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# MAGGIE

## Veterinary Report by Embark

embarkvet.com

Test Date: August 23rd, 2020

### Customer-supplied information

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Owner Name: Amanda Breitling

Dog Name: Maggie

Sex: Female (intact)

Date of birth: 08/01/19 (Estimated)

Breed type: purebred

Breed: Wheaton Terrier

Breed registration: American Kennel Club (AKC)

Microchip: N/A

### Genetic summary

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Genetic breed identification:

**Soft Coated Wheaten Terrier**

Breed mix:

 **Soft Coated Wheaten Terrier: 100.0%**

Predicted adult weight: **37 lbs**

Calculated from 17 size genes.

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Life stage: **Young adult**

Based on date of birth provided.

# Health Report

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## How to interpret Maggie's genetic health results:

If Maggie inherited any of the variants that we tested, they will be listed at the top of the Health Report section, along with a description of how to interpret this result. We also include all of the variants that we tested Maggie for that we did not detect the risk variant for.

## A genetic test is not a diagnosis

This genetic test does not diagnose a disease. Please talk to your vet about your dog's genetic results, or if you think that your pet may have a health condition or disease.

## Summary

Of the 197 genetic health risks we analyzed, we found 1 result that you should learn about.

### Notable results (1)

**ALT Activity**

### Clear results

**Breed-relevant (4)**





**Other (192)**

# Health Report

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## BREED-RELEVANT RESULTS



















Research studies indicate that these results are more relevant to dogs like Maggie, and may influence her chances of developing certain health conditions.

- |  |       |
|--|-------|
|  Degenerative Myelopathy, DM (SOD1A)                               | Clear |
|  Microphthalmia (RBP4 Exon 2, Soft Coated Wheaten Terrier Variant) | Clear |
|  Paroxysmal Dyskinesia, PxD (PIGN)                                 | Clear |
|  Protein Losing Nephropathy, PLN (NPHS1)                           | Clear |

# Health Report



















## OTHER RESULTS

Research has not yet linked these conditions to dogs with similar breeds to Maggie. Review any increased risk or notable results to understand her potential risk and recommendations.

|   |         |
|---|---------|
|  ALT Activity (GPT)   | Notable |
|  2-DHA Kidney & Bladder Stones (APRT)   | Clear   |
|  Acral Mutilation Syndrome (GDNF-AS, Spaniel and Pointer Variant)   | Clear   |
|  Adult-Onset Neuronal Ceroid Lipofuscinosis, NCL A, NCL 12 (ATP13A2, Tibetan Terrier Variant)                           | Clear   |
|  Alaskan Husky Encephalopathy (SLC19A3)   | Clear   |
|  Alaskan Malamute Polyneuropathy, AMPN (NDRG1 SNP)  | Clear   |
|  Alexander Disease (GFAP)   | Clear   |
|  Anhidrotic Ectodermal Dysplasia (EDA Intron 8)   | Clear   |
|  Autosomal Dominant Progressive Retinal Atrophy (RHO)   | Clear   |
|  Bald Thigh Syndrome (IGFBP5)   | Clear   |
|  Bully Whippet Syndrome (MSTN)  | Clear   |
|  Canine Elliptocytosis (SPTB Exon 30)   | Clear   |
|  Canine Fucosidosis (FUCA1)   | Clear   |
|  Canine Leukocyte Adhesion Deficiency Type I, CLAD I (ITGB2, Setter Variant)  | Clear   |
|  Canine Leukocyte Adhesion Deficiency Type III, CLAD III (FERMT3, German Shepherd Variant)                            | Clear   |
|  Canine Multifocal Retinopathy, cmr1 (BEST1 Exon 2)   | Clear   |
|  Canine Multifocal Retinopathy, cmr2 (BEST1 Exon 5, Coton de Tulear Variant)  | Clear   |
|  Canine Multifocal Retinopathy, cmr3 (BEST1 Exon 10 Deletion, Finnish and Swedish Lapphund, Lapponian Herder Variant) | Clear   |

# Health Report

## OTHER RESULTS

|   |       |
|---|-------|
|  Canine Multiple System Degeneration (SERAC1 Exon 4, Chinese Crested Variant)         | Clear |
|  Canine Multiple System Degeneration (SERAC1 Exon 15, Kerry Blue Terrier Variant)     | Clear |
|  Centronuclear Myopathy, CNM (PTPLA)  | Clear |
|  Cerebellar Hypoplasia (VLDLR, Eurasier Variant)                                      | Clear |
|  Chondrodystrophy (ITGA10, Norwegian Elkhound and Karelian Bear Dog Variant)          | Clear |
|  Cleft Lip and/or Cleft Palate (ADAMTS20, Nova Scotia Duck Tolling Retriever Variant) | Clear |
|  Cobalamin Malabsorption (CUBN Exon 8, Beagle Variant)                                | Clear |
|  Cobalamin Malabsorption (CUBN Exon 53, Border Collie Variant)                        | Clear |
|  Collie Eye Anomaly (NHEJ1)   | Clear |
|  Complement 3 Deficiency, C3 Deficiency (C3)  | Clear |
|  Congenital Hypothyroidism (TPO, Rat, Toy, Hairless Terrier Variant)                 | Clear |
|  Congenital Hypothyroidism (TPO, Tenterfield Terrier Variant)                       | Clear |
|  Congenital Macrothrombocytopenia (TUBB1 Exon 1, Cairn and Norfolk Terrier Variant) | Clear |
|  Congenital Myasthenic Syndrome, CMS (COLQ, Labrador Retriever Variant)             | Clear |
|  Congenital Myasthenic Syndrome, CMS (CHAT, Old Danish Pointing Dog Variant)        | Clear |
|  Congenital Myasthenic Syndrome, CMS (CHRNE, Jack Russell Terrier Variant)          | Clear |
|  Congenital Stationary Night Blindness (RPE65, Briard Variant)                      | Clear |
|  Craniomandibular Osteopathy, CMO (SLC37A2)   | Clear |



















# Health Report

## OTHER RESULTS

|   |       |
|---|-------|
| ✓ Cystinuria Type I-A (SLC3A1, Newfoundland Variant)                            | Clear |
| ✓ Cystinuria Type II-A (SLC3A1, Australian Cattle Dog Variant)                  | Clear |
| ✓ Cystinuria Type II-B (SLC7A9, Miniature Pinscher Variant)                     | Clear |
| ✓ Day Blindness (CNGA3 Exon 7, German Shepherd Variant)                         | Clear |
| ✓ Day Blindness (CNGA3 Exon 7, Labrador Retriever Variant)                      | Clear |
| ✓ Day Blindness (CNGB3 Exon 6, German Shorthaired Pointer Variant)              | Clear |
| ✓ Deafness and Vestibular Syndrome of Dobermans, DVDob, DINGS (MYO7A)           | Clear |
| ✓ Dilated Cardiomyopathy, DCM1 (PDK4, Doberman Pinscher Variant 1)              | Clear |
| ✓ Dilated Cardiomyopathy, DCM2 (TTN, Doberman Pinscher Variant 2)               | Clear |
| ✓ Dry Eye Curly Coat Syndrome (FAM83H Exon 5)                                   | Clear |
| ✓ Dystrophic Epidermolysis Bullosa (COL7A1, Central Asian Shepherd Dog Variant) | Clear |
| ✓ Dystrophic Epidermolysis Bullosa (COL7A1, Golden Retriever Variant)           | Clear |
| ✓ Early Onset Cerebellar Ataxia (SEL1L, Finnish Hound Variant)                  | Clear |
| ✓ Enamel Hypoplasia (ENAM Deletion, Italian Greyhound Variant)                  | Clear |
| ✓ Enamel Hypoplasia (ENAM SNP, Parson Russell Terrier Variant)                  | Clear |
| ✓ Episodic Falling Syndrome (BCAN)  | Clear |
| ✓ Exercise-Induced Collapse, EIC (DNM1)   | Clear |
| ✓ Factor VII Deficiency (F7 Exon 5)   | Clear |

# Health Report

## OTHER RESULTS

|   |       |
|---|-------|
|  Familial Nephropathy (COL4A4 Exon 3, Cocker Spaniel Variant)   | Clear |
|  Fetal-Onset Neonatal Neuroaxonal Dystrophy (MFN2, Giant Schnauzer Variant)   | Clear |
|  Glanzmann's Thrombasthenia Type I (ITGA2B Exon 13, Great Pyrenees Variant)   | Clear |
|  Glanzmann's Thrombasthenia Type I (ITGA2B Exon 12, Otterhound Variant)   | Clear |
|  Globoid Cell Leukodystrophy, Krabbe disease (GALC Exon 5, Terrier Variant)   | Clear |
|  Glycogen Storage Disease Type IA, Von Gierke Disease, GSD IA (G6PC, Maltese Variant)   | Clear |
|  Glycogen Storage Disease Type IIIA, GSD IIIA (AGL, Curly Coated Retriever Variant)   | Clear |
|  Glycogen storage disease Type VII, Phosphofructokinase Deficiency, PFK Deficiency (PFKM, Whippet and English Springer Spaniel Variant) | Clear |
|  Glycogen storage disease Type VII, Phosphofructokinase Deficiency, PFK Deficiency (PFKM, Wachtelhund Variant)                          | Clear |
|  GM1 Gangliosidosis (GLB1 Exon 2, Portuguese Water Dog Variant)  | Clear |
|  GM1 Gangliosidosis (GLB1 Exon 15, Shiba Inu Variant)   | Clear |
|  GM1 Gangliosidosis (GLB1 Exon 15, Alaskan Husky Variant)   | Clear |
|  GM2 Gangliosidosis (HEXA, Japanese Chin Variant)   | Clear |
|  GM2 Gangliosidosis (HEXB, Poodle Variant)  | Clear |
|  Golden Retriever Progressive Retinal Atrophy 1, GR-PRA1 (SLC4A3)   | Clear |
|  Golden Retriever Progressive Retinal Atrophy 2, GR-PRA2 (TTC8)   | Clear |
|  Goniodysgenesis and Glaucoma, Pectinate Ligament Dysplasia, PLD (OLFM3)  | Clear |
|  Hemophilia A (F8 Exon 11, German Shepherd Variant 1)   | Clear |

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## OTHER RESULTS

|  |       |
|--|-------|
| <input checked="" type="checkbox"/> Hemophilia A (F8 Exon 1, German Shepherd Variant 2)  | Clear |
| <input checked="" type="checkbox"/> Hemophilia A (F8 Exon 10, Boxer Variant)   | Clear |
| <input checked="" type="checkbox"/> Hemophilia B (F9 Exon 7, Terrier Variant)  | Clear |
| <input checked="" type="checkbox"/> Hemophilia B (F9 Exon 7, Rhodesian Ridgeback Variant)  | Clear |
| <input checked="" type="checkbox"/> Hereditary Ataxia, Cerebellar Degeneration (RAB24, Old English Sheepdog and Gordon Setter Variant) | Clear |
| <input checked="" type="checkbox"/> Hereditary Cataracts (HSF4 Exon 9, Australian Shepherd Variant)                                    | Clear |
| <input checked="" type="checkbox"/> Hereditary Footpad Hyperkeratosis (FAM83G, Terrier and Kromfohrlander Variant)                     | Clear |
| <input checked="" type="checkbox"/> Hereditary Nasal Parakeratosis, HNPk (SUV39H2)   | Clear |
| <input checked="" type="checkbox"/> Hereditary Vitamin D-Resistant Rickets (VDR)   | Clear |
| <input checked="" type="checkbox"/> Hypocatalasia, Acatlasemia (CAT)   | Clear |
| <input checked="" type="checkbox"/> Hypomyelination and Tremors (FNIP2, Weimaraner Variant)  | Clear |
| <input checked="" type="checkbox"/> Ichthyosis (NIPAL4, American Bulldog Variant)  | Clear |
| <input checked="" type="checkbox"/> Ichthyosis (SLC27A4, Great Dane Variant)   | Clear |
| <input checked="" type="checkbox"/> Ichthyosis, Epidermolytic Hyperkeratosis (KRT10, Terrier Variant)                                  | Clear |
| <input checked="" type="checkbox"/> Ichthyosis, ICH1 (PNPLA1, Golden Retriever Variant)  | Clear |
| <input checked="" type="checkbox"/> Inherited Myopathy of Great Danes (BIN1)   | Clear |
| <input checked="" type="checkbox"/> Inherited Selected Cobalamin Malabsorption with Proteinuria (CUBN, Komondor Variant)               | Clear |
| <input checked="" type="checkbox"/> Intervertebral Disc Disease (Type I) (FGF4 retrogene - CFA12)                                      | Clear |



# Health Report

## OTHER RESULTS

|  |       |
|--|-------|
| ✓ Juvenile Epilepsy (LGI2)   | Clear |
| ✓ Juvenile Laryngeal Paralysis and Polyneuropathy (RAB3GAP1, Rottweiler Variant)             | Clear |
| ✓ Juvenile Myoclonic Epilepsy (DIRAS1)   | Clear |
| ✓ L-2-Hydroxyglutaricaciduria, L2HGA (L2HGDH, Staffordshire Bull Terrier Variant)            | Clear |
| ✓ Lagotto Storage Disease (ATG4D)  | Clear |
| ✓ Late Onset Spinocerebellar Ataxia (CAPN1)  | Clear |
| ✓ Late-Onset Neuronal Ceroid Lipofuscinosis, NCL 12 (ATP13A2, Australian Cattle Dog Variant) | Clear |
| ✓ Leonberger Polyneuropathy 1 (LPN1, ARHGEF10)   | Clear |
| ✓ Leonberger Polyneuropathy 2 (GJA9)   | Clear |
| ✓ Ligneous Membranitis, LM (PLG)   | Clear |
| ✓ Limb Girdle Muscular Dystrophy (SGCD, Boston Terrier Variant)                              | Clear |
| ✓ Long QT Syndrome (KCNQ1)   | Clear |
| ✓ Lundehund Syndrome (LEPREL1)   | Clear |
| ✓ Macular Corneal Dystrophy, MCD (CHST6)   | Clear |
| ✓ Malignant Hyperthermia (RYR1)  | Clear |
| ✓ May-Hegglin Anomaly (MYH9)   | Clear |
| ✓ Methemoglobinemia (CYB5R3)   | Clear |
| ✓ Mucopolysaccharidosis Type I, MPS I (IDUA, Plott Hound Variant)                            | Clear |



















# Health Report

## OTHER RESULTS

|   |       |
|---|-------|
| <input checked="" type="checkbox"/> Mucopolysaccharidosis Type IIIA, Sanfilippo Syndrome Type A, MPS IIIA (SGSH Exon 6, Dachshund Variant)            | Clear |
| <input checked="" type="checkbox"/> Mucopolysaccharidosis Type IIIA, Sanfilippo Syndrome Type A, MPS IIIA (SGSH Exon 6, New Zealand Huntaway Variant) | Clear |
| <input checked="" type="checkbox"/> Mucopolysaccharidosis Type VII, Sly Syndrome, MPS VII (GUSB Exon 3, German Shepherd Variant)                      | Clear |
| <input checked="" type="checkbox"/> Mucopolysaccharidosis Type VII, Sly Syndrome, MPS VII (GUSB Exon 5, Terrier Brasileiro Variant)                   | Clear |
| <input checked="" type="checkbox"/> Multiple Drug Sensitivity (ABCB1)   | Clear |
| <input checked="" type="checkbox"/> Muscular Dystrophy (DMD, Cavalier King Charles Spaniel Variant 1)   | Clear |
| <input checked="" type="checkbox"/> Muscular Dystrophy (DMD, Golden Retriever Variant)  | Clear |
| <input checked="" type="checkbox"/> Musladin-Lueke Syndrome, MLS (ADAMTSL2)   | Clear |
| <input checked="" type="checkbox"/> Myotonia Congenita (CLCN1 Exon 23, Australian Cattle Dog Variant)   | Clear |
| <input checked="" type="checkbox"/> Myotonia Congenita (CLCN1 Exon 7, Miniature Schnauzer Variant)  | Clear |
| <input checked="" type="checkbox"/> Narcolepsy (HCRTR2 Exon 1, Dachshund Variant)   | Clear |
| <input checked="" type="checkbox"/> Narcolepsy (HCRTR2 Intron 6, Labrador Retriever Variant)  | Clear |
| <input checked="" type="checkbox"/> Neonatal Cerebellar Cortical Degeneration (SPTBN2, Beagle Variant)  | Clear |
| <input checked="" type="checkbox"/> Neonatal Encephalopathy with Seizures, NEWS (ATF2)  | Clear |
| <input checked="" type="checkbox"/> Neuroaxonal Dystrophy, NAD (VPS11, Rottweiler Variant)  | Clear |
| <input checked="" type="checkbox"/> Neuroaxonal Dystrophy, NAD (TECPR2, Spanish Water Dog Variant)  | Clear |
| <input checked="" type="checkbox"/> Neuronal Ceroid Lipofuscinosis 1, NCL 1 (PPT1 Exon 8, Dachshund Variant 1)  | Clear |
| <input checked="" type="checkbox"/> Neuronal Ceroid Lipofuscinosis 10, NCL 10 (CTSD Exon 5, American Bulldog Variant)                                 | Clear |

# Health Report

## OTHER RESULTS

|   |       |
|---|-------|
|  Neuronal Ceroid Lipofuscinosis 2, NCL 2 (TPP1 Exon 4, Dachshund Variant 2)                                     | Clear |
|  Neuronal Ceroid Lipofuscinosis 5, NCL 5 (CLN5 Exon 4 SNP, Border Collie Variant)                               | Clear |
|  Neuronal Ceroid Lipofuscinosis 5, NCL 5 (CLN5 Exon 4 Deletion, Golden Retriever Variant)                       | Clear |
|  Neuronal Ceroid Lipofuscinosis 6, NCL 6 (CLN6 Exon 7, Australian Shepherd Variant)                             | Clear |
|  Neuronal Ceroid Lipofuscinosis 7, NCL 7 (MFSD8, Chihuahua and Chinese Crested Variant)                         | Clear |
|  Neuronal Ceroid Lipofuscinosis 8, NCL 8 (CLN8, Australian Shepherd Variant)                                    | Clear |
|  Neuronal Ceroid Lipofuscinosis 8, NCL 8 (CLN8 Exon 2, English Setter Variant)                                  | Clear |
|  Neuronal Ceroid Lipofuscinosis, Cerebellar Ataxia, NCL4A (ARSG Exon 2, American Staffordshire Terrier Variant) | Clear |
|  Oculocutaneous Albinism, OCA (SLC45A2, Small Breed Variant)  | Clear |
|  Osteochondrodysplasia (SLC13A1, Poodle Variant)  | Clear |
|  Osteogenesis Imperfecta (COL1A2, Beagle Variant)   | Clear |
|  Osteogenesis Imperfecta (SERPINH1, Dachshund Variant)  | Clear |
|  Osteogenesis Imperfecta (COL1A1, Golden Retriever Variant)   | Clear |
|  P2Y12 Receptor Platelet Disorder (P2Y12)   | Clear |
|  Pachyonychia Congenita (KRT16, Dogue de Bordeaux Variant)  | Clear |
|  Persistent Mullerian Duct Syndrome, PMDS (AMHR2)   | Clear |
|  Platelet Factor X Receptor Deficiency, Scott Syndrome (TMEM16F)  | Clear |
|  Polycystic Kidney Disease, PKD (PKD1)  | Clear |



















# Health Report

## OTHER RESULTS

|   |       |
|---|-------|
| <input checked="" type="checkbox"/> Polyneuropathy (NDRG1 Deletion, Greyhound Variant)  | Clear |
| <input checked="" type="checkbox"/> Pompe's Disease (GAA, Finnish and Swedish Lapphund, Lapponian Herder Variant)                     | Clear |
| <input checked="" type="checkbox"/> Prekallikrein Deficiency (KLKB1 Exon 8)   | Clear |
| <input checked="" type="checkbox"/> Primary Ciliary Dyskinesia, PCD (CCDC39 Exon 3, Old English Sheepdog Variant)                     | Clear |
| <input checked="" type="checkbox"/> Primary Hyperoxaluria (AGXT)  | Clear |
| <input checked="" type="checkbox"/> Primary Lens Luxation (ADAMTS17)  | Clear |
| <input checked="" type="checkbox"/> Primary Open Angle Glaucoma (ADAMTS17 Exon 11, Basset Fauve de Bretagne Variant)                  | Clear |
| <input checked="" type="checkbox"/> Primary Open Angle Glaucoma (ADAMTS10 Exon 17, Beagle Variant)                                    | Clear |
| <input checked="" type="checkbox"/> Primary Open Angle Glaucoma (ADAMTS10 Exon 9, Norwegian Elkhound Variant)                         | Clear |
| <input checked="" type="checkbox"/> Primary Open Angle Glaucoma and Primary Lens Luxation (ADAMTS17 Exon 2, Chinese Shar-Pei Variant) | Clear |
| <input checked="" type="checkbox"/> Progressive Retinal Atrophy (SAG)   | Clear |
| <input checked="" type="checkbox"/> Progressive Retinal Atrophy, CNGA (CNGA1 Exon 9)  | Clear |
| <input checked="" type="checkbox"/> Progressive Retinal Atrophy, crd1 (PDE6B, American Staffordshire Terrier Variant)                 | Clear |
| <input checked="" type="checkbox"/> Progressive Retinal Atrophy, crd4/cord1 (RPGRIP1)   | Clear |
| <input checked="" type="checkbox"/> Progressive Retinal Atrophy, PRA1 (CNGB1)   | Clear |
| <input checked="" type="checkbox"/> Progressive Retinal Atrophy, PRA3 (FAM161A)   | Clear |
| <input checked="" type="checkbox"/> Progressive Retinal Atrophy, prcd (PRCD Exon 1)   | Clear |
| <input checked="" type="checkbox"/> Progressive Retinal Atrophy, rcd1 (PDE6B Exon 21, Irish Setter Variant)                           | Clear |

# Health Report

## OTHER RESULTS

|   |       |
|---|-------|
|  Progressive Retinal Atrophy, rcd3 (PDE6A)                            | Clear |
|  Pyruvate Dehydrogenase Deficiency (PDP1, Spaniel Variant)            | Clear |
|  Pyruvate Kinase Deficiency (PKLR Exon 5, Basenji Variant)            | Clear |
|  Pyruvate Kinase Deficiency (PKLR Exon 7, Beagle Variant)             | Clear |
|  Pyruvate Kinase Deficiency (PKLR Exon 10, Terrier Variant)           | Clear |
|  Pyruvate Kinase Deficiency (PKLR Exon 7, Labrador Retriever Variant) | Clear |
|  Pyruvate Kinase Deficiency (PKLR Exon 7, Pug Variant)                | Clear |
|  Renal Cystadenocarcinoma and Nodular Dermatofibrosis (FLCN Exon 7)   | Clear |
|  Severe Combined Immunodeficiency, SCID (PRKDC, Terrier Variant)      | Clear |
|  Severe Combined Immunodeficiency, SCID (RAG1, Wetterhoun Variant)    | Clear |
|  Shaking Puppy Syndrome (PLP1, English Springer Spaniel Variant)     | Clear |
|  Shar-Pei Autoinflammatory Disease, SPAID, Shar-Pei Fever (MTBP)    | Clear |
|  Skeletal Dysplasia 2, SD2 (COL11A2, Labrador Retriever Variant)    | Clear |
|  Skin Fragility Syndrome (PKP1, Chesapeake Bay Retriever Variant)   | Clear |
|  Spinocerebellar Ataxia with Myokymia and/or Seizures (KCNJ10)      | Clear |
|  Spongy Degeneration with Cerebellar Ataxia 1 (KCNJ10)              | Clear |
|  Spongy Degeneration with Cerebellar Ataxia 2 (ATP1B2)              | Clear |
|  Thrombopathia (RASGRP1 Exon 5, American Eskimo Dog Variant)        | Clear |

# Health Report

## OTHER RESULTS

|  |       |
|--|-------|
| <input checked="" type="checkbox"/> Thrombopathia (RASGRP1 Exon 5, Basset Hound Variant)                                   | Clear |
| <input checked="" type="checkbox"/> Thrombopathia (RASGRP1 Exon 8, Landseer Variant)                                       | Clear |
| <input checked="" type="checkbox"/> Trapped Neutrophil Syndrome, TNS (VPS13B)  | Clear |
| <input checked="" type="checkbox"/> Urate Kidney & Bladder Stones (SLC2A9)   | Clear |
| <input checked="" type="checkbox"/> Von Willebrand Disease Type I, Type I vWD (VWF)  | Clear |
| <input checked="" type="checkbox"/> Von Willebrand Disease Type II, Type II vWD (VWF, Pointer Variant)                     | Clear |
| <input checked="" type="checkbox"/> Von Willebrand Disease Type III, Type III vWD (VWF Exon 4, Terrier Variant)            | Clear |
| <input checked="" type="checkbox"/> Von Willebrand Disease Type III, Type III vWD (VWF Exon 7, Shetland Sheepdog Variant)  | Clear |
| <input checked="" type="checkbox"/> X-Linked Hereditary Nephropathy, XLHN (COL4A5 Exon 35, Samoyed Variant 2)              | Clear |
| <input checked="" type="checkbox"/> X-Linked Myotubular Myopathy (MTM1, Labrador Retriever Variant)                        | Clear |
| <input checked="" type="checkbox"/> X-Linked Progressive Retinal Atrophy 1, XL-PRA1 (RPGR)                                 | Clear |
| <input checked="" type="checkbox"/> X-linked Severe Combined Immunodeficiency, X-SCID (IL2RG Exon 1, Basset Hound Variant) | Clear |
| <input checked="" type="checkbox"/> X-linked Severe Combined Immunodeficiency, X-SCID (IL2RG, Corgi Variant)               | Clear |

# Health Report

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## HEALTH REPORT

### Notable result

#### **ALT Activity**

Maggie inherited both copies of the variant we tested for Alanine Aminotransferase Activity

#### **Why is this important to your vet?**

Maggie has two copies of a variant in the GPT gene and is likely to have a lower than average baseline ALT activity. ALT is a commonly used measure of liver health on routine veterinary blood chemistry panels. As such, your veterinarian may want to watch for changes in Maggie's ALT activity above their current, healthy, ALT activity. As an increase above Maggie's baseline ALT activity could be evidence of liver damage, even if it is within normal limits by standard ALT reference ranges.

#### **What is Alanine Aminotransferase Activity?**

Alanine aminotransferase (ALT) is a clinical tool that can be used by veterinarians to better monitor liver health. This result is not associated with liver disease. ALT is one of several values veterinarians measure on routine blood work to evaluate the liver. It is a naturally occurring enzyme located in liver cells that helps break down protein. When the liver is damaged or inflamed, ALT is released into the bloodstream.

#### **How vets diagnose this condition**

Genetic testing is the only way to provide your veterinarian with this clinical tool.

#### **How this condition is treated**

Veterinarians may recommend blood work to establish a baseline ALT value for healthy dogs with one or two copies of this variant.

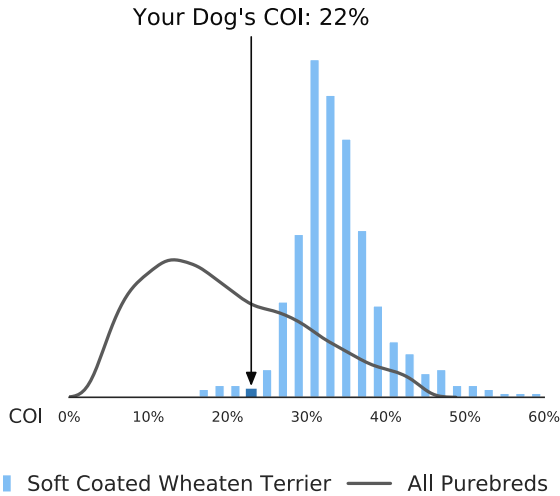
# Genetic Diversity and Inbreeding

## Coefficient of Inbreeding (COI)

**Genetic Result:** 22%

Our genetic COI measures the proportion of your dog's genome (her genes) where the genes on the mother's side are identical by descent to those on the father's side. The higher your dog's coefficient of inbreeding (the percentage), the more inbred your dog is.

## Your Dog's COI



This graph represents where your dog's inbreeding levels fall on a scale compared to both dogs with a similar breed makeup to her (the blue bars) and all purebred dogs (the grey line).



# Genetic Diversity and Inbreeding

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## More on the Science

Embark scientists, along with our research partners at Cornell University, have shown the impact of inbreeding on longevity and fertility and developed a state-of-the-art, peer-reviewed method for accurately measuring COI and predicting average COI in litters.

### Citations

Sams & Boyko 2019 "Fine-Scale Resolution of Runs of Homozygosity Reveal Patterns of Inbreeding and Substantial Overlap with Recessive Disease Genotypes in Domestic Dogs" (<https://www.ncbi.nlm.nih.gov/pubmed/30429214>)

Chu et al 2019 "Inbreeding depression causes reduced fecundity in Golden Retrievers" (<https://link.springer.com/article/10.1007/s00335-019-09805-4>)

Yordy et al 2019 "Body size, inbreeding, and lifespan in domestic dogs" (<https://www.semanticscholar.org/paper/Body-size%2C-inbreeding%2C-and-lifespan-in-domestic-Yordy-Kraus/61d0fa7a71afb26f547f0fb7ff71e23a14d19d2c>)

# About Embark

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Embark Veterinary is a canine genetics company offering research-grade genetic tests to pet owners and breeders. Every Embark test examines over 200,000 genetic markers, and provides results for over 230 genetic health conditions, breed identification, clinical tools, and more.

Embark is a research partner of the Cornell University College of Veterinary Medicine and collaborates with scientists and registries to accelerate genetic research in canine health. We make it easy for customers and vets to understand, share and make use of their dog's unique genetic profile to improve canine health and happiness.

Learn more at [embarkvet.com](https://embarkvet.com)

Veterinarians and hospitals can send inquiries to [veterinarians@embarkvet.com](mailto:veterinarians@embarkvet.com).