:

CCL or Cruciate Ligament injuries are a challenge for all dogs surgically and for the rehabilitation, but even more so for Great Dane dogs where size, mobility and even containing for post-op recovery can be challenging.

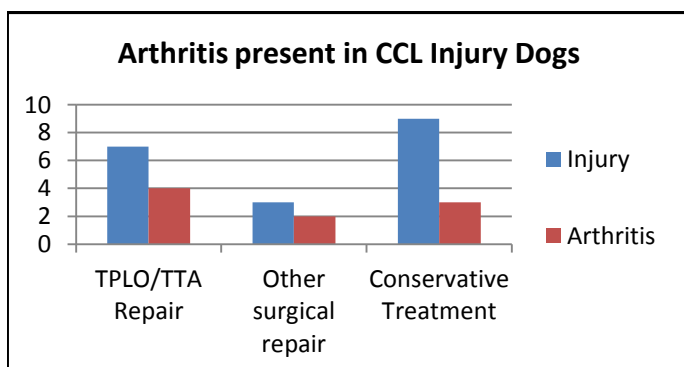
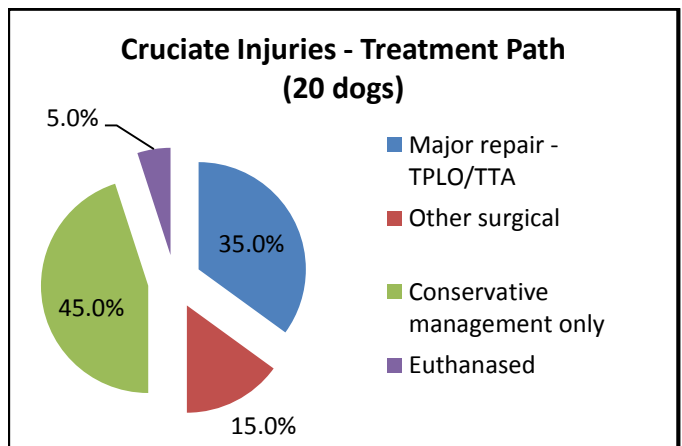
- **Of the 285 dogs surveyed, 93% had never suffered a cruciate injury of any kind.**
- 20 dogs or 7% had injured a cruciate either with a full or partial tear.
- 14 or 70% of the cruciate injuries were females and 6 or 30% were males.
- 10 or 50% of the cruciate injury dogs were sterilised prior to 12 months old, 7 females and 3 males.
- *17 or 85% of the dogs who suffered a cruciate injury, did so as young or adult dogs, before turning 5yrs old.*
- The highest point of injury, for this population was between the ages of 2yrs and 4yrs old, with 12 of the 20 dogs enduring their injury in this age group.



TREATMENT MODALITIES:

Cruciate repairs vary according to many more medical criteria than can be addressed in this survey and depends upon prognosis for recovery, accompanying medical conditions, capability to cope with rehabilitation from major orthopaedic surgery and other elements.

- 50% or 10 of the 20 dogs, with cruciate injuries were surgically repaired with 35% of those having major reconstructive surgery.
- 45% or 9 of the 20 dogs, with cruciate injuries were conservatively managed without surgical repairs of any kind.
- 1 dog was euthanized due to a severe Hip Dysplasia also being found at xrays and very poor prognosis of recovery.
- 25% or 5 of the 20 dogs, with cruciate injuries, also injured their second leg.



- Of the 19 dogs that lived, 9 or 47.4% of the CCL injury dogs, have gone on to develop arthritis.
- It is important to note that 4 of the 9 Conservative Treatment dogs that appear to be showing no arthritis at present, were very recent injuries to the survey time and are all partial tears, at this time.

HEART CONDITIONS:

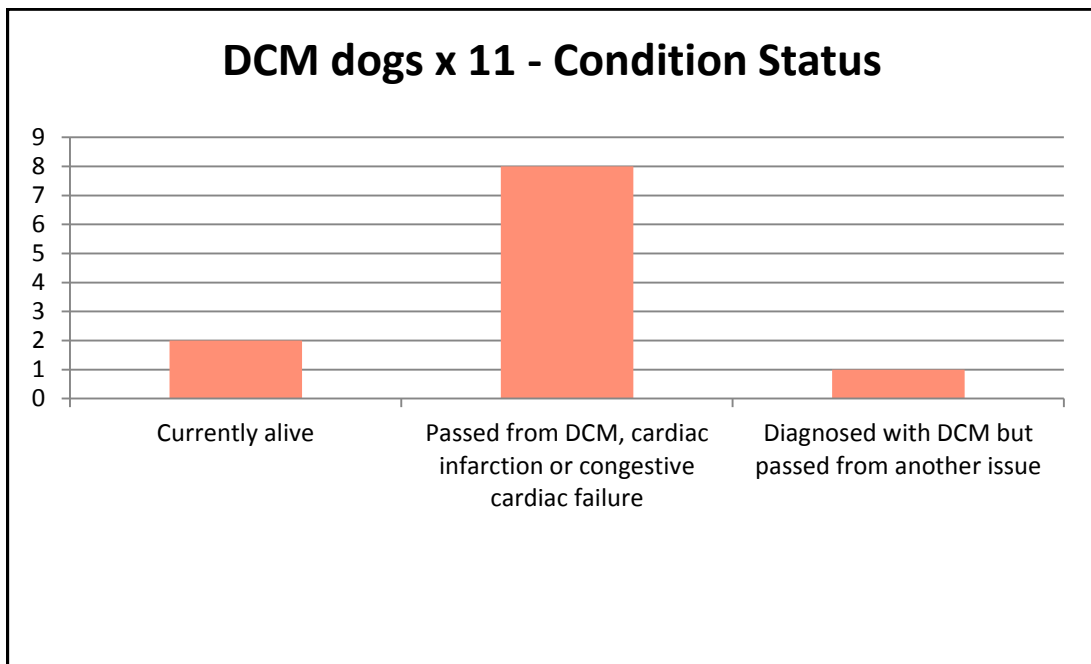
The most concerning Great Dane heart condition is Dilated Cardiomyopathy (DCM) which is typically an inheritable condition. Heart murmurs are also not unknown in the Great Dane breed.

- **91.2% of all great Dane’s surveyed did not have any heart issues clinically diagnosed at all.**
- 3.2% of the 285 dogs had a heart murmur diagnosed.
- 3.9% of the 285 dogs had DCM diagnosed.
- 1.8% of the dogs had another heart issue diagnosed.

HEART CONDITIONS	285 dogs	
No known heart issues ever diagnosed	260	91.2%
Heart Murmur identified	9	3.2%
Dilated Cardiomyopathy diagnosed	11	3.9%
Other heart condition diagnosed	5	1.8%

HEART CONDITIONS - AGE OF DIAGNOSIS (25 dogs)			DCM
< 11mnths	3	12.0%	
1yr - 1 yr 11months	3	12.0%	
2yrs - 2yrs 11months	3	12.0%	
3yrs - 3yrs 11months	2	8.0%	
4yrs - 4yrs 11months	2	8.0%	1
5yrs - 5yrs 11months	3	12.0%	2
6yrs - 6yrs 11months	1	4.0%	1
7yrs - 7yrs 11months	3	12.0%	3
8yrs - 8yrs 11months	1	4.0%	
9yrs - 9yrs 11months	4	16.0%	4

- 44% or 11 dogs, had their heart issues diagnosed by the age of 4yrs old, generally picked up in yearly health checks and/or surgical procedures common to the young dog like sterilisation.
- The 11 DCM dogs were diagnosed starting from the ages of 4+yrs which reflects the normal onset of the disease process.
- None of the 285 dogs in the survey had been diagnosed with Juvenile DCM.
- 7 or 63.6% of the DCM dogs were on heart medication regimes for management or prevention of congestive cardiac failure.
- 4 or 26.4% of the DCM dogs were diagnosed with DCM at the critical congestive cardiac failure point and were euthanized.



CANCERS:

From the surveyed population of 285 dogs, there was a prevalence of 10.2% or 29 dogs, with a clinically diagnosed Cancer variant.

- One dog was diagnosed with two different forms of cancer in her life. The first was successfully put into remission with chemotherapy for 5 yrs before a second form of cancer was diagnosed. This dog has been counted as one dog for the survey.
- Osteosarcoma was the hands-down winner in the prevalence stakes with 11 of the 29 dogs (37.9% of all cancer sufferers) having been diagnosed with that cancer form.
- In this population, osteosarcoma was almost 4 times more prevalent than any other form of cancer.
- **Just 10% of all dogs in the survey were diagnosed with cancer but if cancer was diagnosed, osteosarcoma was most likely to be the form acquired.**

CANCERS DIAGNOSED	285 dogs	
No cancer variants ever diagnosed	256	89.8%
Cancer variant diagnosed	29	10.2%
<i>NB: One dog had 2 forms of cancer in its life, remission from first variant</i>		

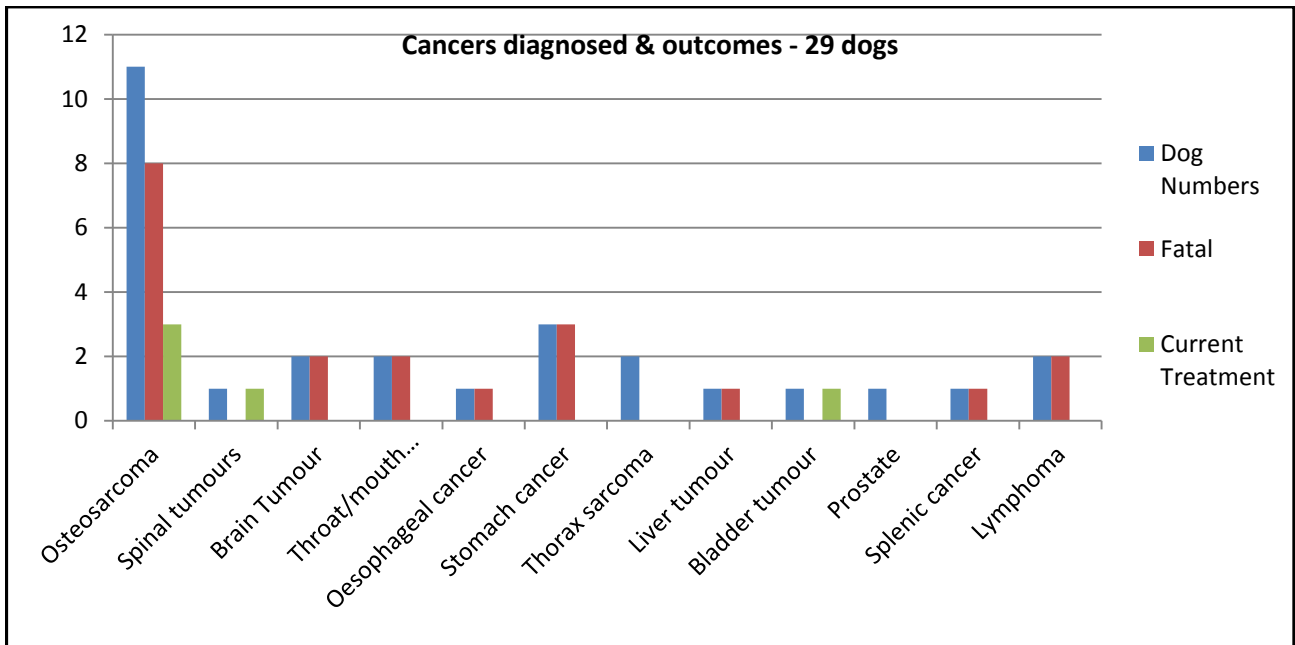
AGE OF DIAGNOSIS:

- 9 dogs or 31% of the 29 dogs diagnosed with cancer, were diagnosed prior to 5yrs old, which is considered 'senior years' for Great Danes.
- 8 of the younger dogs diagnosed prior to turning 5yrs old, died because of their diagnosis.
- 4 of the 8 young dogs with cancer that were diagnosed prior to turning 5yrs old, were diagnosed with osteosarcoma.
- **20 of the 29 dogs, or 69%, were diagnosed after turning 5yrs old with 11 of those 20 dogs being diagnosed after turning 8yrs old.**
- Of the 29 diagnosed cancer dogs, only 3 had variants that were treated and caused no further issues and 5 dogs are currently being treated for their cancer diagnosis.

CANCER - AGE OF DIAGNOSIS (29 dogs)			Euthanized due to poor prognosis	Fatal despite treatment	Current treatment in place	Treated & no further issues
1yr - 1 yr 11mnths		0.0%				
2yrs - 2yrs 11mnths	2	6.9%		1		1
3yrs - 3yrs 11mnths	2	6.9%	1	1		
4yrs - 4yrs 11mnths	5	17.2%	5			
5yrs - 5yrs 11mnths	1	3.4%		1		
6yrs - 6yrs 11mnths	5	17.2%	1		3	1
7yrs - 7yrs 11mnths	3	10.3%	1		1	1
8yrs - 8yrs 11mnths	6	20.7%	2	3	1	
9yrs - 9yrs 11mnths	2	6.9%	2			
10yrs - 10yrs 11mnths	2	6.9%	1	1		
11yrs - 11yrs 11mnths		0.0%				
12yrs - 12yrs 11mnths		0.0%				
13yrs - 13yrs 11mnths	1	3.4%	1			
	29		14	7	5	3

Almost any version of cancer can strike a dog as readily as a human being and some cancers are recognised as more prevalent than others, and some more prevalent to certain breeds. Veterinary medicine offers many curative, rescue or palliative measures to pet owners now but in all cases, the family must make decisions on quality of life as well as medical intervention. It is the sad lot of any pet lover that most won't outlive their humans!

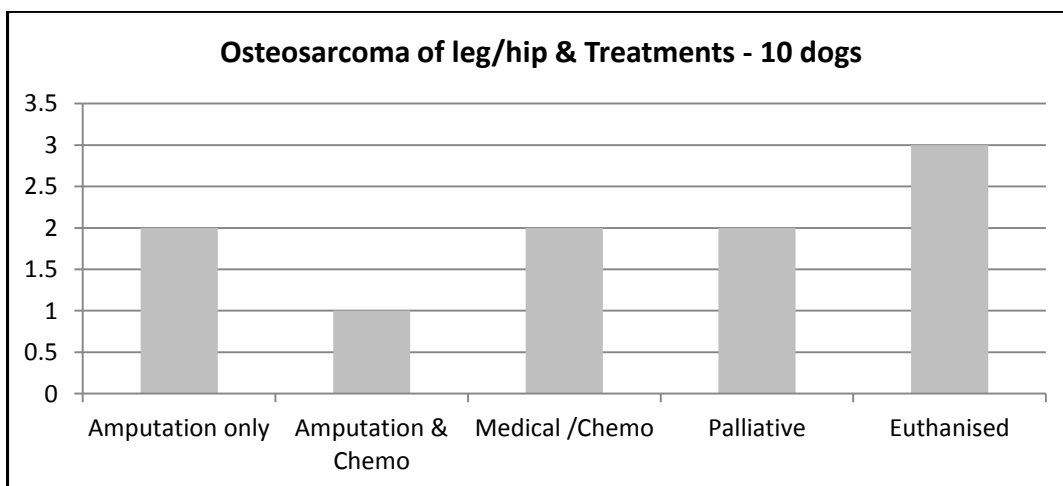
Sadly, most of the cancer diagnosis **for this group** is equally matched with a fatal outcome. Some were a natural attrition of the disease process and/or final failure of treatment modalities to fight the disease, and others as a gift of euthanasia, from their loving owners where the fight would compromise quality of life.



OSTEOSARCOMA:

Osteosarcoma as a cancer variant is often touted as more prevalent in the Great Dane breed and this survey population bears out that it held the greatest presence of the cancers diagnosed. A variety of treatment or outcome methods applied to the 11 of 29 dogs that had Osteosarcoma diagnosed.

- 1 of the 11 dogs had osteosarcoma of the skull.
- 10 of the 11 dogs had osteosarcoma of the leg or hip bones.
- *The term 'leg or hip' refer in layman's terms to the general location as these cancers are more commonly found in the long bones of the limbs.*
- 3 of the 10 leg/hip osteosarcoma dogs had amputations with 1 having chemotherapy as an adjunct therapy.
- 2 were treated medically only & 2 were treated palliatively only.
- 3 were euthanized as the diagnosis was made when the disease process was too advanced.



CROSS-MATCHING THE OSTEOSARCOMA DIAGNOSIS WITH PREDISPOSING FACTORS:

Many Great Dane owners are told that sterilising giant breeds young can be a predisposing risk factor for osteosarcoma occurring. There are many & varied clinical reports that speak to this risk factor available.

Given this predisposition, the Osteosarcoma dogs were cross-matched against other data collected to give a more specific data view.

- 11 of the 29 dogs diagnosed with cancer, were diagnosed with Osteosarcoma.
- 63.6% of the Osteosarcoma dogs were male and 36.4% were female.
- All of the dogs had been sterilised.
- 9 of the 11 dogs diagnosed with Osteosarcoma (81.8%) were sterilised prior to the age of to 12 months old with 2 of the 9 (18.1%) sterilised at 6 months or younger.
- 9 of the 11 dogs had an adult weight of 70kg or more and would be classed as bigger Great Danes.
- **5 of the 11 dogs (45.5%) had familial links with first and/or second degree relatives in common.**

OSTEOSARCOMA CROSSMATCH AGAINST SEX & STERILISATION AGE – 11 DOGS DIAGNOSED				
Female	4	36.4%		
Male	7	63.6%		
Sterilisation Age			Male	Female
6mnths or <	2	18.2%	2	
7 - 9mnths	5	45.5%	3	2
10 - 12mnths	2	18.2%	1	1
13 - 15mnths	0	0.0%		
16 - 18mnths	1	9.1%		1
19 - 23mnths	0	0.0%		
2yrs +	1	9.1%	1	

Does early-sterilisation predispose giant breeds to Osteosarcoma?

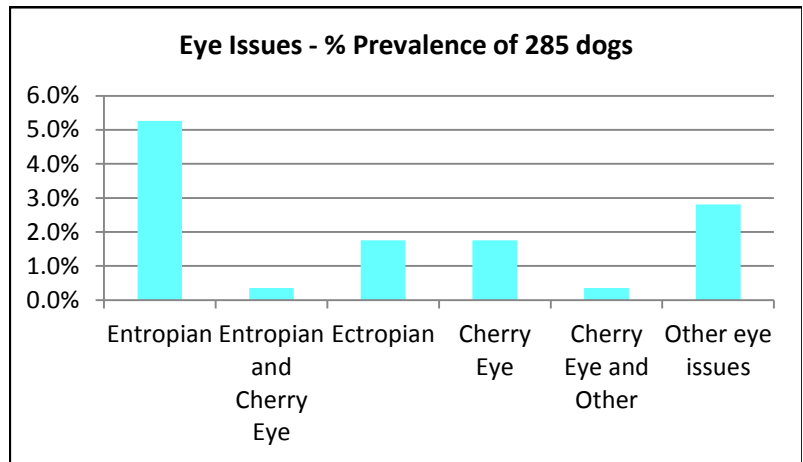
- 238 or 83.5% of the 285 dogs surveyed were sterilised.
- **21.4% of the total sterilised population were sterilised by 6 months old and 4.3% of those dogs had Osteosarcoma.**
- The highest prevalence percentage was in the 7 month sterilised group where 13% of the dogs sterilised at that age resulted in being diagnosed with Osteosarcoma however, the 7 month sterilisation group overall was only 9.7% of the entire population.

STERILISATION AGES 238 dogs sterilised from 285 dogs surveyed			Male		Osteo sarcoma	Female		Osteo sarcoma	% of sterilised population diagnosed with Osteosarcoma
Unknown	8	3.4%	5	2.1%		3	1.3%		0.0%
3 months	1	0.4%	1	0.4%		0	0.0%		0.0%
5 months	3	1.3%	1	0.4%		2	0.8%		0.0%
6 months	47	19.7%	22	9.2%	2	25	10.5%		4.3%
7 months	23	9.7%	10	4.2%	1	13	5.5%	2	13.0%
8 months	13	5.5%	5	2.1%	1	8	3.4%		7.7%
9 months	9	3.8%	1	0.4%	1	8	3.4%		11.1%
10 months	13	5.5%	4	1.7%		9	3.8%	1	7.7%
11 months	12	5.0%	8	3.4%		4	1.7%		0.0%
12 months	13	5.5%	9	3.8%	1	4	1.7%		7.7%
1yr 1month - 1yr 6months	43	18.1%	24	10.1%		19	8.0%	1	2.3%
1yr 7months - 2yrs	18	7.6%	11	4.6%	1	7	2.9%		5.6%
2yrs 1month - 3yrs	16	6.7%	6	2.5%		10	4.2%		0.0%
3yrs 1month - 4yrs	9	3.8%	5	2.1%		4	1.7%		0.0%
4yrs 1month - 5yrs	7	2.9%	3	1.3%		4	1.7%		0.0%
5yrs 1month - 6yrs	3	1.3%	1	0.4%		2	0.8%		0.0%

EYE ISSUES:

The most common eye ailments in the Great Dane breed appear to be Entropion, Ectropion and Cherry Eye so the survey population was questioned on the clinically diagnosed presence of these key issues and any other eye afflictions.

- Of the 285 dogs surveyed, 87.7% or 250 of the 285 dogs did not have any medical eye issues at all.
- 5.7% or 16 dogs had diagnosed Entropion, one with accompanying Cherry Eye.
- 1.8% or 5 dogs had diagnosed Ectropion.
- 2.2% or 6 dogs had diagnosed Cherry Eye (not including the 1 dog already classified into the Entropion category). One of the six Cherry Eye dogs also had another structural issue with the eye.
- 2.8% or 8 dogs had other eye issues outside the core Great Dane breed issues.

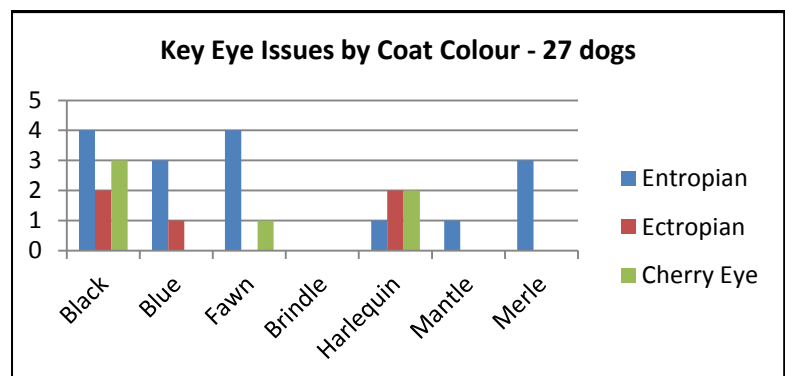


TREATMENT MODALITIES:

- Of the 35 dogs clinically diagnosed with eye issues of one sort or another, 48.6% or 17 dogs required surgical correction or intervention.
- 18 of the dogs or 51.4% with diagnosed eye issues are conservatively managed which may include the use of medicaments.

EYE ISSUES & TREATMENT PATHS	35 dogs	
Entropion - surgically corrected	10	28.6%
Entropion - no issues or conservative management, may include meds	5	14.3%
Entropion & Cherry Eye - surgically corrected	1	2.9%
Entropion & Cherry Eye - no issues or conservative management, may include meds	0	0.0%
Ectropion - surgically corrected	1	2.9%
Ectropion - no issues or conservative management, may include meds	4	11.4%
Cherry Eye - surgically corrected	0	0.0%
Cherry Eye - no issues or conservative management, may include meds	5	14.3%
Cherry Eye & Other structural issue - surgically corrected	1	2.9%
Cherry Eye & Other structural issue - no issues or conservative management, may include meds	0	0.0%
Other eye issues - surgically corrected or managed	4	11.4%
Other eye issues - no issues or conservative management, may include meds	4	11.4%

- **Of the 27 dogs clinically diagnosed with eye issues such as Entropion, Ectropion and Cherry Eye, the Blacks, Fawns and Harlequins make up 70.3% of this population.**
- Blacks, Fawns & Harlequins made up 64.2% of the whole survey population so appear to be slightly over-represented in eye issues.

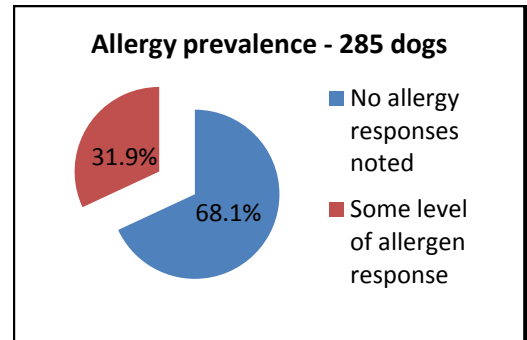


ALLERGIES:

Allergies in the 285 Great Danes surveyed was the issue with the highest prevalence rate with 91 dogs or 31.9% of all Danes having some clinically diagnosed allergen response.

Assessment and Management:

- Of the 91 dogs in the survey who suffer with allergies, 31 or 34.1% have undergone specialised testing and/or elimination testing.
- The remaining 65.9% of the dogs have had Vet Clinic assessments and treatments.
- **84.6% or 77 of the 91 allergy dogs require some level of medicament therapy either on an adhoc or ongoing basis.**



ALLERGIES – TESTING & TREATMENTS	91 dogs	
Specialised testing completed (Allergen testing, skin scrapings, elimination testing)	31	34.1%
Vet clinic assessed & treated	60	65.9%
Medicaments (topical, injections and/or ingestibles) required	77	84.6%

ALLERGENS BY CATEGORY:

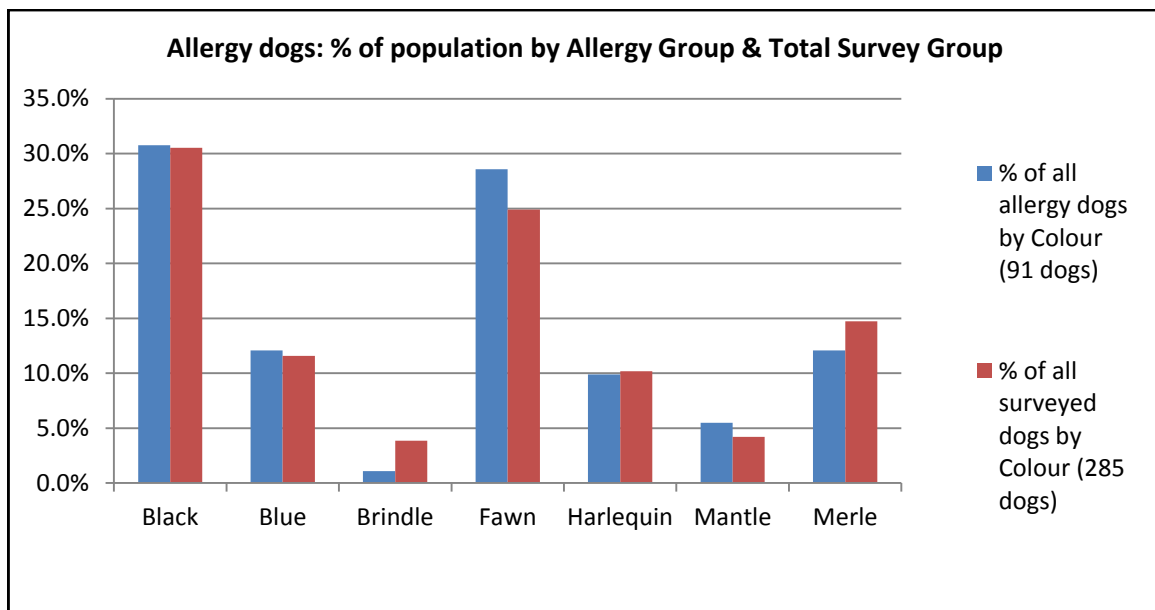
- Grasses/Pollens/Other Allergens was the largest group of irritants by far. 37 or 40.7% of the 91 dogs with diagnosed allergic responses were in this category.
- **94.6% of the dogs with these allergies (Grasses/Pollens/Others) require some sort of medications or topical treatments.**
- Adding those dogs with Grasses/Pollens allergies and/or Food or Insect allergies as well, the number grew to 58 or 63.7% of the 91 allergy dogs with 96.6% of those 58 dogs requiring medications of some sort.
- Food allergies had a much lower prevalence and excluding those with Grasses/Pollen allergies, 78.6% were rectified with dietary changes only. Only 2 dogs required medications for food allergies. One is currently undergoing elimination testing.
- 100% of Insect allergy dogs required medication excluding the one dog that died of anaphylaxis.
- 34 or 37.4% of the allergen dogs have seasonal impacts with Spring/Summer being a greater irritant period.

ALLERGY DOGS BY CATEGORY OF ALLERGEN	91 dogs		Diet Change Only	Meds Required
Food Only	14	15.4%	11	2
Food and Grasses/Pollens Only	13	14.3%		13
Food and Grasses/Pollens and Insects	3	3.3%		3
Grasses/Pollens Only	37	40.7%		35
Grasses/Pollens and Insects	5	5.5%		5
Insects Only (includes Demodex x 6 cases)	16	17.6%		16
Insects and Foods Only	0	0.0%		
Insects, one-of cases reported including anaphylactic death x 1	3	3.3%		2
			11	76

DOES 'COAT COLOUR' MATTER IN GREAT DANES FOR 'ALLERGY PROOFING':

It would seem not at all! Whilst the Brindles were under-represented in allergy percentages versus group norm percentages, the population in the survey was very tiny at 11 dogs.

- Blacks, Blues and Mantles were very slightly over-represented on an allergy percentage.
- Fawns were the highest over representation having 28.6% of the Allergy Group and 24.9% of the Whole Survey Group.
- Harlequins were slightly under-represented in the Allergy Group for their numbers in the Whole Survey Group.
- Merles were second to the Brindle sub-set as under-represented in the Allergy Group for their numbers in the Whole Survey Group.



Allergies in dogs can be very hard to categorise unless specialised testing is completed. Just over one third of the dogs in this survey population had undergone specialised testing where clear allergen responses had been identified. The remaining dogs had been assessed and treated with veterinary clinic care but their allergies may have a broader base than just those identified by the owner and/or Vet.

Only those dogs with some level of clinical assessment completed, were included as 'allergy sufferers'.

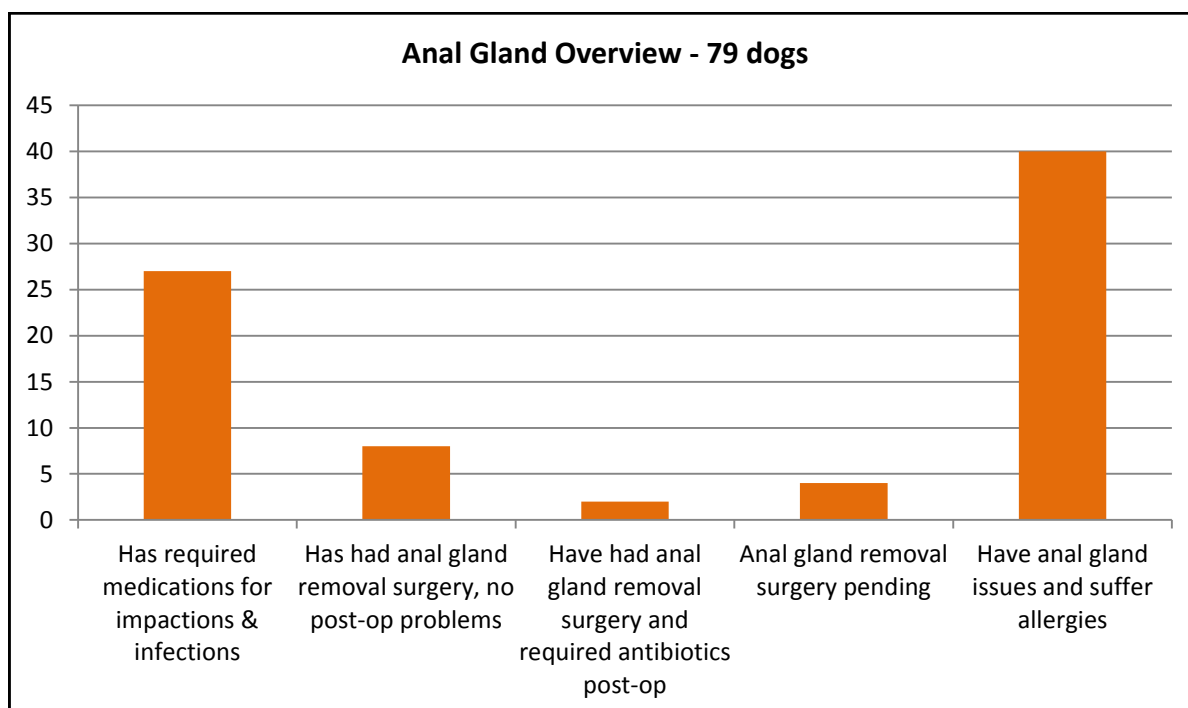
49 of the 91 dogs with any level of clinically assessed allergy, or 53.8% of allergic dogs, also had pet insurance.

ANAL GLANDS:

Anal gland issues were questioned for frequency of expression, impaction or infection and whether anal gland removal had occurred for the dogs.

- Of the 285 dogs surveyed, 79 dogs or 27.7% of them had experienced an anal gland expression, impaction or need for expression.
- **72.3% of all dogs had never had that experience and no anal gland issues at all.**
- 27 of the 79 dogs with anal gland activity, or 34.2% have required vet work which may have included medications.
- 10 dogs or 12.6% of the 79 dogs, have had impaction & infection levels so great that anal gland removal surgery was conducted.
- A further 4 dogs have surgery pending.
- For the 10 dogs that have had anal gland removal surgery, their recovery was unremarkable except that 2 required a further course of post-op antibiotics.
- **40 dogs or 50.6% of the anal gland issues population of 79 dogs also suffer allergies.**
- Of the 40 dogs that have anal gland issues and allergies, 28 or 70% of those dogs have allergies to grasses and pollens.

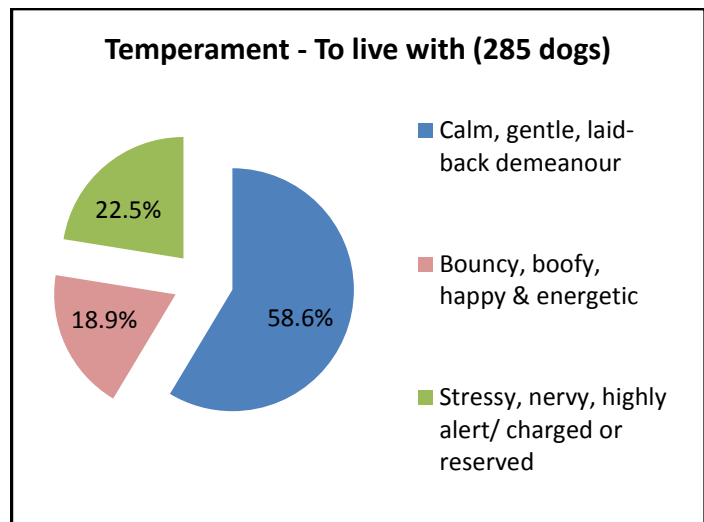
ANAL GLAND EXPRESSION, EXPLOSION OR IMPACTION FREQUENCY	79 dogs	
Once only in life	3	3.8%
Yes but diet change immediately effective and never again	4	5.1%
< 3 times in life	10	12.7%
Adhoc (not predictable but not frequently)	2	2.5%
Yearly	4	5.1%
Twice a year	9	11.4%
4 monthly	1	1.3%
3 monthly	12	15.2%
2 monthly	10	12.7%
6 weekly	3	3.8%
Monthly in Spring only	1	1.3%
Monthly	12	15.2%
Fortnightly	6	7.6%
Weekly	2	2.5%



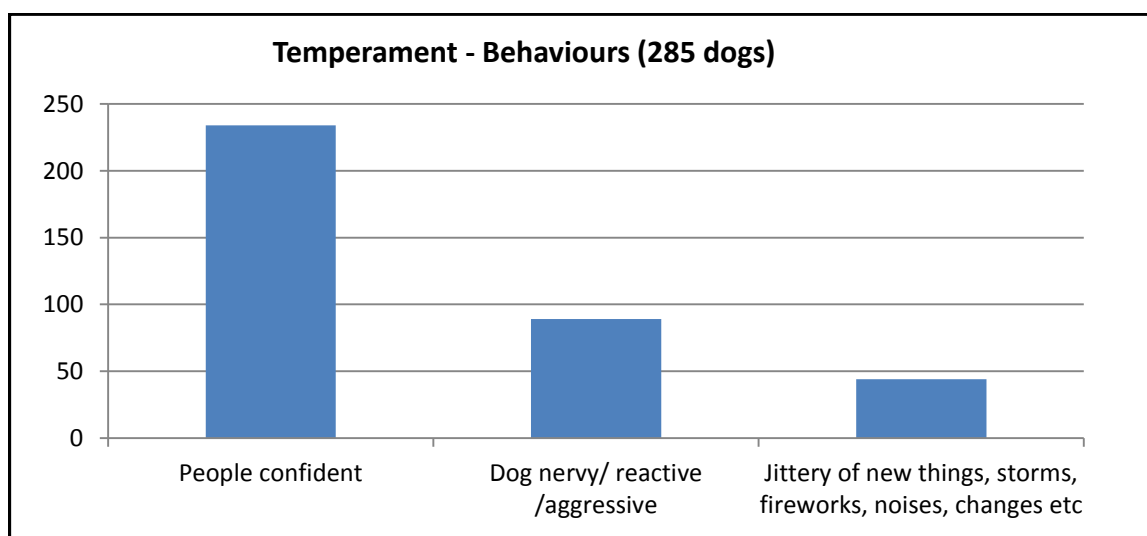
TEMPERAMENT:

Temperament was the only relatively subjective question asked in the survey and required descriptive answers to a series of questions to enable categorisation for how the dogs were to live with and also their key interactive behaviours.

- 58.6% or 167 of the 285 dogs were classified as having a 'calm, gentle, laid-back demeanour'.
- 18.9% or 54 of the dogs were classified as 'bouncy, boofy, happy & energetic'.
- 22.5% or 64 of the dogs were classified as 'stressy, nervy, highly alert/charged or reserved'.
- This is a valuable insight as Great Danes are very often called 'Gentle Giants' but may also have high energy and/or be highly strung.



- Dogs were classified into 'behaviours groups' based on interactions with people, other dogs and things/events.
- Dogs could be classified into one, two or all three groups. EG: A dog could be classed as people confident but reserved with other dogs and jittery with storms.
- 234 or 82.1% of the dogs were described by their owners as 'people confident' in that they handled being approached by people in and out of the home.
- 89 or 31.2% of the dogs were described as 'dog nervy/reactive or aggressive' by their owners.
- 44 or 15.4% of the dogs were described as 'jittery of new things, storms, fireworks, noises, changes, etc' by their owners.



OTHER HEALTH ISSUES:

Great Dane owners were asked if their dogs had 'any other medical, not accident or injury, issues outside those that the survey was collecting that were breed specific.

- The survey purpose was to investigate the prevalence of the key breed specific health conditions.
- Along with the propensity for a small group of health issues, Great Danes can demonstrate a variety of other problems just like any dog.
- Only medical issues were collected as accident & injury problems are universal to all dogs.
- The clear winner in this category was 'Cysts, Lumps & Bumps'. 5.6% or 16 of the 285 dogs had displayed this issue.
- Ear infections and Urinary Tract Infections had occurred in 2.5% of all Danes surveyed.
- Conjunctivitis and Acne had occurred in 2.1% of all Danes surveyed.
- Hygroma's and Megaoesophagus are not unknown in the Great Dane breed yet this population showed low prevalence results.

OTHER HEALTH ISSUES - MEDICAL ONLY, NON-INJURY	285 dogs	
Cysts, lumps & bumps	16	5.6%
Ear infections	7	2.5%
Urinary Tract Infections	7	2.5%
Conjunctivitis	6	2.1%
Pimples	6	2.1%
Warts	4	1.4%
Gums growing over teeth	3	1.1%
Hygroma	3	1.1%
Parvovirus as puppy	3	1.1%
Pre-pubescent vaginitis	3	1.1%
Prostatitis	3	1.1%
Excessive or fatal bleeding	2	0.7%
Head tremors	2	0.7%
Lymphoedema	2	0.7%
Aseptic meningitis	1	0.4%
Benign splenic tumour	1	0.4%
Bladder stones	1	0.4%
Carpal Vulgus Syndrome	1	0.4%
Coeliac Disease	1	0.4%
Colitis	1	0.4%
Deafness	1	0.4%
Discspondylitis	1	0.4%
Enlarged prostate	1	0.4%
Epilepsy	1	0.4%
Eye ulcers	1	0.4%
Front leg tremors	1	0.4%
Hardening of tendons at withers	1	0.4%
Hookworm	1	0.4%
Inability to digest protein effectively	1	0.4%
Intestinal torsion	1	0.4%
Irritable Bowel Syndrome	1	0.4%
Megaoesophagus - congenital	1	0.4%
Megaoesophagus - secondary	1	0.4%
Oral benign tumours	1	0.4%
Primary Orthostatic Tremor	1	0.4%
Recurring Pyoderma on leg	1	0.4%
Subluxing patella	1	0.4%
Tear duct missing from eye	1	0.4%
Tonsilectomy	1	0.4%
Toxoplasmosis	1	0.4%
Umbilical hernia	1	0.4%
Valgus Deformity	1	0.4%

WEIGHTS:

For the survey, only weight was collected from owners as height measurements may have varied depending on the skill of the measurer. Adult male Danes range on average between 61-77kgs and adult females between 50-66kgs by most Growth Charts.

In this survey, the mix of dogs by age was:

- Babies (< 6mnths) x 4 or 1.4%
- Pups (7-12mnths) x 26 or 9.1%
- Teenagers (13-23mnths) x 19 or 6.7%
- Adults (2yrs +) x 236 or 82.8%
- *For the adult female Danes, 63.2% or 60 dogs were in the 51-65kg weight bracket.*
- *For the adult male Danes, 73.6% or 67 dogs were in the 61-80kg weight bracket.*
- Handfuls of scattered outliers existed as evidenced by heavier females, heavy for age males and very heavy for breed, males & females as adults.

WEIGHT BY AGE - 285 dogs			M < 6 mnths	F < 6 mnths	M 7 -12 mnths	F 7 -12 mnths	M 13-18 mnths	F 13-18 mnths	M 19-23 mnths	F 19-23 mnths	M 2-3 yrs	F 2-3 yrs	M 3 yrs 1 mnth +	F 3 yrs 1 mnth +
< 20kg	1	0.4%		1										
21 - 25kg	1	0.4%				1								
26 - 30kg	0	0.0%												
31 - 35kg	3	1.1%	1	1	1									
36 - 40kg	3	1.1%	1			2								
41 - 45kg	7	2.5%				4								3
46 - 50kg	22	7.7%			4	3						3		12
51 - 55kg	47	16.5%			4	3	1	2		1	3	10	4	19
56 - 60kg	47	16.5%			2		1	2			1	5	9	27
61 - 65kg	46	16.1%			1		2		3	1	4	4	17	14
66 - 70kg	40	14.0%			1		2				3	2	23	9
71 - 75kg	24	8.4%					1		1		6	1	11	4
76 - 80kg	28	9.8%					2				5	1	16	4
81 - 85kg	9	3.2%									1		6	2
86 - 90kg	3	1.1%											2	1
91 - 95kg	0	0.0%												
96 - 100kg	4	1.4%									1		3	
			2	2	13	13	9	4	4	2	24	26	91	95

THANK YOU!

To all the Great Dane Lovers, who gave their time and information on their adored dogs to achieve this Prevalence Survey on Health & Lifestyle issues for a pet population. It is exciting to see that the prevalence rate for most of the traditional 'Great Dane breed issues' is quite low and apart from allergies and anal gland issues, our pet dogs are a pretty healthy & happy bunch!

The Committee & Members of the GDLAWA Incorporated are pleased to share this snapshot of our Great Danes with all readers.