Breed-Relevant Conditions Tested

Power did not have the variants that we tested for, that are relevant to his breeds:

- **Von Willebrand Disease Type I, Type I vWD (VWF)**
- **Canine Elliptocytosis (SPTB Exon 30)**
- **Pyruvate Kinase Deficiency (PKLR Exon 7, Labrador Retriever Variant)**
- **Progressive Retinal Atrophy, prcd (PRCD Exon 1)**
- **Golden Retriever Progressive Retinal Atrophy 2, GR-PRA2 (TTC8)**
- **Progressive Retinal Atrophy, crd4/cord1 (RPGRIP1)**
- **Achromatopsia (CNGA3 Exon 7, Labrador Retriever Variant)**
- **Macular Corneal Dystrophy, MCD (CHST6)**
- **Hyperuricosuria and Hyperuricemia or Urolithiasis, HUU (SLC2A9)**
- **Autosomal Recessive Hereditary Nephropathy, Familial Nephropathy, ARHN (COL4A4 Exon 3, Cocker Spaniel Variant)**
- **Congenital Keratoconjunctivitis Sicca and Ichthyosiform Dermatosis, Dry Eye Curly Coat Syndrome, CKCSID (FAM83H Exon 5)**
- **Glycogen storage disease Type VII, Phosphofructokinase Deficiency, PFK Deficiency (PFKM, Whippet and English Springer Spaniel Variant)**
- **GM2 Gangliosidosis (HEXB, Poodle Variant)**
- **Alexander Disease (GFAP)**
- **Neonatal Encephalopathy with Seizures, NEWS (ATF2)**
- **Narcolepsy (HCRTR2 Intron 6, Labrador Retriever Variant)**
- **Hereditary Sensory Autonomic Neuropathy, Acral Mutilation Syndrome, AMS (GDNF-AS, Spaniel and Pointer Variant)**
- **Muscular Dystrophy (DMD, Cavalier King Charles Spaniel Variant 1)**
- **Ullrich-like Congenital Muscular Dystrophy (COL6A3 Exon 10, Labrador Retriever Variant)**
- **Centronuclear Myopathy, CNM (PTPLA)**

Breed-Relevant Conditions Tested

- **Exercise-Induced Collapse, EIC (DNM1)**
- **Myotubular Myopathy 1, X-linked Myotubular Myopathy, XL-MTM (MTM1, Labrador Retriever Variant)**
- **Congenital Myasthenic Syndrome, CMS (COLQ, Labrador Retriever Variant)**
- **Episodic Falling Syndrome (BCAN)**
- **Hereditary Nasal Parakeratosis, HNPK (SUV39H2)**
- **Osteochondrodysplasia, Skeletal Dwarfism (SLC13A1, Poodle Variant)**
- **Skeletal Dysplasia 2, SD2 (COL11A2, Labrador Retriever Variant)**

Additional Conditions Tested

Power did not have the variants that we tested for, in the following conditions that the potential effect on dogs with Power's breeds may not yet be known.

- **MDR1 Drug Sensitivity (ABCB1)**
- **P2Y12 Receptor Platelet Disorder (P2Y12)**
- **Factor IX Deficiency, Hemophilia B (F9 Exon 7, Terrier Variant)**
- **Factor IX Deficiency, Hemophilia B (F9 Exon 7, Rhodesian Ridgeback Variant)**
- **Factor VII Deficiency (F7 Exon 5)**
- **Factor VIII Deficiency, Hemophilia A (F8 Exon 10, Boxer Variant)**
- **Factor VIII Deficiency, Hemophilia A (F8 Exon 11, German Shepherd Variant 1)**
- **Factor VIII Deficiency, Hemophilia A (F8 Exon 1, German Shepherd Variant 2)**
- **Thrombopathia (RASGRP1 Exon 5, Basset Hound Variant)**
- **Thrombopathia (RASGRP1 Exon 8, Landseer Variant)**
- **Thrombopathia (RASGRP1 Exon 5, American Eskimo Dog Variant)**
- **Von Willebrand Disease Type III, Type III vWD (VWF Exon 4, Terrier Variant)**
- **Von Willebrand Disease Type III, Type III vWD (VWF Exon 7, Shetland Sheepdog Variant)**
- **Von Willebrand Disease Type II, Type II vWD (VWF, Pointer Variant)**
- **Canine Leukocyte Adhesion Deficiency Type I, CLAD I (ITGB2, Setter Variant)**
- **Canine Leukocyte Adhesion Deficiency Type III, CLAD III (FERMT3, German Shepherd Variant)**
- **Congenital Macrothrombocytopenia (TUBB1 Exon 1, Cairn and Norfolk Terrier Variant)**
- **Glanzmann's Thrombasthenia Type I (ITGA2B Exon 13, Great Pyrenees Variant)**
- **Glanzmann's Thrombasthenia Type I (ITGA2B Exon 12, Otterhound Variant)**
- **May-Hegglin Anomaly (MYH9)**

Additional Conditions Tested

- **Prekallikrein Deficiency (KLKB1 Exon 8)**
- **Pyruvate Kinase Deficiency (PKLR Exon 5, Basenji Variant)**
- **Pyruvate Kinase Deficiency (PKLR Exon 7, Pug Variant)**
- **Pyruvate Kinase Deficiency (PKLR Exon 7, Beagle Variant)**
- **Pyruvate Kinase Deficiency (PKLR Exon 10, Terrier Variant)**
- **Trapped Neutrophil Syndrome, TNS (VPS13B)**
- **Ligneous Membranitis, LM (PLG)**
- **Platelet Factor X Receptor Deficiency, Scott Syndrome (TMEM16F)**
- **Methemoglobinemia (CYB5R3)**
- **Congenital Hypothyroidism (TPO, Tenterfield Terrier Variant)**
- **Congenital Hypothyroidism (TPO, Rat, Toy, Hairless Terrier Variant)**
- **Complement 3 Deficiency, C3 Deficiency (C3)**
- **Severe Combined Immunodeficiency, SCID (PRKDC, Terrier Variant)**
- **Severe Combined Immunodeficiency, SCID (RAG1, Wetterhoun Variant)**
- **X-linked Severe Combined Immunodeficiency, X-SCID (IL2RG Exon 1, Basset Hound Variant)**
- **X-linked Severe Combined Immunodeficiency, X-SCID (IL2RG, Corgi Variant)**
- **Progressive Retinal Atrophy, rcd1 (PDE6B Exon 21, Irish Setter Variant)**
- **Progressive Retinal Atrophy, rcd3 (PDE6A)**
- **Progressive Retinal Atrophy, CNGA (CNGA1 Exon 9)**
- **Progressive Retinal Atrophy, PRA1 (CNGB1)**

Additional Conditions Tested

- **Progressive Retinal Atrophy (SAG)**
- **Golden Retriever Progressive Retinal Atrophy 1, GR-PRA1 (SLC4A3)**
- **Progressive Retinal Atrophy, crd1 (PDE6B, American Staffordshire Terrier Variant)**
- **X-Linked Progressive Retinal Atrophy 1, XL-PRA1 (RPGR)**
- **Progressive Retinal Atrophy, PRA3 (FAM161A)**
- **Collie Eye Anomaly, Choroidal Hypoplasia, CEA (NHEJ1)**
- **Day Blindness, Cone Degeneration, Achromatopsia (CNGB3 Exon 6, German Shorthaired Pointer Variant)**
- **Achromatopsia (CNGA3 Exon 7, German Shepherd Variant)**
- **Autosomal Dominant Progressive Retinal Atrophy (RHO)**
- **Canine Multifocal Retinopathy, cmr1 (BEST1 Exon 2)**
- **Canine Multifocal Retinopathy, cmr2 (BEST1 Exon 5, Coton de Tulear Variant)**
- **Canine Multifocal Retinopathy, cmr3 (BEST1 Exon 10 Deletion, Finnish and Swedish Lapphund, Lapponian Herder Variant)**
- **Primary Open Angle Glaucoma (ADAMTS10 Exon 9, Norwegian Elkhound Variant)**
- **Primary Open Angle Glaucoma (ADAMTS10 Exon 17, Beagle Variant)**
- **Primary Open Angle Glaucoma (ADAMTS17 Exon 11, Basset Fauve de Bretagne Variant)**
- **Primary Open Angle Glaucoma and Primary Lens Luxation (ADAMTS17 Exon 2, Chinese Shar-Pei Variant)**
- **Goniodysgenesis and Glaucoma, Pectinate Ligament Dysplasia, PLD (OLFM3)**
- **Hereditary Cataracts, Early-Onset Cataracts, Juvenile Cataracts (HSF4 Exon 9, Australian Shepherd Variant)**
- **Primary Lens Luxation (ADAMTS17)**
- **Congenital Stationary Night Blindness (RPE65, Briard Variant)**

Additional Conditions Tested

- Congenital Stationary Night Blindness (LRIT3, Beagle Variant)
- 2,8-Dihydroxyadenine Urolithiasis, 2,8-DHA Urolithiasis (APRT)
- Cystinuria Type I-A (SLC3A1, Newfoundland Variant)
- Cystinuria Type II-A (SLC3A1, Australian Cattle Dog Variant)
- Cystinuria Type II-B (SLC7A9, Miniature Pinscher Variant)
- Polycystic Kidney Disease, PKD (PKD1)
- Primary Hyperoxaluria (AGXT)
- Protein Losing Nephropathy, PLN (NPHS1)
- X-Linked Hereditary Nephropathy, XLHN (COL4A5 Exon 35, Samoyed Variant 2)
- Primary Ciliary Dyskinesia, PCD (CCDC39 Exon 3, Old English Sheepdog Variant)
- Primary Ciliary Dyskinesia, PCD (NME5, Alaskan Malamute Variant)
- X-linked Ectodermal Dysplasia, Anhidrotic Ectodermal Dysplasia, XHED (EDA Intron 8)
- Renal Cystadenocarcinoma and Nodular Dermatofibrosis, RCND (FLCN Exon 7)
- Canine Fucosidosis (FUCA1)
- Glycogen Storage Disease Type II, Pompe's Disease, GSD II (GAA, Finnish and Swedish Lapphund, Lapponian Herder Variant)
- Glycogen Storage Disease Type IA, Von Gierke Disease, GSD IA (G6PC, Maltese Variant)
- Glycogen Storage Disease Type IIIA, GSD IIIA (AGL, Curly Coated Retriever Variant)
- Mucopolysaccharidosis Type IIIA, Sanfilippo Syndrome Type A, MPS IIIA (SGSH Exon 6, Dachshund Variant)
- Mucopolysaccharidosis Type IIIA, Sanfilippo Syndrome Type A, MPS IIIA (SGSH Exon 6, New Zealand Huntaway Variant)
- Mucopolysaccharidosis Type VII, Sly Syndrome, MPS VII (GUSB Exon 5, Terrier Brasileiro Variant)

Additional Conditions Tested

- Mucopolysaccharidosis Type VII, Sly Syndrome, MPS VII (GUSB Exon 3, German Shepherd Variant)
- Glycogen storage disease Type VII, Phosphofructokinase Deficiency, PFK Deficiency (PFKM, Wachtelhund Variant)
- Lagotto Storage Disease (ATG4D)
- Neuronal Ceroid Lipofuscinosis 1, NCL 1 (PPT1 Exon 8, Dachshund Variant 1)
- Neuronal Ceroid Lipofuscinosis 2, NCL 2 (TPP1 Exon 4, Dachshund Variant 2)
- Neuronal Ceroid Lipofuscinosis, Cerebellar Ataxia, NCL4A (ARSG Exon 2, American Staffordshire Terrier Variant)
- Neuronal Ceroid Lipofuscinosis 5, NCL 5 (CLN5 Exon 4 SNP, Border Collie Variant)
- Neuronal Ceroid Lipofuscinosis 6, NCL 6 (CLN6 Exon 7, Australian Shepherd Variant)
- Neuronal Ceroid Lipofuscinosis 8, NCL 8 (CLN8 Exon 2, English Setter Variant)
- Neuronal Ceroid Lipofuscinosis 7, NCL 7 (MFSD8, Chihuahua and Chinese Crested Variant)
- Neuronal Ceroid Lipofuscinosis 8, NCL 8 (CLN8, Australian Shepherd Variant)
- Neuronal Ceroid Lipofuscinosis 10, NCL 10 (CTSD Exon 5, American Bulldog Variant)
- Neuronal Ceroid Lipofuscinosis 5, NCL 5 (CLN5 Exon 4 Deletion, Golden Retriever Variant)
- Adult-Onset Neuronal Ceroid Lipofuscinosis, NCL A, NCL 12 (ATP13A2, Tibetan Terrier Variant)
- Late-Onset Neuronal Ceroid Lipofuscinosis, NCL 12 (ATP13A2, Australian Cattle Dog Variant)
- GM1 Gangliosidosis (GLB1 Exon 15, Shiba Inu Variant)
- GM1 Gangliosidosis (GLB1 Exon 15, Alaskan Husky Variant)
- GM1 Gangliosidosis (GLB1 Exon 2, Portuguese Water Dog Variant)
- GM2 Gangliosidosis (HEXA, Japanese Chin Variant)
- Globoid Cell Leukodystrophy, Krabbe disease (GALC Exon 5, Terrier Variant)

Additional Conditions Tested

- Autosomal Recessive Amelogenesis Imperfecta, Familial Enamel Hypoplasia (ENAM Deletion, Italian Greyhound Variant)
- Autosomal Recessive Amelogenesis Imperfecta, Familial Enamel Hypoplasia (ENAM SNP, Parson Russell Terrier Variant)
- Persistent Mullerian Duct Syndrome, PMDS (AMHR2)
- Deafness and Vestibular Syndrome of Dobermans, DVDob, DINGS (MYO7A)
- Shar-Pei Autoinflammatory Disease, SPAID, Shar-Pei Fever (MTBP)
- Neonatal Interstitial Lung Disease (LAMP3)
- Alaskan Husky Encephalopathy, Subacute Necrotizing Encephalomyelopathy (SLC19A3)
- Cerebellar Abiotrophy, Neonatal Cerebellar Cortical Degeneration, NCCD (SPTBN2, Beagle Variant)
- Cerebellar Ataxia, Progressive Early-Onset Cerebellar Ataxia (SEL1L, Finnish Hound Variant)
- Cerebellar Hypoplasia (VLDLR, Eurasier Variant)
- Spinocerebellar Ataxia, Late-Onset Ataxia, LoSCA (CAPN1)
- Spinocerebellar Ataxia with Myokymia and/or Seizures (KCNJ10)
- Hereditary Ataxia, Cerebellar Degeneration (RAB24, Old English Sheepdog and Gordon Setter Variant)
- Benign Familial Juvenile Epilepsy, Remitting Focal Epilepsy (LGI2)
- Degenerative Myelopathy, DM (SOD1A)
- Fetal-Onset Neonatal Neuroaxonal Dystrophy (MFN2, Giant Schnauzer Variant)
- Hypomyelination and Tremors (FNIP2, Weimaraner Variant)
- Shaking Puppy Syndrome, X-linked Generalized Tremor Syndrome (PLP1, English Springer Spaniel Variant)
- Neuroaxonal Dystrophy, NAD (TECPR2, Spanish Water Dog Variant)
- Neuroaxonal Dystrophy, NAD (VPS11, Rottweiler Variant)

Additional Conditions Tested

- **L-2-Hydroxyglutaricaciduria, L2HGA (L2HGDH, Staffordshire Bull Terrier Variant)**
- **Alaskan Malamute Polyneuropathy, AMPN (NDRG1 SNP)**
- **Narcolepsy (HCRTR2 Exon 1, Dachshund Variant)**
- **Progressive Neuronal Abiotrophy, Canine Multiple System Degeneration, CMSD (SERAC1 Exon 15, Kerry Blue Terrier Variant)**
- **Progressive Neuronal Abiotrophy, Canine Multiple System Degeneration, CMSD (SERAC1 Exon 4, Chinese Crested Variant)**
- **Juvenile Laryngeal Paralysis and Polyneuropathy, Polyneuropathy with Ocular Abnormalities and Neuronal Vacuolation, POANV (RAB3GAP1, Rottweiler Variant)**
- **Sensory Neuropathy (FAM134B, Border Collie Variant)**
- **Juvenile-Onset Polyneuropathy, Leonberger Polyneuropathy 1, LPN1 (LPN1, ARHGEF10)**
- **Juvenile Myoclonic Epilepsy (DIRAS1)**
- **Juvenile-Onset Polyneuropathy, Leonberger Polyneuropathy 2, LPN2 (GJA9)**
- **Spongy Degeneration with Cerebellar Ataxia 1, SDCA1, SeSAME/EAST Syndrome (KCNJ10)**
- **Spongy Degeneration with Cerebellar Ataxia 2, SDCA2 (ATP1B2)**
- **Dilated Cardiomyopathy, DCM1 (PDK4, Doberman Pinscher Variant 1)**
- **Dilated Cardiomyopathy, DCM2 (TTN, Doberman Pinscher Variant 2)**
- **Long QT Syndrome (KCNQ1)**
- **Cardiomyopathy and Juvenile Mortality (YARS2)**
- **Muscular Dystrophy (DMD, Golden Retriever Variant)**
- **Limb Girdle Muscular Dystrophy (SGCD, Boston Terrier Variant)**
- **Inherited Myopathy of Great Danes (BIN1)**
- **Myostatin Deficiency, Bully Whippet Syndrome (MSTN)**

Additional Conditions Tested

- Myotonia Congenita (CLCN1 Exon 7, Miniature Schnauzer Variant)
- Myotonia Congenita (CLCN1 Exon 23, Australian Cattle Dog Variant)
- Inflammatory Myopathy (SLC25A12)
- Hypocatalasia, Acatalasemia (CAT)
- Pyruvate Dehydrogenase Deficiency (PDP1, Spaniel Variant)
- Malignant Hyperthermia (RYR1)
- Imerslund-Grasbeck Syndrome, Selective Cobalamin Malabsorption (CUBN Exon 53, Border Collie Variant)
- Imerslund-Grasbeck Syndrome, Selective Cobalamin Malabsorption (CUBN Exon 8, Beagle Variant)
- Inherited Selected Cobalamin Malabsorption with Proteinuria (CUBN, Komondor Variant)
- Lundehund Syndrome (LEPREL1)
- Congenital Myasthenic Syndrome, CMS (CHAT, Old Danish Pointing Dog Variant)
- Congenital Myasthenic Syndrome, CMS (CHRNE, Jack Russell Terrier Variant)
- Congenital Myasthenic Syndrome, CMS (COLQ, Golden Retriever Variant)
- Myasthenia Gravis-Like Syndrome (CHRNE, Heideterrier Variant)
- Paroxysmal Dyskinesia, PxD (PIGN)
- Demyelinating Polyneuropathy (SBF2/MTRM13)
- Dystrophic Epidermolysis Bullosa (COL7A1, Golden Retriever Variant)
- Dystrophic Epidermolysis Bullosa (COL7A1, Central Asian Shepherd Dog Variant)
- Ectodermal Dysplasia, Skin Fragility Syndrome (PKP1, Chesapeake Bay Retriever Variant)
- Ichthyosis, Epidermolytic Hyperkeratosis (KRT10, Terrier Variant)

Additional Conditions Tested

- **Ichthyosis, ICH1 (PNPLA1, Golden Retriever Variant)**
- **Ichthyosis (SLC27A4, Great Dane Variant)**
- **Ichthyosis (NIPAL4, American Bulldog Variant)**
- **Focal Non-Epidermolytic Palmoplantar Keratoderma, Pachyonychia Congenita (KRT16, Dogue de Bordeaux Variant)**
- **Hereditary Footpad Hyperkeratosis (FAM83G, Terrier and Kromfohrlander Variant)**
- **Hereditary Footpad Hyperkeratosis (DSG1, Rottweiler Variant)**
- **Musladin-Lueke Syndrome, MLS (ADAMTSL2)**
- **Oculocutaneous Albinism, OCA (SLC45A2, Small Breed Variant)**
- **Bald Thigh Syndrome (IGFBP5)**
- **Lethal Acrodermatitis, LAD (MKLN1)**
- **Ehlers Danlos (ADAMTS2, Doberman Pinscher Variant)**
- **Cleft Lip and/or Cleft Palate (ADAMTS20, Nova Scotia Duck Tolling Retriever Variant)**
- **Hereditary Vitamin D-Resistant Rickets (VDR)**
- **Osteogenesis Imperfecta, Brittle Bone Disease (COL1A2, Beagle Variant)**
- **Osteogenesis Imperfecta, Brittle Bone Disease (SERPINH1, Dachshund Variant)**
- **Osteogenesis Imperfecta, Brittle Bone Disease (COL1A1, Golden Retriever Variant)**
- **Craniomandibular Osteopathy, CMO (SLC37A2)**
- **Raine Syndrome, Canine Dental Hypomineralization Syndrome (FAM20C)**
- **Chondrodystrophy (ITGA10, Norwegian Elkhound and Karelian Bear Dog Variant)**

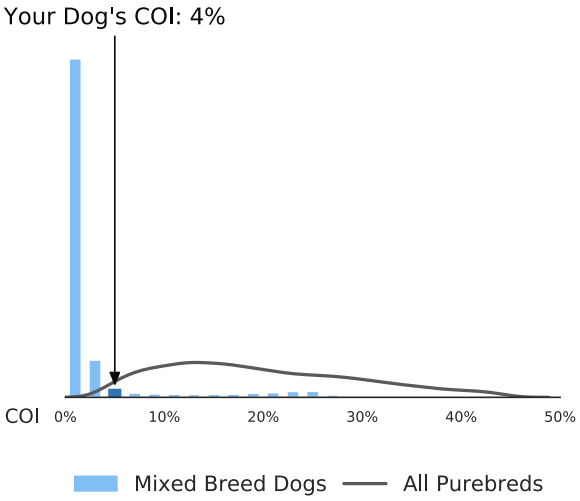
Genetic Diversity and Inbreeding

Coefficient of Inbreeding (COI)

Genetic Result: 4%

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).