

Read the following sections of your Biology Text Book. Answer the questions into your biology notebook. (*this question is not directly answered in the book use your powerful brain)

Ch 14-1 p345 Recessive Alleles (PKU and Tay Sachs)

1. How are the mental disabilities associated with PKU avoided?
2. Draw a Punnett Square that shows the possible genotypes of the offspring from a cross between a person heterozygous for PKU and a person without PKU. What is the chance they will have a child with PKU?
3. *PKU has two components to it, genetic and _____
4. Couples starting families who are of Eastern & Central European ancestry would probably be encouraged by their doctors to be tested for which gene?
5. Use Figure 14-6 to answer this question. Is it possible for two people who have never heard of Cystic fibrosis to have a baby with Cystic fibrosis? Explain?
6. *If Tay Sachs is deadly in the first few years of life, why hasn't this disorder been eliminated from the human population?

p346 Dominant Alleles

7. Is it possible for two people who are of normal height to have a child affected by dwarfism? Explain
8. *If Dwarfism and Huntington's Disease are both dominant traits, why don't we see more people with these disorders?
9. *If Huntington's disease causes death, why hasn't this dominant allele been eliminated from the human population?

p346 From Gene to Molecule: Cystic Fibrosis and Sickle Cell Disease

10. What are the major symptoms of cystic fibrosis?
11. What is the cause of these symptoms? (Describe the protein involved and its role.)
12. Do people that are heterozygous for CF show symptoms? Explain
13. *Why are some of the genetic disorders (Tay Sachs and CF) found mainly in people with a certain ancestry?
14. Using sickle cell disease as an example, explain how a small change in a person's DNA can cause a genetic disorder.
15. In what part of the world is it advantageous to be heterozygous for sickle cell?
16. What is happening in the body of a sickle cell heterozygote to put them at an advantage?

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