

Unit 7: Human Heredity

Pedigree Investigation

*Remember pedigree: How can you tell if you have a trait from either of your parents?

Introduction

A gene that is determined by an allele that is passed only on the X chromosome. The shorter X chromosomes have only one allele for a trait (like "blue" hair) and are linked to the sex chromosomes. There are only one X chromosome in the male, a male who carries a recessive recessive allele on the X chromosome will have the sex-linked condition. A female who carries a recessive allele on one X chromosome will not have the condition of that gene because she also has other X chromosomes. She will express the recessive condition only if she inherits two recessive alleles - one from each parent. The chance of inheriting a sex-linked condition are less frequently than that of a trait.

Procedure

1. Study the pedigree for hemophilia shown in Figure 1 below. In a pedigree, a square represents a male. If it is shaded, he has hemophilia. If it is clear, he has normal blood clotting.

2. How many males represented in this pedigree have hemophilia? How many males are normal?

3 males have hemophilia, 7 males have normal blood clotting

