SJIF Impact Factor 2021: 8.013| ISI I.F.Value:1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 6 | Issue: 5 | May 2021 - Peer Reviewed Journal

THE PHENOMENON OF PHYSICAL MATURITY AND ITS DEVELOPMENT

Iskandarov Nurbek Sharifboevich
Teacher, Department of Theory and Methodology of Physical Culture , Faculty of Physical Culture, Urgench State University, Khorezm, Uzbekistan

ABSTRACT
This paper deals with the scientific basis for the study of the physical development and physiological maturity of individuals. This problem is of extreme importance in view of the serious responsibility which must be assumed by those who will direct the physical development of the youth. Some of the problems dealt with here are basic concepts in physical development, aspects of physical development-growth, differentiation and maturation, patterns of development.
KEY WORDS: *maturity, biological maturity, physical maturity, motor development*

The content of physical education is expressed in physical maturity, diagnosis of physical condition and culture of physical education. In some literatures, physical maturity refers to the formation of a sequence of exercises and training that generates data on the growth of physical culture in a person, i.e., physical and mental changes in a person ranging from simple to complex. Physical maturity is a harmonious form of physical appearance, physical qualities - a way to achieve a high level of maturity, agility, flexibility, strength. Physical culture is an integral part of physical education and its content includes:

1. The structure of human organs and their functional maturity.
2. Strengthening the health of individuals.
3. Getting used to the rules of hygiene.
4. Improving the comprehensive skills of the individuals.
5. Formation of physical and physiological qualities of future employees.
6. Creating conditions for physical and age characteristics in individuals.
7. To develop the will, endurance, perseverance, discipline, friendship in the individuals.
8. Nurturing personal physical abilities.

Growth occurs through a complex, organized process characterized by predictable developmental stages and events. Although all individuals follow the same general course, growth and maturation rates vary widely among individuals. Just as it is unrealistic to expect all children at the same age to achieve the same academic level, it is unrealistic to expect children at the same age to have the same physical development, motor skills, and physical capacity. Regular physical activity does not alter the process of growth and development. Rather, developmental stage is a significant determinant of motor skills, physical capacity, and the adaptation to activity that is reasonable to expect.

Biological Maturation

Maturation is the process of attaining the fully adult state. In growth studies, maturity is typically assessed as skeletal, somatic, or sexual. The same hormones regulate skeletal, somatic, and sexual maturation during adolescence, so it is reasonable to expect the effect of physical activity on these indicators of maturity to be similar.

Skeletal maturity is typically assessed from radiographs of the bones in the hand and wrist; it is not influenced by habitual physical activity. Similarly, age at peak height velocity (the most rapid change in height), an indicator of somatic maturity, is not affected by physical activity, nor is the magnitude of peak height velocity, which is well within the usual range in both active and inactive youth [1].

Adolescence is the transitional period between childhood and adulthood. The adolescent growth spurt, roughly 3 years of rapid growth, occurs early in this period. An accelerated increase in stature is a hallmark, with about 20 percent of adult stature being attained during this period. Along with the

SJIF Impact Factor 2021: 8.013| ISI I.F.Value:1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 6 | Issue: 5 | May 2021 - Peer Reviewed Journal

rapid increase in height, other changes in body proportions occur that have important implications for sports and other types of activities offered in physical education and physical activity programs. As boys and girls advance through puberty, for example, biacromial breadth (shoulder width) increases more in boys than in girls, while increases in bicristal breadth (hip width) are quite similar. Consequently, hip-shoulder width ratio, which is similar in boys and girls during childhood, decreases in adolescent boys while remaining relatively constant in girls. Ratios among leg length, trunk length, and stature also change during this period. In contrast, adolescent and adult females have shorter legs for the same height than males of equal stature. Body proportions, particularly skeletal dimensions, are unlikely to be influenced by physical activity; rather, body proportions influence performance success, fitness evaluation, and the types of activities in which a person may wish to engage. For example, there is evidence that leg length influences upright balance and speed. Individuals who have shorter legs and broader pelvises are better at balancing tasks than those with longer legs and narrower pelvises, and longer legs are associated with faster running times. Also, longer arms and wider shoulders are advantageous in throwing tasks, as well as in other activities in which the arms are used as levers. Approximately 25 percent of engagement in movement-related activities can be attributed to body size and structure.

Motor Development

Motor development depends on the interaction of experience (e.g., practice, instruction, appropriate equipment) with an individual's physical, cognitive, and psychosocial status and proceeds in a predictable fashion across developmental periods. An eloquent metaphor— "the mountain of motor development" is used to aid in understanding the global changes seen in movement across the life span[2]. Early movements, critical for an infant's survival, are reflexive and dominated by biology, although environment contributes and helps shape reflexes. This initial reflexive period is followed quickly by the preadapted period, which begins when an infant's movement behaviors are no longer reflexive and ends when the infant begins to apply basic movement skills (e.g., crawling, rolling, standing, and walking) that generally are accomplished before 12 months of age. The period of fundamental motor patterns occurs approximately between the ages of 1 and 7 years, when children begin to acquire basic fundamental movement skills (e.g., running, hopping, skipping, jumping, leaping, sliding, galloping, throwing, catching, kicking, dribbling, and striking). Practice and instruction are key to learning these skills, and a great deal of time in elementary school physical education is devoted to exploration of movement. Around age 7, during the so-called context-specific period of motor development, children begin to refine basic motor skills and combine them into more specific movement patterns, ultimately reaching what has been called skillfulness. Compensation, the final period of motor development, occurs at varying points across the life span when, as a result of aging, disease, injury, or other changes, it becomes necessary to modify movement.

Physical Development

Physical development is a dynamic process of growth (increase in body length and weight, development of organs and body systems, and so on) and biological maturation of a child in a certain period of childhood. The process of development of a set of morphological and functional properties of an organism (growth rate, body weight gain, a certain sequence of increase in various parts of the body and their proportions, as well as the maturation of various organs and systems at a certain stage of development), mainly programmed by hereditary mechanisms and implemented by a certain plan under optimal living conditions.

Physical development reflects the processes of growth and development of the organism at individual stages of postnatal ontogenesis (individual development), when the transformation of genotypic potential into phenotypic manifestations occurs most clearly. Features of physical development and physique of a person largely depend on his constitution.

Physical development, along with fertility, morbidity and mortality, is one of the indicators of the level of health of the population. The processes of physical and sexual development are interrelated and reflect the general patterns of growth and development, but at the same time they significantly depend on social, economic, sanitary and hygienic and other conditions, the influence of which is largely determined by the age of a person.

Physical development is understood as continuously occurring biological processes. At each age stage, they are characterized by a certain complex of morphological, functional, biochemical, mental and other properties of the organism connected with each other and with the external environment and the reserve of physical strength caused by this originality. A good level of physical development is combined with high indicators of physical fitness, muscle and mental performance.

Unfavorable factors that have an impact in the prenatal period and in early childhood can disrupt the sequence of the body's development, sometimes

SJIF Impact Factor 2021: 8.013| ISI I.F.Value:1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 6 | Issue: 5 | May 2021 - Peer Reviewed Journal

causing irreversible changes. Thus, environmental factors (nutritional conditions, upbringing, social conditions, the presence of diseases, and others) during the period of intensive growth and development of a child can have a greater impact on growth than genetic or other biological factors.

The assessment of physical development is based on the parameters of growth, body weight, the proportions of development of individual parts of the body, as well as the degree of development of the functional abilities of his body (vital capacity of the lungs, muscle strength of the hands, etc.; development of muscles and muscle tone, posture, musculoskeletal apparatus, the development of the subcutaneous fat layer, tissue turgor), which depend on the differentiation and maturity of the cellular elements of organs and tissues, the functional abilities of the nervous system and the endocrine apparatus[3]. Historically, physical development is judged mainly by external morphological characteristics. However, the value of such data increases immeasurably in combination with data on the functional parameters of the organism. That is why for an objective assessment of physical development, morphological parameters should be considered together with indicators of functional state[4].

1. Aerobic endurance - the ability to perform long-term work of average power and resist fatigue. The aerobic system uses oxygen to convert carbohydrates into energy sources. Longer exercise also involves fat and, in part, protein, making aerobic exercise almost ideal for fat loss[5].

2. Speed endurance - the ability to withstand fatigue in submaximal speed loads.

3. Strength endurance - the ability to withstand fatigue with sufficiently long-term strength loads. Strength endurance shows how much the muscles can create repetitive efforts and for how long to maintain such activity.

4. Speed-strength endurance - the ability to perform sufficiently long-term strength exercises with maximum speed.

5. Flexibility - the ability of a person to perform movements with a large amplitude due to the elasticity of muscles, tendons and ligaments. Good flexibility reduces the risk of injury during exercise.

6. Quickness - the ability to alternate muscle contraction and relaxation as quickly as possible.

7. Dynamic muscular strength - the ability to maximally rapid (explosive) manifestation of efforts with great burden or own body weight. In this case, a short-term release of energy occurs, which does not require oxygen, as such. An increase in muscle strength is often accompanied by an increase in muscle volume and density — muscle “building”. In addition to the aesthetic value, the enlarged muscles are less susceptible to damage and contribute to weight control, since muscle tissue requires more calories than adipose tissue, even during rest[6].

8. Agility - the ability to perform complex coordination motor actions.

9. Body composition - the ratio of fat, bone and muscle tissue of the body. This ratio, in part, reflects health and fitness status as a function of weight and age. Excessive adipose tissue increases the risk of heart disease, diabetes, high blood pressure, and more.

10. Height-weight characteristics and proportions of the body - these parameters characterize the size, body weight, distribution of body mass centers, physique. These parameters determine the effectiveness of certain motor actions and the "suitability" of using the athlete's body for certain sports achievements.

11. An important indicator of a person's physical development is posture - a complex morpho-functional characteristic of the musculoskeletal system, as well as his health, an objective indicator of which is positive tendencies in the above indicators[7].

As the concepts of "physical development" and "physical fitness" are often confused, it should be noted that physical fitness is the result of physical training, achieved when performing motor actions necessary for mastering or performing a professional or sports activity by a person. Optimal physical fitness is called physical fitness. Physical fitness is characterized by the level of functional capabilities of various body systems (cardiovascular, respiratory, muscular) and the development of basic physical qualities (strength, endurance, speed, agility, flexibility). The assessment of the level of physical fitness is carried out according to the results shown in special control exercises (tests) for strength, endurance, etc. and its goals. Human performance is the ability of a person to perform a given function with varying efficiency.

REFERENCES

1. *Kail, Robert V (2011). Children and Their Development (6th Edition) Mydevelopmentlab Series). Englewood Cliffs, N.J: Prentice Hall. ISBN 978-0-205-03494-9. OCLC 727047867.*
2. *Vilaça, S. (2012). Desantvolvimento infantil and capacitaçãã materna as a result of the application of the Parental Empowerment Program for desantvolvimento infantil (PEPDI). Doctoral thesis. University of Minho.*
3. *Barnett, W. Steven (Winter 1995). "Long-Term Effects of Early Childhood Programs on Cognitive and School Outcomes." The Future of Children. 5 (3): 25–50. doi: 10.2307 / 1602366. JSTOR 1602366.*

SJIF Impact Factor 2021: 8.013| ISI I.F.Value:1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 6 | Issue: 5 | May 2021 - Peer Reviewed Journal

4. *Bronfenbrenner, Urie (1979). The ecology of human development: experiments by nature and design. Cambridge: Harvard University Press. ISBN 978-0-674-22456-8. OCLC 4515541.*
5. *Blades, Mark; Smith, Peter K .; Cowie, Helen (2011). Understanding Children's Development. Wiley-Blackwell. ISBN 978-1-4051-7601-9. OCLC 620124946.*
6. *Shaffer, David R. (2009). Social and personality development (6th ed.). Australia: Wadsworth. ISBN 978-0-495-60038-1.*
7. *Cole, Michael; Vygotskiĭ, L. S. (1978) [Published originally in Russian in 1930]. Mind in society: the development of higher psychological processes. Cambridge: Harvard University Press. ISBN 978-0-674-57628-5. OCLC 3517053.*