



## Eurasier Genetic Diversity

Most modern dog breeds have been established over the last 200 years. Due to the small number of founder dogs and breeding practices (including closed stud books), the average COI (coefficient of inbreeding) for pedigree breeds is reported to be around 25% (genomic sequenced) - the genetic equivalent of a dog produced from a father to daughter mating, or the mating of full-brother/sister. Inbreeding has been found to have adverse effects on health. Studies suggest correlations between rates of inbreeding, disease and morbidity.

The Eurasier is a relatively new breed whose foundations began in 1960. Studies have found that the average genomic sequenced COI for Eurasiers is around 18% - 20%. Although lower than the average of all pedigree breeds, this number is still too high. Efforts must be increased to preserve and improve genetic diversity in the breed - this means being mindful of COI when planning pairings.

Using only the most recent five generations to calculate COI (as is often done) can underrepresent the actual level of inbreeding 5 - 10 fold. Short-range pedigrees cannot account for the relationships between the earlier ancestors. We recommend attempting to obtain the most accurate representation of COI, using databases that have more complete data and the functionality to calculate complete COI. The ESUK have a database with such capabilities, and although the database is not public, we welcome enquiries from members and non-members alike for this information. A public, very extensive database that can calculate up to 9 generations can be found at <https://www.eurasierdatenbank.de/home.php>; language options are German, English & Dutch. This is a very good research option; however, nine generations do not typically represent a complete pedigree, and we would still recommend contacting us for a full pedigree COI calculation. The average calculated COI (full pedigree) in the ESUK database is 19%, which interestingly aligns with the genomic sequenced estimates of the breed's genetic diversity in studies.

Please contact [eurasierhealth@gmail.com](mailto:eurasierhealth@gmail.com) for more information.

For more information about genetic testing of COI please see <https://embarkvet.com/breeders/>

Bannasch et al, 2021. The effect of inbreeding, body size and morphology on health in dog breeds. *Canine Medicine and Genetics* 8: 12. doi.org/10.1186/s40575-021-00111-4.