SmartChart

Tool #7: Genetic Defects

1. Autosomal dominant and recessive genes can be found on any chromosome except the sex chromosomes.

2. Autosomal recesives are the most common mode of inheritance for genetic defects in dogs.

3. For autosomal recessive defects, genes must come from both parents.

4. Autosomal recessive defects may skip one or two generations.

5. For autosomal dominant defects, only one copy of the gene from either the sire or dam is needed to produce the defect.

6. For sex-linked recessive trait, an affected dam mated to a normal sire will produce all affected male offspring.

7. For a sex-linked recessive trait, affected males pass the gene on to none of their sons and to all of their daughters.

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8. A female can be affected with a sex-linked recessive when the dam is a carrier and the sire is affected.

9. A large number of genetic diseases are probably polygenic.

10. Polygenic defects must come from both the sire and the dam and may skip generations.

11. threshold defects are polygenic and require a certain number of genes to be inherited for the trait to be expressed.

12. Early onset defects are easier to control than late onset ones.

13. Inbreeding and linebreeding do not cause disease but they may bring harmful recessives to the surface in the form of genetic defects.

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14. Breeders should know the basics of genetics to more safely inbreed and linebreed.

15. An open registry provides the phenotype and genotype (when known) of each dog.

16. A closed registry only gives names of dogs that are normal for certain genetic conditions.

17. With some genetic defects in the dog, outcrossing can produce the defect as easily as inbreeding.

18. In general, dogs that are carriers of recessives are not able to be identified unless they produce an affected animal.

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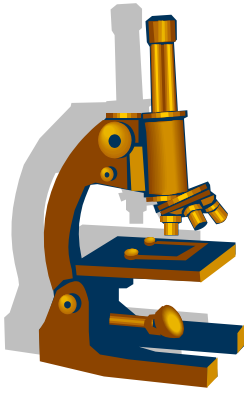
19. A dog becomes a proven carrier even if it has produced just one affected offspring.



21. The littermate of an animal affected with an autosomal recessive defect has a 66.6% chance of being a carrier for that defect.

20. Any offspring of a dog affected with an autosomal recessive defect is automatically a carrier.