

Health and Human Development
Teach Yourself Series
Topic 2: Physical, Intellectual, Emotional and Social
Development

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Physical, Intellectual, Emotional and Social Development

Development is defined as a progressive process of orderly, predictable changes in an individual. Human development begins at conception and concludes at death. Unlike health, development is a difficult concept to measure, particularly intellectual, emotional and social development.

Development is based on a number of principles, these include:

- it is continuous and involves gradual change
- includes physical, social, emotional and intellectual development
- influenced by heredity and environmental factors such as nutrition
- is orderly and predictable, although individuals may have variations
- characteristics can be predicted at each stage of the lifespan

Examples of development include

- improving control over muscles
- advancements in thinking and mental ability
- developments in language and emotional skills
- changes in social interactions

Physical Development

As it appears in Unit 1

Physical development includes changes in the complexity and functioning of structures and systems in the body.

Motor development refers to the coordination of muscles and nerves that control body movement. Motor development can be divided between gross motor skills and fine motor skills. Gross motor skills are those skills that involve control of large muscle groups, examples of this movement include sitting, walking, running etc. Fine motor skills are those skills that involve the control of the small muscle groups in areas like the hands, examples of this movement being writing, playing a musical instrument, typing etc.

Physical development can proceed in different directions, these sometimes being called laws of development. According to the cephalocaudal law, development progresses from the top of the body downwards or from head to feet. According to the proximodistal law, development progresses from the middle of the body towards the extremities.

Physical development is often seen in growth, whereby structures of the body become more complex. Growth is defined as an increase in the cell number and size within the body. Growth can occur via the process of cell division called mitosis or cell differentiation. During the lifespan a person will progress through different growth cycles, with these cycles being characteristic of rapid or slow growth that occur at a specific time. Growth cycles enable us to predict future growth patterns. The four main growth cycles include from conception to birth and infancy (rapid growth), three years old until puberty (slow, stable growth), adolescence (rapid growth), after growth spurt in puberty until adult height is attained (slow, stable growth).

In Unit 1, the focus of physical development is on the lifespan stage of youth. This is outlined below.

- changes in body proportions, by the age of 15 years or so, the body appears more adult like in its proportions
- girls go through puberty at around age 11 ½, where by the end of it they have grown approximately 16 cm and put on approximately 16 kilos
- boys go through puberty at around age 13 ½, where by the end of it they have grown approximately 20 cm and put on approximately 20 kilos
- the circulation system and respiratory system strengthens and grows
- increased muscle mass and strength
- growth spurt can cause some uncoordination as the limbs may be disproportional for a while until the remainder of the body catches up
- improved motor skills by the end of this stage
- sexual maturation occurs
- Follicle stimulating hormone (FSH) is activated. It targets the testes in boys to produce sperm and targets the ovaries in girls to produce oestrogen. This hormone is responsible for the development of primary and secondary sexual characteristics.
- Lutenising hormone (LH) targets the testes to produce testosterone important for the development of primary and secondary sexual characteristics. LH also targets the ovaries to produce progesterone which is involved in the production of the menstrual cycle.
- boys develop pubic hair, facial hair, voice deepens, shoulders widen, testes grow and produce sperm
- girls develop pubic hair, breasts, hips widen, menstruation commences

Review Questions

- 1. Hormones are responsible for initiating and controlling the development which occurs during youth.
 - a. Outline the role of growth hormone during youth.

- b. Identify and describe the hormones responsible for sexual maturation during youth.

- 2. During the rapid growth and development which occurs during youth, both primary and secondary sex characteristics develop.

- a. Briefly outline the primary sex characteristics which develop during youth.

- b. Briefly outline the secondary sex characteristics which develop during youth.

Solutions to Review Questions

1.

- a. Growth hormone is responsible for the lengthening of bone during youth and the development of muscle. This contributes to the overall increase in body size and weight during youth.
- b. The hormones responsible for sexual maturation include oestrogen - responsible for production of the sex hormones oestrogen and testosterone and the production of progesterone which stimulates the menstrual cycle. FSH is responsible for the production of sperm and stimulates the ovaries.

2.

- a. The primary sex characteristics that develop during youth are the characteristics directly responsible for the ability to reproduce. In males, this refers to the production of sperm and in females, the onset of menstruation.
- b. Secondary sex characteristics refer to the characteristics of sexual maturity which are not directly linked to reproduction, including the enlarging of the penis and scrotum in males, development of breasts in females and the development of pubic hair.

3. *Answer: B*

Explanation:

Youth is a period of rapid growth, with regard to both quantitative development (growth that can be measured, such as height) and qualitative development (difficult to measure, such as the increasing importance of peer relationships).

4.

- a. In both early and late childhood, the rate of physical development is slow and steady. During early childhood, physical development is building upon the fundamental skills learned during infancy, such as walking, running and learning new skills requiring balance, such as riding a bike or doing a somersault. In late childhood, these skills are again refined and the actions of riding a bike may become smoother and more controlled. There is an increase in strength in late childhood.
- b. During late childhood, the body begins to lay down fat stores (often referred to as 'puppy fat') in preparation for the rapid growth spurt about to begin. This process is the body's own way of ensuring it has the energy required to facilitate the growth and development of youth.

5.

- a. Maintenance in the context of physical development means that no further development in the form of growth can occur, so it is about maintaining what the body has and preventing the onset of body decline. An example of maintenance is in relation to bone density; during early adulthood, bones reach their peak density, they cannot become any stronger. Therefore, the process of development is to maintain the density of bones and to prevent the loss of bone density which naturally occurs with ageing.
- b. The signs of ageing include loss of pigment in the hair, resulting in greying of the hair; loss of elasticity in the skin, resulting in wrinkles; senses are less acute, resulting in hearing and eyesight loss and compaction of the spine, resulting in reduced stature.

6. *Answer: C*

Explanation:

The embryonic stage is defined as being the most critical in prenatal development. The embryo is most susceptible to substances which pass via the placenta, such as alcohol and drugs. This can result in significant developmental issues in children or cause the embryo to die whilst in the uterus.

7.

- a. Youth who begin to physically develop earlier than their peers may experience low self esteem, embarrassment and shame about the changing shape and appearance of their bodies. For many youth, these feelings will alter when their peers begin to catch-up and their bodies look the same, but for some youth, their long term development may be affected and they find it difficult to develop trust in other people. The same can be said for individuals who develop at a slower rate than their peers.
- b. Friendships provide youth with a feeling of belonging, acceptance and worth. It promotes positive self esteem and helps with the establishment of identity.