

AP BIOLOGY

TOPIC REVIEW GUIDE: DIVISION & INHERITANCE #5 HUMAN GENETIC DISORDERS AND PEDIGREES

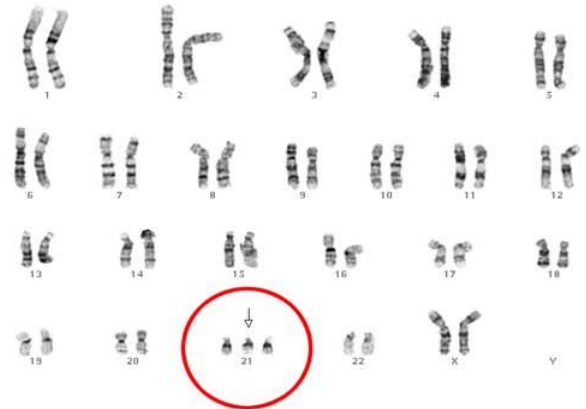
KEY CONCEPTS:

- Many human traits follow Mendelian patterns of inheritance

READ:

- Chapter 15

KEY TERMS: Here is a list of key terms and concepts you will hear about and see during the chapter readings. Get to know them!



Pedigree

Cystic fibrosis

Huntington's disease

Chorionic villus sampling

Carriers

Phenylketonuria (PKU)

Multifactorial disorders

Color-blindness

Tay-Sachs disease

Sickle-cell disease

Genetic counseling

Hemophilia

Albinism

Achondroplasia

Amniocentesis

Duchenne muscular dystrophy

QUESTIONS FOR YOUR BILL:

Mendelian Inheritance in Humans

1. Explain why studies of human inheritance are not as easily conducted as Mendel's work with peas.
2. Why are pedigrees useful for tracking the inheritance of diseases and other traits?
3. Explain how a *lethal recessive allele* can be maintained in a population.
4. Explain why *lethal dominant genes* are much rarer than lethal recessive genes.
5. Explain the mode of inheritance (autosomal dominant, autosomal recessive, sex-linked, sex-limited), the cause, the symptoms, and current treatments of each of the following genetic conditions:
 - a. Cystic Fibrosis
 - b. Hemophilia
 - c. Huntington's Disease
 - d. Sickle Cell Disease
6. *Huntington's disease* an example of a late-acting lethal dominant in humans. Explain how it may have escaped elimination by natural selection.
7. Explain why sex-linked diseases are more common in human males.
8. Define and give a few examples of *multifactorial disorders* in humans.

SUPPLEMENTARY RESOURCES: Click the links below for more information to help you learn more about this lesson.

Interactives

- Utah Learn Genetics: [Human Genetic Disorder Library](#)
- Zerobio.com: [Drop and Drag Pedigree Problems](#)
- McGraw Hill: [Practice Pedigree Problems](#)
- National Institutes of Health (NIH) – [National Human Genome Research Institute – Genetic Disorders](#)

- Scitable by Nature: [Genetic Disorder Resources](#)
- March of Dimes: [Birth Defects](#) (use selection bar to chose learn about various genetics diseases)