PE.HW2 Health, Fitness and Wellbeing: Consequences of a Sedentary Lifestyle

Total Marks

AQA 8582 · Calculators not allowed · about 50 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Which of the following best describes a 'sedentary lifestyle'?

- ☐ A) A lifestyle involving long periods of sitting or inactivity with little regular physical activity
- ☐ B) A lifestyle involving regular participation in competitive sport
- ☐ C) A lifestyle that includes at least one structured exercise session per week
- ☐ D) A lifestyle focused on outdoor recreational activity

(Total for Question 1 is 1 mark)

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2 State three examples of everyday behaviours that can contribute to a sedentary lifestyle.

(Total for Question 2 is 3 marks)

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3 Sedentary lifestyles have become more common in the UK in recent decades.

(a) State what is meant by a 'sedentary lifestyle'. **(2)**

(b) Suggest two factors that have made sedentary lifestyles more common in the UK in recent decades. **(2)**

(Total for Question 3 is 4 marks)

4 State two ways a sedentary lifestyle can affect the cardiovascular system.

(Total for Question 4 is 2 marks)

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5 Which body system is most directly affected by an increased risk of high blood pressure and heart disease linked to a sedentary lifestyle?

- ☐ A) The musculoskeletal system
- ☐ B) The cardiovascular system
- ☐ C) The digestive system
- ☐ D) The nervous system

(Total for Question 5 is 1 mark)

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6 Explain how a sedentary lifestyle can increase the risk of developing type 2 diabetes.

(Total for Question 6 is 2 marks)

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7 Explain how a sedentary lifestyle can negatively affect the musculoskeletal system.

(Total for Question 7 is 3 marks)

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8 James works in an office and drives to and from work every day, sitting for around 10 hours during a typical working day.

Explain three different negative health consequences James may be at increased risk of due to his lifestyle.

(Total for Question 8 is 3 marks)

9 State two ways a sedentary lifestyle can affect a person's mental health and wellbeing.

(Total for Question 9 is 2 marks)

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10 Explain why a sedentary lifestyle is linked to a higher resting heart rate than an active lifestyle.

(Total for Question 10 is 2 marks)

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11 Which of the following is a recognised long-term health risk associated with a sedentary lifestyle?

- ☐ A) Increased risk of cardiovascular disease
- ☐ B) Increased flexibility
- ☐ C) Increased aerobic endurance
- ☐ D) Reduced resting heart rate

(Total for Question 11 is 1 mark)

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12 Discuss the negative health consequences a sedentary lifestyle could have for Callum, a 15-year-old who mainly plays video games in his free time and is driven to and from school each day, across cardiovascular, metabolic, musculoskeletal and mental health outcomes, and evaluate why becoming more physically active, even in small amounts, is likely to reduce these risks.

(Total for Question 12 is 9 marks)

13 Which of the following best describes how mainstream health guidance links a sedentary lifestyle to ill health?

- ☐ A) A sedentary lifestyle guarantees a person will develop heart disease
- ☐ B) A sedentary lifestyle increases the statistical risk of certain health conditions, without guaranteeing any individual outcome
- ☐ C) A sedentary lifestyle has no effect on long-term health
- ☐ D) A sedentary lifestyle only affects a person's fitness test results, not their long-term health

(Total for Question 13 is 1 mark)

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14 Explain one way a sedentary lifestyle could indirectly affect a person's performance in sport, for someone who does also play sport occasionally.

(Total for Question 14 is 2 marks)

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15 Suggest three practical ways a school could help reduce sedentary behaviour among students during the school day, explaining how each would help.

(Total for Question 15 is 3 marks)

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16 State two long-term health conditions that mainstream health guidance links to prolonged sedentary behaviour.

(Total for Question 16 is 2 marks)

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17 Which body system's function is most directly supported by regular weight-bearing physical activity, helping to reduce the musculoskeletal risks of a sedentary lifestyle?

- ☐ A) The musculoskeletal system
- ☐ B) The nervous system
- ☐ C) The digestive system
- ☐ D) The endocrine system

(Total for Question 17 is 1 mark)

18 Explain why the relationship between a sedentary lifestyle and ill health is described in terms of increased risk, rather than a certainty, for any individual.

(Total for Question 18 is 3 marks)

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19 A school is considering introducing standing desks and short activity breaks between lessons.

(a) Suggest one physical health reason this change could benefit students. **(1)**

(b) Suggest one mental health reason this change could benefit students. **(1)**

(Total for Question 19 is 2 marks)

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20 State two examples of everyday changes that can reduce time spent sedentary, without needing to take part in structured exercise.

(Total for Question 20 is 2 marks)

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21 Which of the following is the best example of reducing sedentary behaviour without taking part in structured exercise?

- ☐ A) Attending a 45-minute gym class three times a week
- ☐ B) Playing in a Saturday football match
- ☐ C) Standing up and walking around the classroom during a break between lessons
- ☐ D) Completing a structured circuit-training session

(Total for Question 21 is 1 mark)

Mark scheme · PE.HW2 Health, Fitness and Wellbeing: Consequences of a Sedentary Lifestyle

Question 1

- **B1** A
- **Answer: A**

Question 2

- **B1** long periods of sitting at a desk or screen, oe
- **B1** travelling everywhere by car rather than walking or cycling, oe
- **B1** spending long periods watching television or using devices for entertainment, oe
- **Answer: Long periods of sitting at a desk or screen; travelling everywhere by car rather than walking or cycling; and spending long periods watching television or using devices for entertainment.**

Question 3

- (a) **B1** a lifestyle characterised by long periods of sitting or inactivity, oe
- (a) **B1** with little or no regular physical activity, oe
- **(a) Answer: A lifestyle characterised by long periods of sitting or inactivity, with little or no regular physical activity.**
- (b) **B1** an increase in screen-based entertainment and desk-based work/study, oe
- (b) **B1** greater use of cars and other motorised transport instead of walking or cycling, oe
- **(b) Answer: An increase in screen-based entertainment and desk-based work, and greater use of cars and other motorised transport instead of walking or cycling.**

Question 4

- **B1** increased risk of high blood pressure, oe
- **B1** increased risk of heart disease or stroke, oe
- **Answer: A sedentary lifestyle is linked to an increased risk of high blood pressure, and an increased risk of heart disease or stroke.**

Question 5

- **B1** B
- **Answer: B**

Question 6

- **B1** lower overall energy expenditure over time can affect how effectively the body regulates blood sugar (insulin sensitivity), oe
- **B1** this raises the risk of developing type 2 diabetes compared with someone who is regularly physically active, oe
- **Answer: Lower overall energy expenditure over time can affect how effectively the body regulates blood sugar, and this raises the risk of developing type 2 diabetes compared with someone who is regularly physically active.**

Question 7

- **B1** muscles that are not regularly used can weaken over time (muscle atrophy), oe
- **B1** bone density can reduce over time without regular weight-bearing activity, oe
- **B1** prolonged sitting can contribute to poor posture, oe
- **Answer: Muscles that are not regularly used can weaken over time (muscle atrophy); bone density can reduce over time without regular weight-bearing activity; and prolonged sitting can contribute to poor posture.**

Question 8

- **B1** increased risk of cardiovascular disease (e.g. high blood pressure or heart disease) from long periods of inactivity, oe
- **B1** increased risk of type 2 diabetes linked to lower overall energy expenditure, oe
- **B1** musculoskeletal effects such as muscle weakening or poor posture from prolonged sitting, oe
- **Answer: James is at increased risk of cardiovascular disease from long periods of inactivity, increased risk of type 2 diabetes linked to lower energy expenditure, and musculoskeletal effects such as muscle weakening or poor posture from prolonged sitting.**

Question 9

- **B1** increased risk of anxiety or low mood, oe
- **B1** poorer sleep quality, oe
- **Answer: A sedentary lifestyle is linked to an increased risk of anxiety or low mood, and to poorer sleep quality.**

Question 10

- **B1** regular activity strengthens the heart muscle, increasing the volume of blood pumped per beat (stroke volume), oe
- **B1** without this training effect, the heart must beat more times per minute at rest to circulate the same amount of blood, oe
- **Answer: Regular activity strengthens the heart muscle, increasing the volume of blood pumped with each beat. Without this training effect, a sedentary person's heart must beat more times per minute at rest to circulate the same amount of blood, giving a higher resting heart rate.**

Question 11

- **B1** A
- **Answer: A**

Question 12

- **Level 3** (7-9): A detailed and coherent response that accurately explains cardiovascular, metabolic, musculoskeletal and mental health consequences, applies them specifically to Callum's described routine, and reaches a well-justified evaluative judgement about the benefit of small increases in activity, stated as reduced risk rather than certainty. Sustained, accurate use of health terminology throughout, with no reference to body weight or appearance.
- **Level 2** (4-6): Some accurate coverage of consequences across at least two of the four outcome areas, with some application to Callum's routine, though coverage may be incomplete or the evaluative judgement underdeveloped. Generally correct use of terminology.
- **Level 1** (1-3): Basic or generic statements about the risks of a sedentary lifestyle with little or no specific application to Callum's routine and little evaluation of the benefit of increased activity.
- **Level 0** (0): No relevant content.
- **Indicative content:**
  - Cardiovascular outcome: Callum's routine (little activity, long periods sitting) is linked to an increased risk of high blood pressure and heart disease over time.
  - Metabolic outcome: lower energy expenditure is linked to reduced insulin sensitivity and an increased risk of type 2 diabetes.
  - Musculoskeletal outcome: muscles not regularly used can weaken, bone density can reduce, and prolonged sitting can contribute to poor posture.
  - Mental health outcome: low activity levels are linked to an increased risk of anxiety or low mood and poorer sleep quality.
  - Evaluative point: mainstream health guidance describes these as increased-risk associations across populations, not certainties for any one individual, since many other factors (e.g. diet, sleep, genetics) also play a role.
  - Evaluative point: mainstream guidance also shows that even small, regular increases in activity (e.g. walking part of the journey to school, taking activity breaks between long periods of gaming) are associated with a meaningful reduction in these risks, without requiring intense or structured exercise.
  - Evaluative point: this means the benefit of change does not depend on reaching any particular fitness level or body outcome, only on reducing total sitting time and increasing the frequency of movement across the day.
  - Balanced conclusion: framing Callum's situation around achievable, small changes (rather than a large or difficult target) is consistent with how mainstream guidance recommends approaching reduced sedentary time.

Question 13

- **B1** B
- **Answer: B**

Question 14

- **B1** a lower baseline cardiovascular fitness, built up from mostly sitting between occasional matches, makes matches or training feel harder, oe
- **B1** muscles and joints less used to regular load may be at a higher risk of injury when suddenly asked to perform, oe
- **Answer: A lower baseline cardiovascular fitness built up from mostly sitting between occasional matches can make matches or training feel harder, and muscles and joints less used to regular load may be at a higher risk of injury when suddenly asked to perform.**

Question 15

- **B1** short active breaks between lessons, e.g. a stretch or brief walk, to reduce continuous sitting time, oe
- **B1** a walk-to-school or park-and-stride scheme, to add incidental activity to the daily routine, oe
- **B1** active lesson transitions (e.g. walking to a different building for the next lesson), to break up periods of sitting, oe
- **Answer: Short active breaks between lessons to reduce continuous sitting time; a walk-to-school scheme to add incidental daily activity; and active lesson transitions to break up periods of sitting.**

Question 16

- **B1** cardiovascular disease (e.g. heart disease), oe
- **B1** type 2 diabetes, oe
- **Answer: Cardiovascular disease and type 2 diabetes are both long-term health conditions linked to prolonged sedentary behaviour by mainstream health guidance.**

Question 17

- **B1** A
- **Answer: A**

Question 18

- **B1** health outcomes are influenced by many factors together (e.g. diet, genetics, sleep, environment), not physical activity level alone, oe
- **B1** population-level health guidance describes patterns or trends across large groups, which do not determine what will happen to any one specific person, oe
- **B1** so a sedentary lifestyle raises the statistical likelihood of these conditions without guaranteeing any individual will develop them, oe
- **Answer: Health outcomes are influenced by many factors together (such as diet, genetics, sleep and environment), not physical activity level alone. Population-level health guidance describes patterns across large groups, which cannot determine what will happen to any one specific person, so a sedentary lifestyle raises the statistical likelihood of these conditions without guaranteeing any individual will develop them.**

Question 19

- (a) **B1** reduces total continuous sitting time, which is linked to lower cardiovascular and musculoskeletal risk, oe
- **(a) Answer: It reduces total continuous sitting time, which is linked to lower cardiovascular and musculoskeletal risk.**
- (b) **B1** short bursts of movement/activity can improve mood and help concentration during the school day, oe
- **(b) Answer: Short bursts of movement can improve mood and help students concentrate during the school day.**

Question 20

- **B1** taking the stairs instead of a lift or escalator, oe
- **B1** standing or walking around during a phone call, oe
- **Answer: Taking the stairs instead of a lift, and standing or walking around during a phone call, are both everyday changes that reduce sedentary time without needing structured exercise.**

Question 21

- **B1** C
- **Answer: C**