

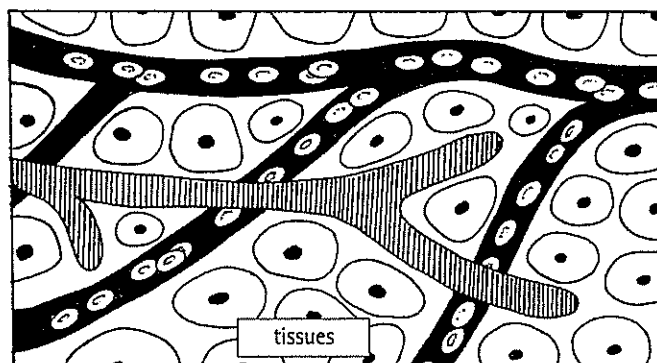
18 The Endocrine System

Subject Outline terms and phrases	peptides, steroid, target site, target cell, target tissue, target organ, adrenaline, 'fight or flight' response, thyroid stimulating hormone, thyroxine
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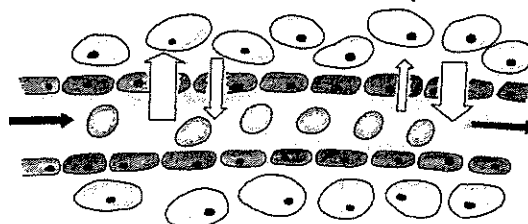
1. Complete the following table which shows different types of hormone.

Type of hormone	Name of hormone	Name of endocrine gland	Target cells	Effect
	adrenaline			
		adrenal medulla	cardiac muscle	
				increase cell metabolism
	antidiuretic hormone			
				stimulates breakdown of glycogen, increase blood sugar level
				lowers blood sugar level
	TSH		thyroid	
	aldosterone			

2. On the diagram below, label a blood capillary, a lymph capillary, and the tissue fluid.



3. Label the following on the diagram below: red blood cell, plasma, capillary wall, tissue fluid, tissue cells, movement due to osmosis, movement due to blood pressure, and direction of blood flow.

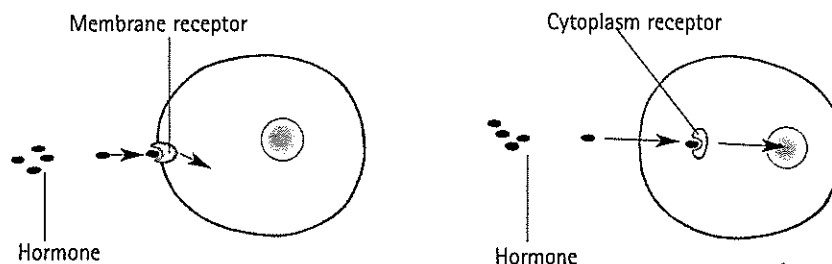


4. (a) What is a membrane receptor molecule?

(b) Explain how the distinctive shape of membrane receptor molecules allows cells to recognise other molecules. Draw a diagram to illustrate your answer.

5. Explain why a hormone which is present in blood in all parts of the body will only produce an effect on a specific cell, tissue, or organ, and **not** other cells, tissues, or organs.

6. By referring to the following diagrams, explain how water-soluble and lipid-soluble hormones produce an effect on cells.



Water-soluble hormones: _____

Lipid-soluble hormones: _____

7. (a) State two examples of hormonal responses that are stimulated by the nervous system.

(b) State two examples of hormonal responses that are stimulated by other hormonal messages.

8. (a) In the 'fight or flight' response, what do the terms 'fight' and 'flight' mean?

(b) Complete the following table to describe the responses of body structures to adrenaline in the 'fight or flight' response.

Body structure	Response to adrenaline	Effect
smooth muscle around blood vessels of skeletal muscle	dilate	increased blood flow

9. Describe the role of thyroid stimulating hormone in the production of thyroxine, including the importance of negative feedback.

10. Complete the following table which compares the action of the nervous and endocrine systems.

Communication	Pathway	Message	Site of action	Speed of action	Duration
Nervous system					
Endocrine system					

11. Explain why a nerve impulse is more appropriate than a hormonal message for controlling blinking of the eye, but a hormonal message is more appropriate than a nerve impulse for controlling the uptake of glucose from the blood by cells.

12. Explain how the hypothalamus acts as a 'bridge' between the nervous and endocrine systems.
