Name _____ Date _____

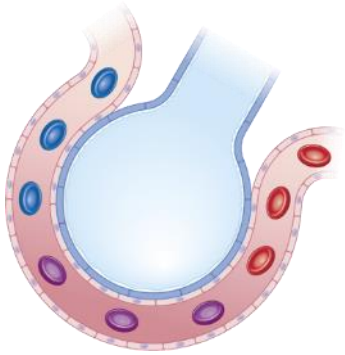
Science Mastery

Diffusion in Living Things

1. Match the common adaptation for efficient diffusion to the corresponding reason on the diagram below:

Adaptation for efficient diffusion	Reason
Large Surface area	To maintain a concentration gradient
A good blood supply	To ensure a short diffusion path
Thin walls	There is a larger area over which diffusion can take place

2. The image shows a close up of an alveolus with its blood supply.



   a. Identify the gas that will diffuse from the alveolus into the blood.

_____

   b. Identify the gas that will diffuse from the blood into the alveolus.

_____

   c. Describe how this alveolus is adapted to allow efficient diffusion.

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   d. Explain why efficient diffusion is important to the function of the alveolus.

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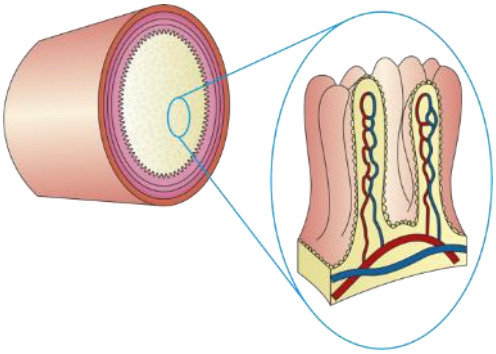
3. The image shows a close up of villi in the small intestine.



   a. Identify a substance that will diffuse from the small intestine into the blood.

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   b. Describe how these villi are adapted to allow efficient diffusion.

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   c. Explain why efficient diffusion is important to the function of the villi.

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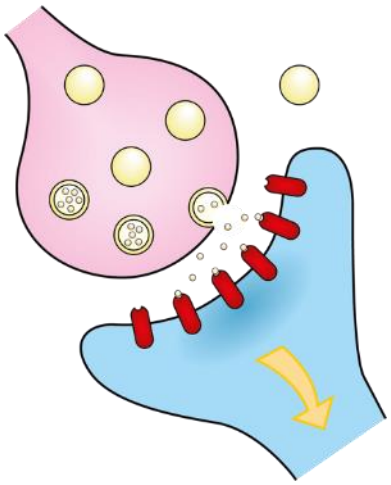
4. The image shows a close up of a synapse.



   a. Describe how this synapse is adapted to allow efficient diffusion.

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   b. Explain why efficient diffusion is important to the function of the synapse.

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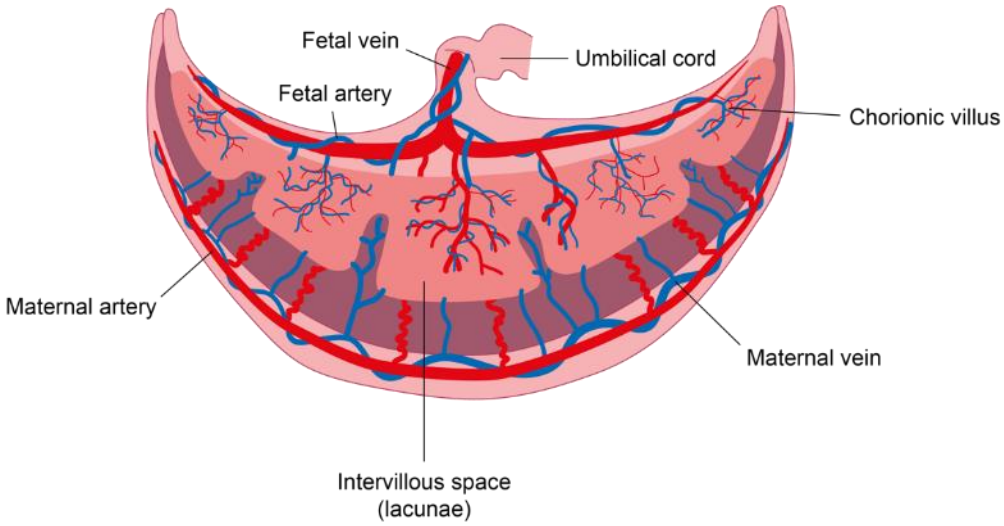
Science Mastery

5. The image below shows a placenta. Describe how it is adapted to allow efficient diffusion.



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Stretch activity: Diffusion of glucose from the small intestine into the bloodstream is not always possible. Discuss when and would this not be possible.