

Keeping up with the jones essay sample



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BUSTER**

Part I:

1. What two parameters are responsible for creating the movement (filtration and reabsorption) of fluid across the capillary wall? The hydrostatic pressure (or blood pressure) and osmotic pressure (water pressure) are responsible for balancing and creating the movement of fluid across the capillary wall. 2.

Find a diagram of a capillary – copy/paste and cite the source. [pic]

<http://cikgurozaini.blogspot.com/2011/01/fluid-exchange.html> 3. Under

normal circumstances, what components of the blood cross the capillary

wall? Interstitial fluid travels across capillary walls. Water and other small

solutes can also diffuse across the wall but blood cells cannot. 4. Cytokines,

like histamine and leukotrienes, are secreted by damaged cells in Dave's

ankle. How do these cytokines cause inflammation? Cytokines from injured

cells induce the expression of E-selectin on endothelial cells, which functions

similarly to P-selectin. 5. How does the application of ice to the ankle affect

blood flow through the capillaries?

The application of ice causes constriction of the capillaries. This decreases

the blood flow to the ankle and reduces swelling. 6. How does the removal of

ice from the ankle affect blood flow through the capillaries and the

cytokines? This will return the blood flow and cytokines to normal. The blood

flow will increase. 7. How does compression, which is provided by an elastic

(Ace) bandage wrapped around the damaged ankle, decrease inflammation?

The ace bandage will physically constrict the blood vessels of the ankle. This

will in turn reduce inflammation and pain. 8. How does elevation of the

damaged ankle decrease inflammation? This will increase blood flow back to

the heart and decrease the amount of blood and inflammation in the ankle.

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Part II:

1. What problems are there in Suzie's life, and does she exhibit any peculiar signs and symptoms? She has always been neglected by her parents because they pay more attention to her brother. She ran a lot but didn't eat anything and passed out. She also weighed herself for fun. 2. Why did Suzie pass out when she stood up?

She ran a lot the day before but then didn't eat anything for breakfast. 3. Why did Suzie's mother place Suzie's feet on a chair? She wanted to increase the blood flow to her head and decrease it in her feet. This is why she passed out in the first place, because there was not blood flow to her head. 4. Why did Suzie feel as if she had no energy at the doctor's office? She has not eaten anything all morning and she had drained herself the day before. 5. Make an initial speculation about Suzie's condition at this time. Assuming that your speculation is true, what do you think the doctor will find in the results of Suzie's physical examination? I believe Suzie may be anorexic because she didn't eat in the morning and she was weighing herself for fun. She also fainted and her mom didn't seem to think it was a big deal. I think the doctor will find out she is not getting the nutrients she needs. Part III:

1. What new signs and symptoms does Suzie exhibit that would concern you if you were the doctor? She does not want to take her shoes off when she weighs and something is abnormal about her blood pressure. 2. Do you wish to make any further speculation about Suzie's condition at this time?

Assuming that your speculation is true, what do you think the doctor will find in the results of Suzie's physical examination? I think the doctor will find that Suzie is very malnourished and has not been eating.

Part IV:

1. Is Suzie's weight reasonable for her height?

No, she is too small to be so tall.

2. Calculate the stroke volume of Suzie's heart, and compare it to that of a normal individual. Her stroke volume is lower than the average individual.

Suzie's is 55 and the average is around 70-80. 3. Why do you think her blood

pressure is lower than normal? Does low blood pressure explain any of

Suzie's signs and symptoms that you may have noticed? She is not getting enough nutrients to make red blood cells. Thus her blood pressure is low.

This explains her fainting. 4. Why is Suzie's hematocrit low, and why are her

red blood cells pale and immature? Suzie's hematocrit is low because she is

anemic and not getting enough iron in her diet. This can also cause her RBCs

to be pale and immature. 5. Compared with a normal, healthy person predict

the level of the following in Suzie's blood (higher, same, lower): sodium,

potassium, calcium, glucose, iron, and protein. I would say all of these would

be lower than she needs because she hasn't been eating and she has been

depleting all of these levels by running. 6. Do you wish to make any further

speculation about Suzie's condition at this time? She needs to start eating or

she will start to become severely malnourished. Part V:

1. Assuming that the ion levels in the blood plasma are similar to those in

the interstitial fluid, what is the effect of low potassium levels on the

membrane potential of Suzie's nerve and muscles? Low potassium levels can cause muscle weakness, problems in the digestive tract and heart problems.

2. Does this explain Suzie's slow heart rate and ectopic beats? Yes, low

levels of potassium can cause abnormal heart rhythms and it can also cause

the heart to not pump hard enough to move blood through the body. 3. How does low plasma calcium level account for her decreased stroke volume?

Calcium levels in a person's blood strongly correlates with a person's heart rate and stroke volume is calculated by cardiac output divided by heart rate.

4. What is the role of blood proteins in the movement of fluid between the blood and the interstitial space? Blood proteins control the rate and direction of movement of the fluid between the blood and interstitial space.

5. What would be the effect of low blood protein levels on the colloidal pressure? Muscle degeneration and an edema may occur.

6. How do low plasma protein levels produce edema?

Edema is swelling caused by build up of fluid ensnared in the body's tissues. When protein counts in the bloodstream get extremely low, there is a decrease in colloidal osmotic pressure which then allows fluid to escape from blood vessels into your tissues, resulting in edema. Part VI:

1. What conditions make Suzie a candidate for anorexia?

She has very low levels of essential nutrients that she needs. She thinks she is fat even though she is malnourished. She doesn't eat and has way too much physical activity. 2. Do you think the doctor's treatment is appropriate, or would you have admitted her into hospital? I think this is appropriate to start off with. The doctor can see if this works, and if it doesn't, Suzie can always be admitted to a hospital later. 3. When do you think Suzie should schedule her next visit to the doctor? In around 3 weeks or so, just to see if there is any noticeable improvement with Suzie's weight and parental situation.