



Breeding & Population Health Reference

COI, Standard Poodle autoimmune risk, and hip screening - none of it on a color or DNA health

Coefficient of Inbreeding (COI)

COI is the probability that two alleles at a locus are identical because they descend from a shared ancestor, not by chance. Higher COI means less of the breed's genetic variation survives in that dog.

- Pedigree-based COI (Wright method): only as accurate as the pedigree is deep and complete. A shallow pedigree always reads LOW, never high.
- Genomic COI (from a SNP panel): measured directly from runs of homozygosity in the dog's own DNA - not dependent on paperwork.
- An AKC Certified Pedigree runs only 4 generations. Treat 10 generations, where records allow, as the working depth for a meaningful number.

Standard Poodle autoimmune risk - correlated, not gene-mapped

Disease	First documented	Affected vs population COI	Recent-era pattern
Sebacious adenitis	1960s	17.7% vs 12.7%	Rose further, to roughly 26%, by the 1970s-80s. Association held and strengthened.
Addison's disease	1970s	27.4% vs 15.3%	Narrowed to roughly 13.7%, near the population average, by the 2000s-2010s.

Correlated with inbreeding - not a mapped gene

Neither disease has a validated DNA test. A related study (Pedersen 2012) found no single DLA haplotype distinguished sebaceous-adenitis-affected dogs from healthy controls - the signal that holds up, in 61 cases against 314 controls, is overall relatedness, not a discrete variant.

Hip dysplasia: OFA vs PennHIP - no DNA test exists

Hip dysplasia is polygenic and multifactorial. Heritability averages 0.57 (range 0.46-0.76) across a 60-breed, million-record analysis (Oberbauer et al. 2017). Environment - growth rate, exercise - shapes how much of that liability shows. Screening the joint is the only real read; it is not a DNA line.

	OFA	PennHIP
Measures	Subjective conformation from one hip-extended film, graded by a radiologist panel	Quantitative joint laxity (Distraction Index) from three films, including a distraction view
Result	Seven-point grade: Excellent to Severe	A number (DI), ranked against a breed-specific percentile
Minimum age	24 months for official certification (preliminary reads earlier)	16 weeks

THE POODLE GENETICS LAB REFERENCE SET

E & B Loci - Merle Health Risk - Phantom Matrix - Silver & Blue - Parti Planner - Full Loci Card
Full guides, the calculator and sources at poodlegenetics.com/genetics-guide

- A family history of sebaceous adenitis or Addison's is one input, not an automatic disqualification - neither is a mapped single-gene recessive.

■ A genomic diversity panel (e.g. UC Davis VGL) measures a specific pairing's relatedness directly, rather than assuming the breed's reputation applies to every dog in it.