

Pair Predictor

Choose a sire and dam from your breeding program, and we'll predict the litter's genetic health conditions, expected COI, and coat colors.

Sire

Zuko

Dam

"Jenna" Lykosia Reckless


CALCULATE

Genetic health conditions

18 results



We've compared the genotypes for Zuko and "Jenna" Lykosia Reckless Abandon to identify potential health risks for their offspring. The predictions are below. Select any condition to read about it in detail.

 **Clear** (18 results with the probability of all clear puppies)

Achromatopsia

Identified in German Shepherd Dogs



Alaskan Malamute Polyneuropathy, AMPN

Identified in Alaskan Malamutes



Canine Leukocyte Adhesion Deficiency Type III, CLAD III

Identified in German Shepherd Dogs



Day Blindness, Cone Degeneration, Achromatopsia

Identified in Alaskan Malamutes and Siberian Huskies



Degenerative Myelopathy, DM

Identified in German Shepherd Dogs and Siberian Huskies



Factor VII Deficiency
Identified in Alaskan Malamutes



Factor VIII Deficiency, Hemophilia A
Identified in German Shepherd Dogs



Factor VIII Deficiency, Hemophilia A
Identified in German Shepherd Dogs



GM1 Gangliosidosis
Identified in Siberian Huskies



Hyperuricosuria and Hyperuricemia or Urolithiasis, HUU
Identified in German Shepherd Dogs



Ichthyosis
Identified in German Shepherd Dogs



MDR1 Drug Sensitivity
Identified in German Shepherd Dogs



Mucopolysaccharidosis Type VII, Sly Syndrome, MPS VII
Identified in German Shepherd Dogs



Platelet Factor X Receptor Deficiency, Scott Syndrome
Identified in German Shepherd Dogs



Primary Ciliary Dyskinesia, PCD
Identified in Alaskan Malamutes



Renal Cystadenocarcinoma and Nodular Dermatofibrosis, RCND
Identified in German Shepherd Dogs



X-linked Ectodermal Dysplasia, Anhidrotic Ectodermal Dysplasia, XHED
Identified in German Shepherd Dogs



X-Linked Progressive Retinal Atrophy 1, XL-PRA1
Identified in Siberian Huskies



○ No predictions available; not breed relevant

Congenital Dyserythropoietic Anemia and Polymyopathy



Congenital Muscular Dystrophy



Copper Toxicosis (Accumulating)



Darier Disease



Ehlers-Danlos Syndrome (EDS)



Glycogen Storage Disease Type IA, Von Gierke Disease, GSD IA



Hereditary Ataxia



Hereditary Cataracts, Early-Onset Cataracts, Juvenile Cataracts



Hereditary Cerebellar Ataxia



Ichthyosis, ICH2



Laryngeal Paralysis and Polyneuropathy



Medium-Chain Acyl-CoA Dehydrogenase Deficiency, MCADD



Muscular Dystrophy-Dystroglycanopathy



Myotonia Congenita



Primary Ciliary Dyskinesia, PCD >

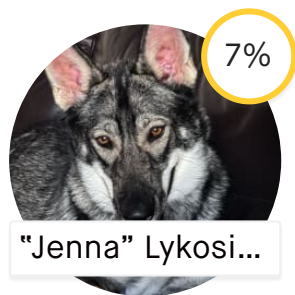
Progressive Retinal Atrophy 5, PRA5 >

Expected litter COI (eCOI) ^

eCOI: 8% · Average breed COI: --%

Genetic coefficient of inbreeding (COI) measures the proportion of a dog's genome in which the dam's and sire's genes are identical by descent. All else being equal, a lower COI has been correlated to improved health and a longer lifespan ([Bannasch et al 2021](#), [Yordy et al 2020](#)).

The expected coefficient of inbreeding (eCOI) for this pair's offspring is 8%.



How to apply genetic eCOI

Compare the eCOI to the COI of the sire and dam to identify if the degree of inbreeding present in your lines will increase or decrease based upon the proposed mating.

Use Pair Predictor to explore how eCOI may change when matching different sires and/or dams. Embark recommends testing the puppies in the litter since the actual COI will vary per individual.

The impact of inbreeding should be one factor when choosing which dogs to use in a breeding program, in addition to genetic health risks, conformation, temperament, and other selection criteria.

[Watch: Inbreeding explained](#) →

Coat Predictions

2 results



We've compared the genotypes for "Jenna" Lykosia Reckless Abandon and Zuko to identify the predicted coat color of their offspring.

| Locus | Sire | Dam |
|-------|-------------------------------|-------------------------------|
| E | E ^a E ^a | EE |
| K | k ^y k ^y | k ^y k ^y |
| A | a ^w a | a ^w a |
| B | BB | BB |
| D | DD | DD |

A number of genes are known to affect coat color in dogs. They all interact and in some cases other, often unknown, genetic effects may also influence color and pattern. We cannot yet test for all color patterns, like some types of spotting and ticking, and do not currently account for genetic differences that may impact the coat of a particular breed differently than that of the average dog in our litter predictions.

These results are calculated probabilities meant to serve as one of many factors in your breeding decisions.

E Locus: 100% E^aE

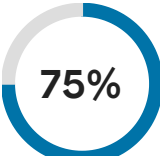
K Locus: 100% k^yk^y

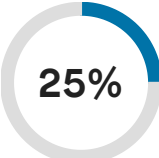
A Locus: 25% a^wa^w, 50% a^wa, 25% aa

B Locus: 100% BB

D Locus: 100% DD

Based on the above information, we predict the following possible outcome:*

 **75%** 75% of the litter is predicted to have a black agouti coat with black pigment.

 **25%** 25% of the litter is predicted to have a solid black coat with black pigment.

***All predictions are rounded to the nearest whole number and may not add up to 100%.**

Coat color modifiers, like merle and roan, are not included. Learn more about how you can manually predict these traits: [How can I predict the coat traits of my future puppies?](#) or [contact us](#) if you need assistance.

For more details on Zuko's and "Jenna" Lykosia Reckless Abandon's coats, please refer to the trait results in their individual profiles.

Was this information helpful?

[Yes](#)

[No](#)

[Educational resources](#)

