

1. Pam has a colorblind daughter with her colorblind husband, Matt. Pam's dad is colorblind but she and her mother are not. Matt learned in biology that it is unusual for females to be colorblind. You know that colorblindness is X-linked so please explain to him why this is or is not possible.

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2. Sickle Cell Anemia is a X-linked trait. A couple comes to you questioning the possibility that a child is theirs. This is the reasoning, Nate does not have Sickle Cell Anemia and neither does his wife Liz. They have two sons; one who has the trait and one does not. Explain how this is possible.

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3. Kevin was diagnosed with Hemophilia, an X-linked disorder, at the age of 2 months. He marries Kathy who does not have the trait. They are discussing children and want to know what their chances are of the following.

- a. Having children with Hemophilia? \_\_\_\_\_
- b. Having a girl with Hemophilia? \_\_\_\_\_
- c. Having a boy with Hemophilia? \_\_\_\_\_

4. Gary has been diagnosed as colorblind since kindergarten. His parents Kim and Mark are confused because neither of them nor their parents are colorblind. Kim has three sisters who are not colorblind and Mark has two sisters who are not colorblind. The only colorblind relative is Kim's Uncle Tom. Mark is convinced that Kim has an affair and Kim is convinced they have the wrong child. Both have agreed to have tests done to determine what is going on. The first step is genetic counseling to avoid costly testing. What do you find?

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What is the next step? \_\_\_\_\_

5. Justin has been diagnosed with Huntington's disease at the age of 35. Justin and Adrienne have two children. Kelly who is a girl and John who is a boy. Who to they need to tell they will inherit the disease and whom do they need to talk about the risks of passing it on? Why do they need to discuss all of this information?

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6. Tony has blood type AB and Tina is heterozygous B. They have a child that has B blood. Is this possible, explain.

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7. Tara, the star of a soap opera, has an affair with Devin, but Tara is married to Jack. Tara gets pregnant and knows that Devin has blood type A and Jack is heterozygous B. The baby is O.

- a. What is Tara's blood type? \_\_\_\_\_
- b. Who is the father? \_\_\_\_\_

8. Walter is married and the father of three, has been in an accident. He needs blood desperately and the Red Cross has a war they are saving blood for so there is none locally for Walter to receive. His wife and children are at the hospital and volunteer to give blood. Walter is in surgery and his blood has not been tested, nor do they have time to test it. Of the following who should they get blood from and why?

- a. Wife – Blood Type AB  
b. Lisa – Blood Type B  
c. Kevin – Blood Type AB  
d. Tony – Blood Type A

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