

Modern Genetics ▪ *Guided Reading and Study*

Human Genetic Disorders

This section describes how changes in the DNA of some genes have affected certain traits in humans.

Use Target Reading Skills

As you read, compare and contrast the types of genetic disorders by completing the table below.

Disorder	Description	Cause
Cystic fibrosis	Abnormally thick mucus	Loss of three DNA bases
Sickle-cell disease		
Hemophilia		
Down syndrome		

Causes of Genetic Disorders

1. An abnormal condition that a person inherits through genes or chromosomes is called a(n) _____.
2. What causes genetic disorders?

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3. What is cystic fibrosis?

4. Is the following sentence true or false? Cystic fibrosis is caused by a mutation that is the dominant allele of a gene. _____

5. Circle the letter of the protein that is not normal in people with sickle-cell disease.

- a. mucus
b. hemoglobin
c. red blood cells
d. clotting protein

6. The allele for the sickle-cell trait is _____ with the normal allele.

7. Is the following sentence true or false? Hemophilia is caused by a dominant allele on the X chromosome. _____

8. Hemophilia occurs more often in _____.

9. Circle the letter of the cause of Down syndrome.

- a. recessive allele
b. dominant allele
c. too many chromosomes
d. too few chromosomes

10. Down syndrome most often occurs when _____ fail to separate properly during meiosis.

Pedigrees

11. A chart or “family tree” that tracks which members of a family have a certain trait is called a(n) _____.

12. Is the following sentence true or false? On a pedigree, a circle represents a male. _____

Managing Genetic Disorders

13. How are people helped when they have a genetic disorder?

14. A _____ is a picture of all the chromosomes in a cell.