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1. Allele frequency in the Toller

From the Veterinary Genetics Laboratory

February 2018, unrelated to first generation

Nova Scotia Duck Tolling Retriever	CDDY/CDDY	CDDY/N	N/N	Totals		CDDY	N
US/Canada (# dogs)	26	119	67	212			
Genotypic Frequencies	0.12	0.56	0.32	1.00	Allele	0.40	0.60
					Frequencies		
Europe (# dogs)	11	69	73	153			
Genotypic Frequencies	0.07	0.45	0.48	1.00	Allele	0.30	0.70
					Frequencies		

2. Height in the Toller

Height at shoulders was reported by owners, along with genotype and tabulated by Toller Breeder Diane Loiseau. A statistical comparison of height by genotype divided by sex was performed on this data.

How big is the difference in Males?

Unpaired t test with Welch's correction

P value 0.0014

P value summary **

Significantly different (P < 0.05)? Yes

Mean ± SEM of column N/CDDY 19.51 ± 0.1702, n=44

Mean ± SEM of column N/N 20.15 ± 0.08983, n=49

Difference between means 0.6414 ± 0.1925

95% confidence interval 0.2571 to 1.026

How big is the difference in Female dogs?

Unpaired t test with Welch's correction

P value 0.0039

P value summary **

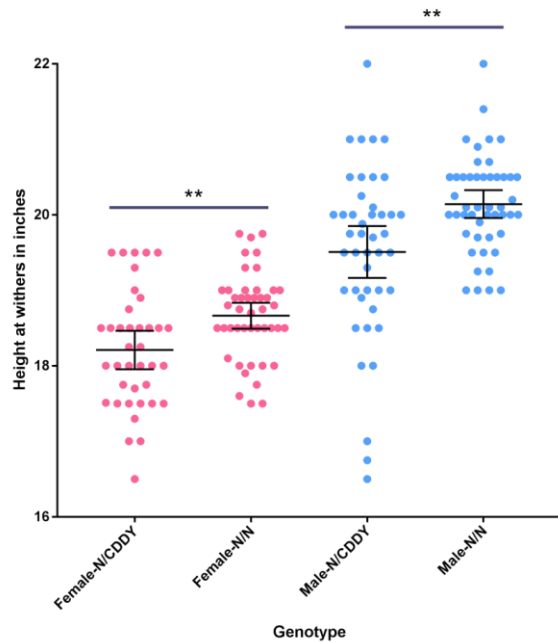
Significantly different (P < 0.05)? Yes

Mean ± SEM of column N/CDDY 18.21 ± 0.1257, n=38

Mean ± SEM of column N/N 18.66 ± 0.08511, n=45

Difference between means 0.4539 ± 0.1518

95% confidence interval 0.1509 to 0.7569



Bars represent the mean and error bars the 95% confidence interval. Dots represent individual dog measurement and genotype. There were not enough dogs reported in the CDDY/CDDY category for a statistically sound comparison to be made.

4. **IVDD in the Toller**

17 NSDTR with IVDD had medical records submitted by owners.

Type 1 was established by review of medical records, surgery reports and imaging analysis to identify calcified or degenerated nucleus pulposus.

Type	Average Age	Genotype	Number
1 (N = 15)	6.25	CDDY/CDDY	3
		n/CDDY	10
11 (N = 2)	7-10 years	n/n	2

5. Across dog breeds (N=363) there was no difference between the age of disc herniation surgery in dogs with 1 copy of chondrodystrophy (mean age in months at surgery=72.1 months) as compared to dogs with two copies (mean age of surgery= 74.45 months). Dogs without any copies of chondrodystrophy had a mean age of surgery of 8.24 years which was statistically significantly different from chondrodystrophic dogs ($p < 0.001$). This study is ongoing.

6. In breeds that segregate the chondrodystrophy mutation (some have it and some don't) we evaluated the genotypes of dogs that presented to our hospital (these are not healthy dogs). There was no statistically significant difference in the % of dogs that had disc surgery with one copy of chondrodystrophy (N=82 total, 13 with IVDD) or two copies of chondrodystrophy (N=102 total, 22 with IVDD). This study is ongoing.