

Pedigrees

In order to apply Mendelian genetics to humans, biologists must identify an inherited trait controlled by a single gene.

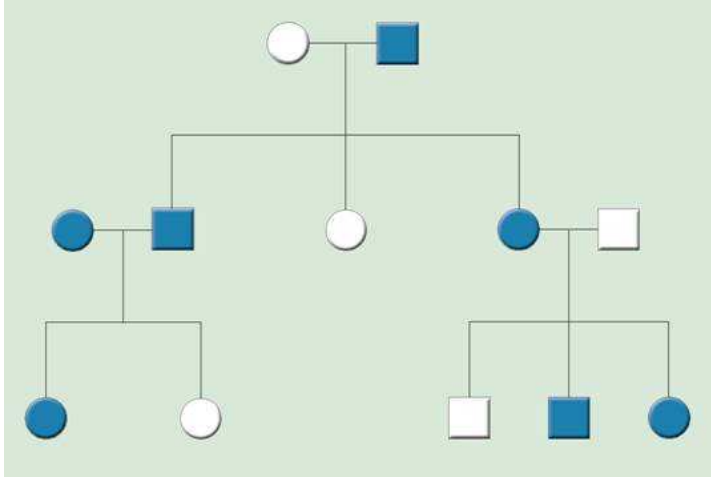
They must establish that the trait is inherited and not the result of environmental influences.

They have to study how the trait is passed from one generation to the next.

Pedigree Charts

A **pedigree** chart shows the relationships within a family.

Genetic counselors analyze pedigree charts to infer the genotypes of family members.



A square represents a male.

A circle represents a female.

A horizontal line connecting a male and a female represents a marriage.

A vertical line and a bracket connect the parents to their children.

A shaded circle or square indicates that a person expresses the recessive trait.

A circle or square that is not shaded indicates that a person expresses the dominant trait.

Generations use Roman numerals to one side of the pedigree.

Each individual also has a number - the oldest individual is on the left of each generation.

Put the genotype for each individual.

Genes and the Environment

Some obvious human traits are almost impossible to associate with single genes.

Traits, such as the shape of your eyes or ears, are polygenic, meaning they are controlled by many genes.

Many of your personal traits are only partly governed by genetics.