14.1 The Physiology of Stress and Stress-Related Illness: 10-minute Pack

AQA 7182 · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions.

1 Outline a behavioural mediator such as increased smoking, poor diet or reduced exercise linking chronic stress to heart disease.

(Total for Question 1 is 2 marks)

2 Outline the sympathomedullary pathway, naming medulla, sympathetic nerves, adrenal medulla and the catecholamines.

(Total for Question 2 is 3 marks)

3 Outline evidence for a link between chronic stress and cardiovascular disease, citing a physiological marker such as hypertension or raised cholesterol.

(Total for Question 3 is 2 marks)

4 Explain a methodological and conceptual limitation of GAS such as animal-based evidence and ignoring cognitive appraisal.

(Total for Question 4 is 2 marks)

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Mark scheme · 14.1 The Physiology of Stress and Stress-Related Illness: 10-minute Pack

Question 1

identifies a behavioural change such as increased smoking, overeating or reduced exercise under chronic stress oe **B1**

explains that such behaviours raise cardiovascular risk by increasing cholesterol, blood pressure or obesity oe **B1**

Answer: Chronic stress can lead to greater smoking, poor diet and less exercise, which raise cholesterol and blood pressure and increase obesity, thereby elevating cardiovascular risk.

Question 2

identifies the pathway as involving the sympathetic nervous system and the adrenal medulla oe **M1**

states the adrenal medulla releases adrenaline and noradrenaline (epinephrine and norepinephrine) oe **A1**

explains this produces the fight-or-flight changes such as increased heart rate and blood flow to muscles oe **A1**

Answer: Sympathetic nervous system activation stimulates the adrenal medulla to release adrenaline and noradrenaline, producing rapid fight-or-flight changes such as increased heart rate and mobilisation of energy.

Question 3

identifies evidence linking chronic stress with cardiovascular risk, e.g. studies showing chronic stress is associated with raised blood pressure or hypertension oe **B1**

states that raised blood pressure or raised cortisol combined with behavioural factors increases risk of heart disease oe **B1**

Answer: Studies show chronic stress is associated with raised blood pressure, and sustained hypertension is a risk marker for cardiovascular disease; chronic cortisol and behaviour changes can raise this risk.

Question 4

identifies reliance on animal studies or that GAS treats stress responses as uniform rather than influenced by appraisal oe **M1**

explains why this matters, e.g. animal physiology and stressors may not generalise to human psychological stress and cognitive appraisal can alter hormonal responses oe **A1**

Answer: GAS is based largely on animal experiments so findings may not generalise to humans whose stress responses are influenced by cognition and appraisal; this matters because human psychological factors can change hormonal responses and the course of stress-related illness.

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