

Висновки.

1. У юних футболісток на початку тренувального періоду рееструються підвищені показники системної гемодинаміки.
2. Розумова працездатність знаходиться у середніх межах і несуттєво поліпшується після тесту МСК.
3. Юні футболістки не виказують ознак тренуваності чи адаптованості до фізичних навантажень, що є тлом для наступного контролю за впливом тренувальних навантажень.

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MORPHO-FUNCTIONAL CHARACTERISTICS OF JUNIOR FOOTBALL-PLAYERS AT THE BEGINNING OF PREPARATION PERIOD

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Morpho-functional characteristics of junior football-players at the beginning of preparation period have been analyzed.

BODY POSTURE OF YOUNG SWIMMERS

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Introduction

The process of development which contemporary man undergoes since birth is subjected to the influence of the environment. The environment has its effect on the way body posture develops. Correct body posture is characterised by a symmetrical composition of body parts. Nevertheless, man is asymmetrical in its build and function.

Functional asymmetry consolidates with child's development and it is, both, genetically determined and determined by child's physical activities. Motor activity, its kind, the way motor apparatus is strained - these are essential factors determining whether a person retains symmetrical body, especially if a person trains sport oriented on accomplishments. When a person is training for years a discipline of sport which requires greater activity of one side of the body, morphological asymmetry and functional asymmetry may deepen.

There are numerous reports and studies, based on research carried out for years, which indicate a relation between occurrence of changes within body posture of a person and discipline of sport this person trains. Swimming is practised in specific changing conditions. Position of the body changes and force of gravity on the spine is eliminated. This is why, swimming as a motor activity has beneficial effect on physical development of man and their motor traits. However, it is also believed that long-term training of swimming may intensify asymmetry of the body (1,2).

The purpose of the study was to assess symmetry of body in frontal plane in children who train swimming.

Material and research method.

The subjects of the study were 112 boys and girls (aged 10-15 years) from schools in Wrocław who systematically swim and 141 of their peers who do not train any discipline of sport. Swimmers trained on average 19-24 hours a week. The subjects of the research were divided into three age groups.

The researchers used photogramometric method based on Moire's projective measurement (4). Each of the subjects had symmetry of body in frontal plane and transverse plane measured. Assessment of it was carried out on the basis of position of the following anthropomotor points:

1. deviation of the line of spinous processes in relation to the line $C_7 - S_1$ [UK],
 2. angles of inclination of the line of shoulders [KLB]
 3. angles of inclination of pelvis [KNM]
 4. angles of rotation of pelvis [KSM]
 5. differences in the height of waist triangles [TT] $TT = TTL - TTP$
 6. differences in the height on which inferior angles of the scapulas are positioned [UL]
 7. differences in the distance between inferior angles of the scapulas and the spine [OL]
- $CL = DL - DP$

Differences in the position of points 1-4 were determined in degrees and they are referred to as angle coefficients in further part of the study. Differences in position of points 5-7 were determined in millimetres and are referred to as linear coefficients in further part of the study. It was assumed that for parameters measured in degrees:

- Difference $> 0^\circ$ J 1.5° indicates small asymmetry,
- Difference $> 1.5^\circ < 3^\circ$ indicates mild asymmetry
- Difference $\geq 3^\circ$ indicates significant asymmetry

Whereas, for parameters measures in millimetres:

- Difference > 0 J 5mm indicates small asymmetry
- Difference $> 5\text{mm} < 10\text{mm}$ indicates mild asymmetry
- Difference $\geq 10\text{mm}$ indicates significant asymmetry

Results of the study and discussion

The results of the study involving children training swimming and not training any discipline of sport are shown in figure 1.

Position of chosen osseous points within corpus in age groups of children training swimming and their peers not training any sport varied and did not indicate any pattern. Occurring asymmetries were not constants. In each age group significant asymmetries involved different osseous points. It was observed that in the group of younger children significant asymmetry concerned the position of shoulders, angle of rotation of pelvis and distance of spinous processes from the line C7-S1. It was observed more often in children not swimming (figure 1).

Asymmetry of children 12-13 years old looked different. Significant asymmetry occurred less frequently, whereas, mild and small asymmetry occurred more frequently. Small and mild asymmetry occurs more frequently in children training swimming. Significant asymmetry occurs in this age group less frequently and, in the case of children training swimming, it concerns only the angle of rotation of pelvis, whereas, as far as children not training any sport are concerned, it concerns the position of inferior angles of scapulas (fig.2).

Intensified asymmetry of position of chosen osseous points within the corpus was found in the group of the oldest children. More cases of this asymmetry were found in the group of children who do not swim. The asymmetry concerns the difference in the height of waist triangles (36%), distance of spinous processes from the line C7-S1 (26%), distance of inferior angles of scapulas from the spine (42%). Whereas, in the case of children who swim, the asymmetry concerned the distance of inferior angles of scapulas (31.2%).

The results indicate occurrence of asymmetry of body in frontal plane in all studied subjects. Nevertheless, greater asymmetry was found in children not training swimming. The biggest differences between children training swimming and not training sport in all age groups were found in the position of spinous processes in relation to the line C7-S1.

Discussion

Spontaneous physical activity and physical activity dosed in right doses and forms has an effect on biological development of a child, its physical efficiency and health. Sport oriented on accomplishments is a special kind of intensified and oriented towards certain goal physical activity. The opposite of that is a moderate physical activity related to every day life activities. Literature is fraught with reports about relation between body build and training accomplishments-oriented sport. Many authors indicate that swimming allows for broad development. Therefore, they include this discipline into the group of sports that have the most beneficial effect on health of people. Moderate physical activity in water that involves overcoming resistance of water allows for harmonious development of the body, prevents deformations, contributes to development of correct posture, better vaulting of thorax and increase of lung capacity (2,3,6,7).

The results of the study indicate that swimming has an effect on body posture in frontal plane. Observed differences in position of chosen osseous points in children who swim and do not swim indicate occurrence of asymmetry in both research groups. Still, asymmetry is more intensified and more frequent in the group of children not training any discipline of sport.

The fact that small asymmetry is more frequently observed in the group of children training swimming may result from the fact that swimming requires equally intensified work of the same muscles on both sides of the body during training. Symmetrical work of lower limbs in classic style and dolphin style as well as alternate work with little amplitude

moves of the muscles of lower limbs in other styles may have influence on the way analysed osseous points within pelvis position themselves (TT, TS, KSM, KNM). Whereas, alternate broad movement in the shoulder joint in all swimming styles has marked effect on development of mass and strength of shoulder girdle, and especially greater pectoral muscles. The fact that shoulder girdle gains in strength and muscle mass has an effect on asymmetrical positioning of shoulders in swimming children.

Intensification of asymmetry in children who do not swim may be connected with poorer development of ligament-muscle corset and bad motor habits [2]. The changes may also be connected with pubescence. At the time of puberty, the centre of gravity gets moved upwards as a result of rapid growing of the child and static conditions deteriorate. Lack of balance may cause observed changes and variance in symmetry of the bodies of swimming children and not swimming children[1,2]. Sedately life style, the way child spends its spare time and not sufficient amount of physical exercises and activities contribute to the changes.

Conclusions

1. Swimming trained as a sport has effect on the process of development of symmetry of body posture in frontal plane, however, extent and character of the changes is determined by the kinds of workload different stages of training involve and by stage in development.

2. Asymmetry in swimmers decreases with age.

It is believed that long-term training swimming has effect on the way posture develops.

The subjects of the study were 112 swimmers aged 10-15, boys and girls. The researchers used Moire's photographic method. The results of the study indicate that intensive swimming training has effect on spinal curvature in frontal plane.

МОРФОЛОГІЧНІ ОСОБЛИВОСТІ ГІМНАСТОК-“ХУДОЖНИЦЬ” 12-14 РОКІВ

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Актуальність. У літературі з основ спортивного тренування існують дані, що свідчать про тенденцію до зменшення віку, з якого починаються заняття художньою гімнастикою (В.П. Філін, 1987; В.Н. Платонов, 1998 та інші).

Якщо Ж.А. Белокопитова, 1981 стверджувала, що підготовку гімнасток-художниць необхідно починати з 8-9 років, то в даний час більшість фахівців-практиків у цій галузі схиляються до думки про можливість початку тренувань з 4-5 років (Е.В. Сидорова, 1991 та інші).

Така тенденція зумовлена значним підвищенням вимог до рівня спортивно-художніх результатів, досягнення яких вимагає більш ранніх термінів початку підготовки гімнасток. У сучасній теорії і методиці спортивного тренування однією з основних вимог до тренувального процесу юних спортсменів є співвідношення навантажень до функціональних можливостей зростаючого організму, їх адаптації в зв'язку з віком, статтю та рівнем підготовленості (Л.П. Матвеев, 1991; Платонов, 1998 та інші).