

The Genetics of Blood Disorders

1. If a female is a carrier for hemophilia $X^H X^h$ and is married to a man with hemophilia $X^h Y$, what is the probability that she will have a daughter with hemophilia?

2. A normal female marries a man who has hemophilia. (You'll need to figure out the genotypes). What percentage of their sons will have hemophilia?

3. If a female has hemophilia and is married to a normal man. What percentage of her sons will have hemophilia?

What percentage of her daughters will have hemophilia?

4. A woman with sickle cell anemia is married to a man who is a carrier for the trait ($a a \times A a$). What is the chance of their children having sickle cell anemia?

5. What is the chance that two people (both being carriers for sickle cell anemia) will have a child with the disease?

6. Von Willebrand Disease is an autosomal dominant disorder (not located on the sex chromosomes) where blood will not clot properly.
What would be the two possible genotypes of a person who has the disorder?

If a person is heterozygous for the trait (having the disease) is married to a normal spouse (dd), what is the chance that their children will have the disorder.