### Customer-supplied information

<table>
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<tr>
<th>Owner Name: Nightside Nordics</th>
<th>Breed type: mixed</th>
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<tr>
<td>Dog Name: Gabe</td>
<td>Breed: n/a</td>
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<td>Sex: Male (intact)</td>
<td>Breed registration: n/a</td>
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<td>Date of birth: 01/01/08</td>
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### Genetic summary

**Breed mix:**
- **Gray Wolf:** 60.6%
- **German Shepherd Dog:** 22.4%
- **Alaskan Malamute:** 8.0%
- **Siberian Husky:** 5.7%
- **Norwegian Elkhound:** 3.3%

**Predicted adult weight:** **72 lbs**
Calculated from 17 size genes.

**Genetic age:** **72 human years**
Human equivalent age based on size and other factors.

### Karyogram (Chromosome painting)

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How to interpret these results:

AT RISK status: Testing positive (AT RISK) is predictive of your dog being affected by this condition, but it is not a final diagnosis nor does it predict when symptoms may occur or the severity of a condition in your dog.

Clinical Traits

These clinical genetic traits can inform clinical decisions and diagnoses. These traits do not predict a disease state or increased risk for disease. We currently assess one clinical trait: Alanine Aminotransferase Activity.

Alanine Aminotransferase Activity result: Normal

Gabe has two healthy alleles at ALT.

More information on Alanine Aminotransferase Activity:
Known to be highly expressed in liver cells, activity levels of alanine aminotransferase, or ALT, is a common value on most blood chemistry panels and is known to be a sensitive measure of liver health. Dogs with two ancestral G alleles show "normal" activity. Dogs that have one or two copies of the derived A allele may have lower resting levels of ALT activity, known as "low normal". If your dog's result is "low normal" then when a blood chemistry panel is being interpreted the values that you and your veterinarian consider "normal" may need to be adjusted. Neither a "normal" nor a "low normal" result predicts a disease state or increased risk for disease.

Health Report

How to interpret these results:

AT RISK status: Testing positive (AT RISK) is predictive of your dog being affected by this condition, but it is not a final diagnosis nor does it predict when symptoms may occur or the severity of a condition in your dog.
CARRIER status: This indicates the dog has inherited a recessive allele for a genetic trait or mutation. This is not enough to cause symptoms of the disease, but is important to bear in mind if the dog ever has offspring.

Conditions:

⚠️ Not AT RISK for any conditions tested.

🚫 Not a CARRIER for any conditions tested.

All other health conditions tested

Gabe tested CLEAR for all these conditions:

- Multidrug Sensitivity (MDR1) (Chromosome 14)
- Coagulopathy P2RY12 Defect (P2RY12) (Chromosome 23)
- Coagulopathy Factor IX Deficiency, Hemophilia B (F9 Exon 7, Terrier Variant) (Chromosome X)
- Coagulopathy Factor IX Deficiency, Hemophilia B (F9 Exon 7, Rhodesian Ridgeback Variant) (Chromosome X)
- Coagulopathy Factor VII Deficiency (F7 Exon 5) (Chromosome 22)
- Coagulopathy Factor VIII Deficiency, Hemophilia A (F8 Exon 10) (Chromosome X)
- Coagulopathy Factor VIII Deficiency, Hemophilia A (F8 Exon 11) (Chromosome X)
- Coagulopathy Factor VIII Deficiency, Hemophilia A (F8 Exon 1) (Chromosome X)
- Coagulopathy Thrombopathia (RASGRP2 Exon 5, Basset Hound Variant) (Chromosome 18)
- Coagulopathy Thrombopathia (RASGRP2 Exon 8) (Chromosome 18)
- Coagulopathy Thrombopathia (RASGRP2 Exon 5, American Eskimo Dog Variant) (Chromosome 18)
- Coagulopathy Von Willebrand Disease Type II (VWF Exon 28) (Chromosome 27)
- Coagulopathy Von Willebrand Disease Type III (VWF Exon 4) (Chromosome 27)
- Canine Leucocyte Adhesion Deficiency Type I (ITGB2) (Chromosome 31)
- Canine Leucocyte Adhesion Deficiency Type III (FERMT3) (Chromosome 18)
- Congenital Macrothrombocytopenia (TUBB1 Exon 1, Cavalier King Charles Spaniel Variant) (Chromosome 24)
- Canine elliptocytosis (SPTB Exon 30) (Chromosome 8)
- Cyclic neutropenia, Gray Collie Syndrome (AP3B1 Exon 20) (Chromosome 31)
- Glanzmann's thrombasthenia Type I (ITGA2B Exon 13) (Chromosome 9)
- Glanzmann's thrombasthenia Type I (ITGA2B Exon 12) (Chromosome 9)
- May–Hegglin Anomaly (MYH9) (Chromosome 10)
- Prekallikrein Deficiency (KLKB1 Exon 8) (Chromosome 16)
- Pyruvate kinase deficiency (PKLR Exon 5) (Chromosome 7)
- Pyruvate kinase deficiency (PKLR Exon 7 Labrador Variant) (Chromosome 7)
- Pyruvate kinase deficiency (PKLR Exon 7 Pug Variant) (Chromosome 7)
- Pyruvate kinase deficiency (PKLR Exon 7 Beagle Variant) (Chromosome 7)
- Pyruvate kinase deficiency (PKLR Exon 10) (Chromosome 7)
- Trapped Neutrophil Syndrome (VPS13B) (Chromosome 13)
- Ligneous Membranitis (PLG) (Chromosome 1)
- Congenital hypothyroidism (TPO Variant 1) (Chromosome 17)
- Complement 3 (C3) deficiency (C3) (Chromosome 20)
- Severe Combined Immunodeficiency (PRKDC) (Chromosome 29)
- Severe Combined Immunodeficiency (RAG1) (Chromosome 18)
- X-linked Severe Combined Immunodeficiency (IL2RG Variant 1) (Chromosome X)
- X-linked Severe Combined Immunodeficiency (IL2RG Variant 2) (Chromosome X)
- Progressive Retinal Atrophy (PRA) Rod-cone dysplasia, rcd1 (PDE6B Exon 21 Irish Setter Variant) (Chromosome 3)
- Progressive Retinal Atrophy (PRA) Rod-cone dysplasia, rcd1a (PDE6B Exon 21 Sloughi Variant) (Chromosome 3)
- Progressive Retinal Atrophy (PRA) Rod-cone dysplasia, rcd3 (PDE6A) (Chromosome 4)
- Progressive Retinal Atrophy (PRA) (CNNGA1 Exon 9) (Chromosome 13)
- Progressive Retinal Atrophy (PRA) Progressive rod-cone degeneration (PRCD Exon 1) (Chromosome 9)
- Progressive Retinal Atrophy (PRA) (CNGB1) (Chromosome 2)
- Progressive Retinal Atrophy (PRA) (SAG) (Chromosome 25)
- Progressive Retinal Atrophy (PRA) Golden Retriever PRA 2 (TTCO8) (Chromosome 8)
- Progressive Retinal Atrophy (PRA) Cone-rod dystrophy 1, crd1 (PDE6B) (Chromosome 3)
- Progressive Retinal Atrophy (PRA) Cone-rod dystrophy 2, crd2 (IQCB1) (Chromosome 33)
- Progressive Retinal Atrophy (PRA) Cone-rod dystrophy, crd4/cord1 (RPGRIP1) (Chromosome 15)
- Day blindness, Achromatopsia, Cone Degeneration (CNGB3 Exon 6) (Chromosome 29)
- Achromatopsia (CNAGA3 Exon 7 German Shepherd Variant) (Chromosome 10)
- Achromatopsia (CNAGA3 Exon 7 Labrador Retriever Variant) (Chromosome 10)
- Autosomal Dominant Progressive Retinal Atrophy (RHO) (Chromosome 20)
- Canine Multifocal Retinopathy cmr1 (BEST1 Exon 2) (Chromosome 18)
- Canine Multifocal Retinopathy cmr2 (BEST1 Exon 5) (Chromosome 18)
- Canine Multifocal Retinopathy cmr3 (BEST1 Exon 10 Deletion) (Chromosome 18)
- Canine Multifocal Retinopathy cmr3 (BEST1 Exon 10 SNP) (Chromosome 18)
- Glaucoma Primary Open Angle Glaucoma (ADAMTS10 Exon 9) (Chromosome 20)
- Glaucoma Primary Open Angle Glaucoma (ADAMTS10 Exon 17) (Chromosome 20)
- Glaucoma Primary Open Angle Glaucoma (ADAMTS17 Exon 12) (Chromosome 3)
- Hereditary cataracts, Early-onset cataracts, Juvenile cataracts (HSF4 Exon 9 Boston Terrier Variant) (Chromosome 5)
- Primary Lens Luxation (ADAMTS17) (Chromosome 3)
• Congenital stationary night blindness (RPE65) (Chromosome 6)
• 2,8-Dihydroxyadenine (2,8-DHA) urolithiasis (APRT) (Chromosome 5)
• Cystinuria Type I-A (SLC3A1) (Chromosome 10)
• Cystinuria Type II-A (SLC3A1) (Chromosome 10)
• Cystinuria Type II-B (SLC7A9) (Chromosome 1)
• Hyperuricosuria and Hyperuricemia or Urolithiasis (SLC2A9) (Chromosome 3)
• Polycystic Kidney Disease (PKD1) (Chromosome 6)
• Primary Hyperoxaluria (AGXT) (Chromosome 25)
• Protein Losing Nephropathy (NPHS1) (Chromosome 1)
• Protein Losing Nephropathy (KIRREL2) (Chromosome 1)
• Protein Losing Nephropathy X-Linked Hereditary Nephropathy (COL4A5 Exon 35) (Chromosome X)
• Protein Losing Nephropathy Autosomal Recessive Hereditary Nephropathy (COL4A4 Exon 30) (Chromosome 25)
• Protein Losing Nephropathy Autosomal Recessive Hereditary Nephropathy (COL4A4 Exon 3) (Chromosome 25)
• Primary Ciliary Dyskinesia (CCDC39 Exon 3) (Chromosome 34)
• Congenital Keratoconjunctivitis Sicca and Ichthyosiform Dermatosis (CKCSID), Dry Eye Curly Coat Syndrome (FAM83H Exon 5) (Chromosome 13)
• X-linked Ectodermal Dysplasia, Anhydrotic Ectodermal Dysplasia (EDA Intron 8) (Chromosome X)
• Renal Cystadenocarcinoma and Nodular Dermatofibrosis (RCND) (FLCN Exon 7) (Chromosome 5)
• Glycogen Storage Disease Type II, Pompe’s Disease (GAA) (Chromosome 9)
• Glycogen Storage Disease Type Ia, Von Gierke Disease (G6PC) (Chromosome 9)
• Glycogen Storage Disease Type IIIa (GSD IIIa) (AGL) (Chromosome 6)
• Mucopolysaccharidosis Type IIIA, Sanfilippo syndrome Type A (SGSH Exon 6 Variant 1) (Chromosome 9)
• Mucopolysaccharidosis Type IIIA, Sanfilippo syndrome Type A (SGSH Exon 6 Variant 2) (Chromosome 9)
• Mucopolysaccharidosis Type VII, Sly syndrome (GUSB Exon 5) (Chromosome 6)
• Mucopolysaccharidosis Type VII, Sly syndrome (GUSB Exon 3) (Chromosome 6)
• Glycogen storage disease Type VII, Phosphofructokinase deficiency (PFKM Exon 21) (Chromosome 27)
• Glycogen storage disease Type VII, Phosphofructokinase deficiency (PFKM Exon 8) (Chromosome 27)
• Lagotto Storage Disease (ATG4D) (Chromosome 20)
• Neuronal Ceroid Lipofuscinosis 1 (PPT1 Exon 8) (Chromosome 15)
• Neuronal Ceroid Lipofuscinosis 2 (TPP1 Exon 4) (Chromosome 21)
• Neuronal Ceroid Lipofuscinosis 1 (ARSG Exon 2) (Chromosome 9)
• Neuronal Ceroid Lipofuscinosis 1 (CLN5 Exon 4 Variant 1) (Chromosome 22)
• Neuronal Ceroid Lipofuscinosis 6 (CLN6 Exon 7) (Chromosome 30)
• Neuronal Ceroid Lipofuscinosis 8 (CLN8 Exon 2) (Chromosome 37)
- Neuronal Ceroid Lipofuscinosis (MFSD8) (Chromosome 19)
- Neuronal Ceroid Lipofuscinosis (CLN8) (Chromosome 37)
- Neuronal Ceroid Lipofuscinosis 10 (CTSD Exon 5) (Chromosome 18)
- Neuronal Ceroid Lipofuscinosis (CLN5 Exon 4 Variant 2) (Chromosome 22)
- Adult-onset Neuronal Ceroid Lipofuscinosis (ATP13A2) (Chromosome 2)
- Gangliosidosis GM1 Gangliosidosis (GLB1 Exon 15 Shiba Inu Variant) (Chromosome 23)
- Gangliosidosis GM1 Gangliosidosis (GLB1 Exon 15 Alaskan Husky Variant) (Chromosome 23)
- Gangliosidosis GM1 Gangliosidosis (GLB1 Exon 2) (Chromosome 23)
- Gangliosidosis GM2 Gangliosidosis (HEXB Exon 3) (Chromosome 2)
- Gangliosidosis GM2 Gangliosidosis (HEXA) (Chromosome 30)
- Globoid Cell Leukodystrophy, Krabbe's disease (GALC Exon 5) (Chromosome 8)
- Autosomal Recessive Amelogenesis Imperfecta (ENAM) (Chromosome 13)
- Persistent Mullerian Duct Syndrome (AMHR2) (Chromosome 27)
- Alaskan Husky Encephalopathy, Subacute Necrotizing Encephalomyelopathy (SLC19A3) (Chromosome 25)
- Alexander disease (GFAP) (Chromosome 9)
- Cerebellar disease Cerebellar abiotrophy, Neonatal Cerebellar Cortical Degeneration (SPTBN2) (Chromosome 18)
- Cerebellar disease Cerebellar ataxia, Progressive early-onset cerebellar ataxia (SEL1L) (Chromosome 8)
- Cerebellar disease Cerebellar hypoplasia (VLDLR) (Chromosome 1)
- Cerebellar disease Late-onset ataxia, Spinocerebellar ataxia (CAPN1) (Chromosome 18)
- Cerebellar disease Spinocerebellar ataxia with myokymia and/or seizures (KCNJ10) (Chromosome 38)
- Benign Familial Juvenile Epilepsy, Remitting Focal Epilepsy (LGI2) (Chromosome 3)
- Degenerative myelopathy (SOD1 Exon 2) (Chromosome 31)
- Axonal Disease Fetal-onset neonatal neuroaxonal dystrophy (MFN2) (Chromosome 2)
- Axonal Disease Hypomyelination and Tremor (FNIP2) (Chromosome 15)
- Axonal Disease Shaking Puppy Syndrome, X-linked Generalized Tremor Syndrome (PLP) (Chromosome X)
- L-2-Hydroxyglutaricaciduria (L2HGDH) (Chromosome 0)
- Neonatal Encephalopathy with Seizures (ATF2) (Chromosome 36)
- Polyneuropathy (NDRG1 Exon 15) (Chromosome 13)
- Polyneuropathy (NDRG1 Exon 4) (Chromosome 13)
- Narcolepsy (HCRT2 Intron 6) (Chromosome 12)
- Progressive neuronal abiotrophy, Canine Multiple System Degeneration (SERAC1 Exon 15) (Chromosome 1)
- Progressive neuronal abiotrophy, Canine Multiple System Degeneration (SERAC1 Exon 4) (Chromosome 1)
- Dilated Cardiomyopathy (PDK4) (Chromosome 14)
- Long QT Syndrome (KCNQ1) (Chromosome 18)
- Muscular Dystrophy Muscular Dystrophy (DMD Cavalier King Charles Spaniel Variant) (Chromosome X)
- Muscular Dystrophy Muscular Dystrophy (DMD Pembroke Welsh Corgi Variant) (Chromosome X)
- Muscular Dystrophy Muscular Dystrophy (DMD Golden Retriever Variant) (Chromosome X)
- Exercise-induced collapse (DNM1) (Chromosome 9)
- Inherited myopathy of Great Danes (BIN1) (Chromosome 19)
- Bully Whippet Syndrome (MSTN) (Chromosome 37)
- Myotonia congenita (CLCN1 Exon 7) (Chromosome 16)
- Myotonia congenita (CLCN1 Exon 23) (Chromosome 16)
- Myotubular Myopathy 1, X-linked Myotubular Myopathy (MTM1) (Chromosome X)
- Hypocatalasia, Acatalasemia (CAT) (Chromosome 18)
- Pyruvate Dehydrogenase Deficiency (PDP1) (Chromosome 29)
- Malignant hyperthermia (RYR1) (Chromosome 1)
- Imerslund-Grasbeck Syndrome, Selective cobalamin malabsorption (CUBN Exon 53) (Chromosome 2)
- Imerslund-Grasbeck Syndrome, Selective cobalamin malabsorption (CUBN Exon 8) (Chromosome 2)
- Gallbladder mucoceles (ABCB4) (Chromosome 14)
- Congenital Myasthenic Syndrome (CHAT) (Chromosome 28)
- Congenital Myasthenic Syndrome (COLQ) (Chromosome 23)
- Episodic falling syndrome (BCAN) (Chromosome 7)
- Dystrophic epidermolysis bullosa (COL7A1) (Chromosome 20)
- Ectodermal dysplasia or Skin Fragility Syndrome (PKP1) (Chromosome 7)
- Ichthyosis, Epidermolytic hyperkeratosis (KRT10) (Chromosome 9)
- Ichthyosis (PNPLA1) (Chromosome 12)
- Ichthyosis (SLC27A4) (Chromosome 9)
- Focal non-epidermolytic palmoplantar keratoderma, pachyonychia congenita (KRT16) (Chromosome 9)
- Hereditary nasal parakeratosis (SUV39H2) (Chromosome 2)
- Musladin-Lueke syndrome (ADAMTSL2) (Chromosome 9)
- Cleft lip with or without cleft palate (ADAMTS20) (Chromosome 27)
- Hereditary Vitamin D-Resistant Rickets (VDR) (Chromosome 27)
- Oculoskeletal Dysplasia 1, Dwarfism-Retinal Dysplasia 1 (COL9A3) (Chromosome 24)
- Osteogenesis imperfecta, Brittle bone disease (COL1A2) (Chromosome 14)
- Osteogenesis imperfecta, Brittle bone disease (SERPINH1) (Chromosome 21)
- Osteogenesis imperfecta, Brittle bone disease (COL1A1) (Chromosome 9)
- Osteochondrodysplasia, Skeletal dwarfism (SLC13A1) (Chromosome 14)
- Skeletal Dysplasia 2 (COL11A2) (Chromosome 12)
Embark Veterinary is a canine consumer genetics company offering research-grade genetic tests to owners and breeders. 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. The Embark test is the only comprehensive test on the market, providing results for over 160 genetic health conditions and accurate breed identification based on over 200,000 genetic markers. We strive to make it easy for customers and vets to understand, share and use their dog’s unique genetic profile to improve their pet’s health and happiness.

You can learn more on our website embarkvet.com

For enquiries please contact us at vetsupport@embarkvet.com