



CLASSIFICATION OF PHYSICAL MOVEMENTS BY CONTENT, STRUCTURE, STATUS OF TIME AND SPACE

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Annotation

This article provides information on the changes observed in the human body through physical activity, the structure of physical movements, their classification in time and space.

Keywords. movement, body parts, body parts in space, vertical position of the body, coordinates of movement, anatomy of the human body, active and passive muscles.

Introduction

Considering that from the first years of independence the upbringing of the youth of our country in all respects, equipping them with the necessary life skills is one of the most important aspects for everyone, it is necessary to improve the general physical fitness, physical development, creative work and defense of the motherland. , raised the physical culture of young people, the formation and increase of their reserve of vital movement skills, which are its core, to the level of public policy. Accordingly, the research of a scientific article is relevant [1].

Analysis of special literature from the point of view of biomechanics: actions depending on the position of the body in space (space); trajectory (path) of movement; direction of movement; moving amplitude (deviation); time spent performing the action; speed of movement; duration (length) of movement; tempo, rhythm[2,3,4].

Only if we can distinguish the above-mentioned cases of movement, we can say that we have the knowledge to manage their health, to be able to live a healthy life for a lifetime.

In the practice of body training, one of the spatial states of the body is the concept of the trajectory (path) of movement, and if the movement is not performed on the trajectory where the movement is required, the task set to perform it will not be solved positively. For example, if the movements performed on a horizontal bar, barbell, acrobatics, trampoline and other gymnastic equipment are not performed on the required trajectory ("path"), the structure and content of the movement will change. The set action task is not solved positively.





The position (posture) of the body before the start of the movement - the joints, some parts of the body (parts) that need to perform the movement (exercise) in space, prepare for the execution [5,6,7,8,9,10].

In space, the body parts, the parts - bent, bent from the outside, in the form of some of our limbs are folded, form the conditions for the performance of actions or movement activities that are then performed. During movements, these postures and standing positions are constantly changing, and so on, which also causes a change in the amount of physical load. It has its pros and cons and can affect the basics of exercise technique. If we pay attention to the position or posture of the body, it seems that the body is at rest, but strong physiological processes are taking place in the body, and this prepares the ground for the subsequent actions [11,12,13,17].

The vertical position of the body is manifested in the form of hanging and leaning exercises, horizontal positions, horizontal balances, mixed hanging, leaning, and so on. The body is bent, bent over: lying down, legs bent forward, backward, making "big steps" to the sides, and so on [14,15,16].

The movements of individual joints of the body are changes in the position of two biological links in a separate part of the human body in space, which can lead to the solution of their functions as simple movements such as bending and straightening.

In the activity of an individual, some movements in the joints of his body can be combined, joined, and connected to simultaneous, sequential, series, slow, sequential or short, long movements. Without such connections, the actions that must be performed later cannot be performed. At the expense of such actions it is possible to solve the simplest, most difficult, complex movement tasks.

The coordinates of motion are defined in straight line and angular measurements, the spatial boundary relative to another part of the body, the location of the body or its parts in space or time before the calculation begins, and the position (starting line, gym, its axis, and other points).

The state of the body - the most important of which precedes the start of the exercise - is the part called the 'initial state', which is important when mastering or performing an exercise technique. The initial position is the most optimal position to start performing the action, which facilitates the sequence of performing the next actions after the action has started. For example, a "low start" for the sprinter, a "wait for the ball" for the goalkeeper, a situation where the volleyball player waits for the ball to be put on the field, and so on. Academician Ukhtomsky called these cases the optimal situation. In other words, the functional state of the organism means that it is ready for the next action.



Although the initial conditions show a state of relative calmness, serenity, calmness, a strong physiological and mental process is taking place in the body. Acute, long-term energy expenditure, careful preparation of a number of muscle groups for muscle work, tension, respiration, nervous, cardiovascular system, metabolism, etc. are at their peak.

Sprinter, stayer, marathoner, skier, skater runners' torso is tilted to a certain degree, bending, which has a certain effect on the effectiveness of the exercise. The post-depressing position of the long, high jumper has a positive or negative effect on the performance of the exercise.

Performing movements smoothly, sequentially, freely, without difficulty depends on the necessary condition of the human body. The state of the body plays a leading role in mastering exercise techniques, mastering movements, the occurrence of errors, their detection, correction.

Path (trajectory) of motion. The diversity of the anatomy of the human body requires that each individual choose a different course of action when performing the same action, professionally or physically.

Depending on the form of movement, the path of action to perform them may be different. But an individual's movement is never along a straight line, and even simple movements occur through a number of muscle groups: rotational movements, stretching, stretching, pulling, not changing size, and so on. For example, it is necessary to "pass" the building brick to a distance of 3-4 meters. If the movements that create the required level of trajectory in the "transmission" (pushing and hanging) of the brick are not performed, the bricklayer will have to expend extra muscle power (energy). In Figure 1, we recommended the annular trajectory of the hand movement when hitting a tennis ball on the motion trajectory.

Direction of movement - the effectiveness of the exercise increases if the group of muscles required for the movement to be performed performs the technique of the exercise in accordance with a clearly defined, smoothly defined requirement. For example, when performing "rivoks" with the arms bent at the elbows in front of the chest and the palms facing down, the chest muscles tense and relax.



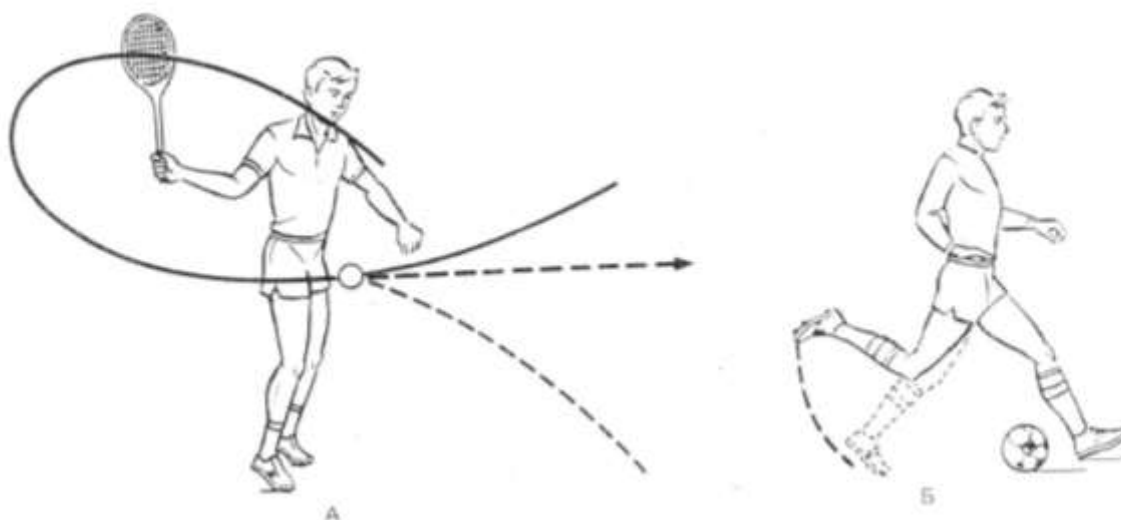


Figure 1. Representation of the limits of the technique of movement activity:

A is an example of a ring shape of the trajectory of a hand movement; b - to increase the force exerted by the foot when kicking the ball, it is necessary to increase the speed of movement of the sole of the foot (for this, the knee part of the foot is bent earlier). If we perform this movement ("rivok") with the elbow slightly lowered, the intended result of the exercise loses its significance.

In practice, the direction of movement is determined by the level of the body or a target. When we raise the arm forward, we determine the direction of movement relative to the body depending on its position.

The movements of the human body can be directed up and down, back and forth, right and left.

The amplitude of motion is the deviation of motion. In physics, amplitude is the degree to which a pendulum swings left and right relative to a resting state. We understand the deflection of certain parts of the body. The amplitude of movement in the right direction is determined by half the length, full sitting, etc., depending on the length of the step (75cm) or the symbol. The amplitude of certain parts of the human body depends on the elasticity of the joints of that body.

Movement occurs in active and passive muscle contraction. Much of the action that takes place in sports training, living conditions, and professional activities depends on its amplitude. Unsuitable for large movements, forcing a muscle to move at large amplitudes can lead to injury.

Duration of action. Parts of the body play a key role in the longevity of the movement. By varying the duration of the exercise, i.e., increasing or decreasing the duration of the exercise, the overall load of the exercise can be affected.



The tempo of a movement is the frequency at which a movement cycle is repeated, or the movement performed within a given unit of time. The walking pace is 120-140 steps per minute, and the speed of immersing the donkey in the water is 30-40 times more. We need to differentiate speed with tempo. For example, it is possible to repeat the movement of raising and lowering the arm at different tempo at the same tempo, but the speed of the arm movement varies. Although the length of the running steps is not the same, if the step frequency is the same rhythm, the running speed will also be different.

In Conclusion

we understand the nature of movement, in which the rhythm of movement is associated with the phases of passive and weak movement of active muscle tension and tension over time. This feature will be available during any complete action act. In other words, the rhythm of motion is manifested by the fact that the tension in space for a certain period of time is organized relatively correctly and in place within the motion system. There is a certain rhythm of movement in any, even improperly executed act of movement, even in the case of long shortness of movement parts. This means that the rhythm of movement can be rational, correct, leading to a high result, or irrational, incorrect, reducing the effectiveness of the result.

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