

Pedigree Charts

The family tree of genetics



Overview

- I. What is a pedigree?
 - a. Definition
 - b. Uses
- II. Constructing a pedigree
 - a. Symbols
 - b. Connecting the symbols
- III. Interpreting a pedigree

What is a Pedigree?

- A pedigree is a chart of the genetic history of family over several generations.
- Scientists or a genetic counselor would find out about your family history and make this chart to analyze.

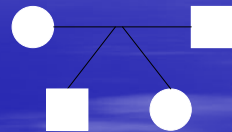
Constructing a Pedigree

- Female 
- Male 

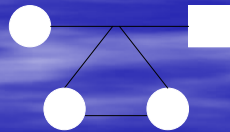
Connecting Pedigree Symbols

Examples of connected symbols:

- Fraternal twins



- Identical twins



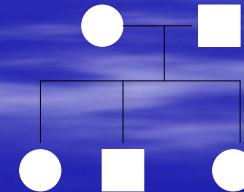
Connecting Pedigree Symbols

Examples of connected symbols:

- Married Couple

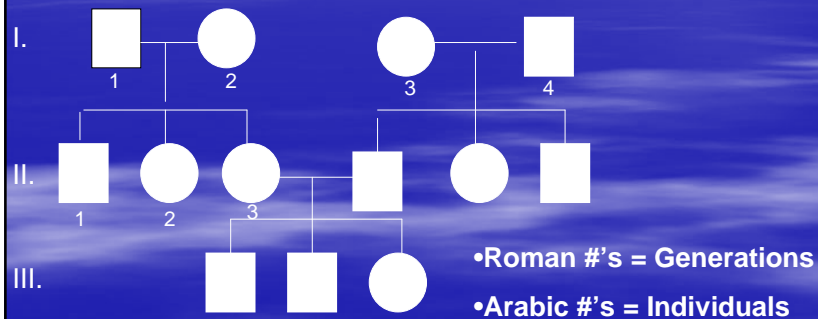


- Siblings







Example

- What does a pedigree chart look like?



Symbols in a Pedigree Chart

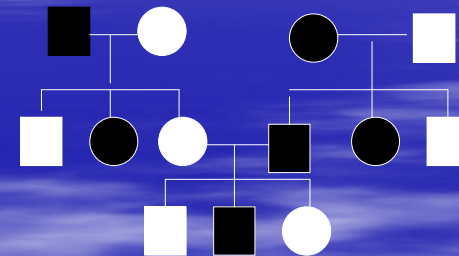
- Affected 
- X-linked 
- Autosomal carrier 
- Deceased 

Interpreting a Pedigree Chart

1. Determine if the pedigree chart shows an autosomal or X-linked disease.
 - If most of the males in the pedigree are affected the disorder is X-linked
 - If it is a 50/50 ratio between men and women the disorder is autosomal.

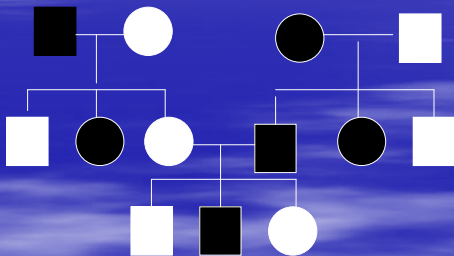
Example of Pedigree Charts

- Is it Autosomal or X-linked?



Answer

- Autosomal

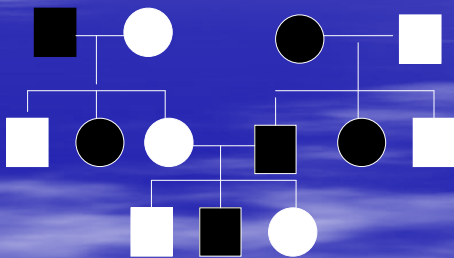


Interpreting a Pedigree Chart

2. Determine whether the disorder is dominant or recessive.
 - If the disorder is dominant, one of the parents must have the disorder.
 - If the disorder is recessive, neither parent has to have the disorder because they can be heterozygous.

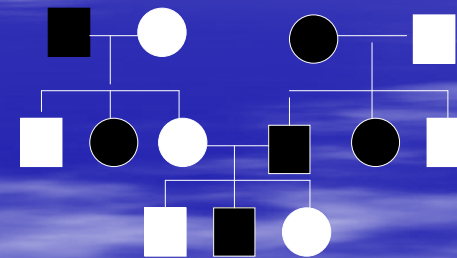
Example of Pedigree Charts

- Dominant or Recessive?



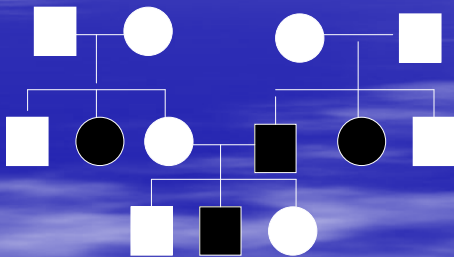
Answer

- Dominant



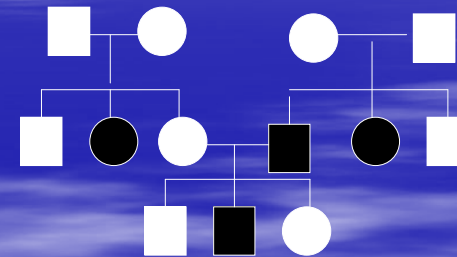
Example of Pedigree Charts

- Dominant or Recessive?



Answer

- Recessive



Summary

- Pedigrees are family trees that explain your genetic history.
- Pedigrees are used to find out the probability of a child having a disorder in a particular family.
- To begin to interpret a pedigree, determine if the disease or condition is autosomal or X-linked and dominant or recessive.