

Cells and living organisms - Homework 1

In class you learnt about specialised cells. Read this piece of information written by a boy named Lloyd who has sickle cell anemia. Answer the questions below in your jotter



Living with sickle cell

"I have an illness called sickle cell. This means that my red blood cells are a different shape to everyone else's. Mine are sickle shaped (a sickle is a curved tool), normal blood cells are round. The shape of my cells makes it difficult for the blood to go around my body. This means that the blood, which carries oxygen around the body, travels slower and therefore less oxygen gets to where it's needed. This leaves me feeling tired. Sometimes it can cause pain in my joints. If I get too cold then parts of my body will start to hurt, so it's important I keep warm.

One day a month I have to go into Great Ormond Street Hospital's sickle cell unit and have a blood transfusion. I have one to two pints of blood which can take three to four hours. It can get boring while I'm having the blood transfusion. I'll try and watch some TV, play computer games or watch a video. The main thing I don't like is the time it takes to have the transfusion. I could be doing something else instead. But I know it's something I have to have so it's hard to say I don't like being in hospital because I know the transfusion helps me. The day after my transfusion I feel energised and I usually go to the park with my friends and play some football.

I won't let it stop me; I won't use it as an excuse. I just try and go on as normal as I can."

- 1) What shape are normal red blood cells and how do Lloyds differ? (2 marks)
- 2) What is the normal function of a red blood cell? (1 mark)
- 3) Name the 3 symptoms mentioned in the passage that Lloyd suffers from (2 marks)
- 4) Why do you think Lloyd would feel 'energised' after a transfusion?
- 5) If Lloyd receives 2 pints of blood in 1 transfusion, how many pints of blood will he receive in a year? (1 mark)
- 6) Each time a donor gives blood they donate 1 pint. How many donors would be required to help Lloyd in a 6 month period? (1 mark)
- 7) Use the internet to find out what is meant by sickle cell trait (don't include any genetic information) (1 mark)
- 8) If someone suffers from sickle cell trait what disease are they resistant to? (1 mark)