

3.2 Physical Development Across the Lifespan

Name: _____ Class: _____ Date: _____ **Total: 11 marks**

KEY WORDS teratogen 致畸物 • late adulthood 老年期 • adolescence 青春期 • motor 运动
• prenatal 产前

Objective

Build the skills to answer exam questions on **physical development** 生理发展.

You must be able to:

- describe **prenatal** 产前 development and the effect of a **teratogen** 致畸物
- state the sequence of **motor** 运动 development in infancy
- describe the physical changes of **adolescence** 青春期
- state the main physical changes of **late adulthood** 老年期

1 Worked examples

Study these first. Each one shows the method for a task used later.

■ Prenatal development and teratogens

Development proceeds from zygote to embryo to foetus. A **teratogen** is any agent — alcohol, certain infections, some drugs — that can cross the placenta and disrupt development. Effects depend on **timing**: the same exposure does more damage during the formation of the affected structure.

■ Motor development

Maturation gives a broadly fixed **sequence** — sitting, crawling, standing, walking — but the **timing** varies between individuals and cultures. Sequence is biological; pace is not purely so.

■ Adolescence

Puberty brings a growth spurt and reproductive maturity. Brain development continues, with the prefrontal regions supporting planning and impulse control maturing later than the reward-sensitive regions.

■ Late adulthood

Sensory acuity declines, reaction time slows, and muscle mass falls. Well-practised knowledge and vocabulary are typically preserved, while speed-dependent tasks decline first.

2 Practice

2.1 Define a teratogen and give one example. [2]

2.2 Explain why the timing of an exposure matters as much as the dose. [2]

2.3 Two infants walk at 10 and at 15 months.

(a) State what is fixed across infants. [1]

(b) State what varies. [1]

3 Exam-style questions

3.1 In adolescence, the brain regions supporting planning and impulse control mature[1]

- **A** before reward-sensitive regions
- **B** after reward-sensitive regions
- **C** at exactly the same time
- **D** only after age 40

3.2 In late adulthood, the abilities usually best preserved are

[1]

- **A** reaction speed
 - **B** vocabulary and well-practised knowledge
 - **C** hearing acuity
 - **D** muscle mass
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3.3 A public health campaign targets alcohol use in early pregnancy.

(a) State the reason for targeting that period.

[1]

(b) Explain one difficulty in measuring the campaign's effect.

[2]

Solutions

2.1 an agent that can cross the placenta and disrupt prenatal development; e.g. alcohol.

2.2 a structure is vulnerable while it is forming, so the same exposure produces different damage depending on when it occurs.

2.3 (a) the sequence of motor milestones. (b) the age at which each is reached.

3.1 B. prefrontal maturation lags behind reward-sensitive development.

3.2 B. crystallised knowledge is typically preserved while speed declines.

3.3 (a) major structures form early, so exposure then does the most damage. (b) self-reported drinking is unreliable and other influences on outcomes cannot be controlled, so any change is hard to attribute to the campaign.