



# Australian Shepherd Health & Genetics Institute, Inc



1338 Trouville Ave,  
Grover Beach,  
CA 93433

Tel: 805-473-0093  
[www.ashgi.org](http://www.ashgi.org)



## Blood Clotting Disorders

### *Hemophilia*

Hemophilia is potentially lethal. It comes in two forms, termed A and B. Both are X-linked hereditary diseases, meaning the genes are on the X chromosome. Therefore females are healthy or only very mildly affected while males are severely affected. It is theoretically possible for a female to be affected if her sire was affected and her dam a carrier; if a female were to have the disease it would probably prove lethal at the time of her first estrous cycle.

The gene responsible for Hemophilia A, which governs coagulation Factor VIII, often mutates spontaneously so there will be no prior family history. One Hemophilia B gene has been identified as of this writing, but it is not the only one and it is possible that any given breed may have more than one mutation which can cause the disease. Hemophilia B arises from a deficiency of coagulation factor IX.

Both forms have been reported in Australian Shepherds but are extremely rare. Affected males should not be bred. Females who have one copy of the mutation will pass it to half of their female offspring, therefore females identified with mild hemophilia, dams of affected males and daughters of those dams should be removed from further breeding. Healthy sons may be bred of mildly affected or carrier females may be bred because they will have inherited the normal version of the gene. Breeding records of the dams and grand dams of identified carrier females should be scrutinized carefully to determine whether they were or were not themselves carriers; if male offspring succumbed to

massive internal bleeding at a young age the females should be assumed to be carriers of hemophilia.

### *Von Willebrands Disease*

Primary Von Willebrand's Disease is extremely rare in Aussies. It can also be secondary to thyroid disease, which is very common. VWD symptoms can vary from periodically problematic to life-threatening. There are three forms of primary VWD, Types I, II, and III, with Type I being the least severe and Type III being the worst.

Your veterinarian may first use a blood test. Tests of this kind are not as black-and-white as DNA tests; the results won't tell you a dog's genotype for certain. However, if the result is well into the normal range the dog is almost certainly clear. If it is borderline or ill the dog being tested may or may not have the mutation and should have the DNA test to confirm. Given the rarity of dogs with this disease in this breed, I would be inclined to "not" unless there is a relative that has been diagnosed with primary VWD. The DNA test will confirm the diagnosis.

If your Australian Shepherd is diagnosed with VWD we strongly recommend that its thyroid function be tested if that has not already been done. If there is underlying thyroid disease, the VWD likely arose from that and treating the primary disease may alleviate VWD symptoms. If the dog has primary VWD, its near relatives who are used for breeding should be tested so their status is known.