

Prevention and Correction of the Foot Supporting-Spring Qualities Disorder of Young Basketball Players

National university of physical education and sport of Ukraine (Kiev)

Introduction: The flatfoot is one of the most widespread orthopaedic diseases. According to the statistical data the flatfoot is found in 40–50 % among adults and in more than 40% among children and this number is constantly increasing. The flatfoot is a foot deformation that lies in height reduction of longitudinal arch of foot in combination with pronation of heel and supination deformation of the front foot. The flatfoot is mostly formed in the childhood and in the teens age. There is congenital flatfoot and acquired flatfoot which can be combined with foot pronation [V. Bevzyuk, B. Kedrovskiy]. Many specialists [4, 5] mark that functional insufficiency of child foot has bad influence on body. The flatfoot is often combined with other locomotor disorders also flatfoot can be a reason of bearing disorders (scoliosis, deformation of thorax, osteochondrosis) and other disorders.

Hypothesis: In this work it is planned to study the characteristics of foot structure of basketball-players and its biomechanical properties while performing of specialized exercises (jumps, running, stops, turns and other). It is also planned to develop the program on the basis of the obtained data for foot correction and prevention for young basketball-players on the initial stage of long-term training.

The formation of correct arch of foot is of particular importance for young basketball-players. However, the topic which covers the prevention and correction of foot supporting-spring qualities disorder which depends on engaging in the different sports isn't well studied. And the known methods of solving of this problem don't take into account the specific of basket-ball and need correction.

The aim of this work is to develop the technology of foot unfixed disorders correction of young basketball-players.

Research methods. The usage of the following methods is planned to accomplish the specified tasks:

- Analysis and generalization of the scientific-methodical literature, documentary materials.
- Methods of pedagogical research.
- Biomechanical video computer analysis of foot supporting-spring qualities disorder with the use of the program «Big Foot».

- Tensodynamometry.
- Methods of mathematical statistics.

The increasing competition in sport is leading to the increasing volume of training on all stages of the long-term training (Platonov V. N., 2004). Many authors believe that if a considerable training is often given without appropriate rest it can lead to the flexibility loss of ligamentous apparatus and muscles being in constant tension get weak. The ligamentous apparatus bears a load to keep the arch of foot but with time it gets weak and stretches.

Many authors dealt with the problem of the flatfoot control and prevention, K. N. Sergiyenko developed the technology of pedagogical control of the foot supporting-spring function of school age children, I. V. Bulanova dealt with the problem of the influence of sport specialization on the foot morphology. It was established that the sportsmen's foot height is lower than among the people who don't go in for sports. But sportsmen of such specialization as running, swimming despite the big training volume have higher arch of foot than among people who don't go in for sports and higher than the weightlifters, skaters, bicyclists have. It can be explained by the fact that the foot of marathoner does the work of dynamic character; the feet of the swimmers don't bear the load of the body and while performing a stroke are in the bent position. N. E. Mikhaylova «Correction of pathological feet position of children with the congenital clubfoot with relapse». The author developed in her work the complex of exercises for correction of pathological feet position. V. Bevzyuk and B. Kedrovskiy also dealt with flatfoot in sport «Foot biomechanics of sportsman with flatfoot». The research showed that the flatfoot is mostly found among weightlifters and other sportsmen who lift and move the weight.

The unilateral flatfoot can appear in jumping leg of jumper and also sportsman who had ankle joint injury, foot and shin injury. For the foot prevention and correction the authors recommend: the easy off of

intensity and volume of load, the training on the special surfaces, the usage of special sport shoes and orthopaedic shoes. And also: massage, swimming and special sanative gymnastics.

Many authors [2, 3, 4] pay attention not only to the pain in the lower limbs, but also to the spinal curvature in different departments and in different planes. It can lead in its turn to the wrong function of thoracic cage, abdominal cavity, it worsens the mobility of the pneumonic edges and diaphragm, as a result heart function disorder, respiratory and digestive organ disorders.

Frostel conducted his research and found that:

- 1) the usual stand, the 11. and 4. instep bones bear load;
- 2) one leg stand, the 1. and the 5. instep bones bear load but more often the 2. and the 4;
- 3) the stand on fingers, the author marks individual deviations of pressure distribution on a foot while standing on high heels in his research.

On this basis the load in the front foot can move from the head of the one instep bone to other depending on a stand, a position of feet and an area of support. Looking of two feet in different directions assists the compression of internal arch of foot, because such feet position is related with their pronation. Many authors mark that in education of children it is necessary to train children beforehand to open the feet while standing and walking. It is considered that the degree of feet expending is the index of foot weakness.

Bukin Y. V. also dealt with the characteristics of the sportsmen's feet and on the base of the research data he confirms that the correctly established educational and training load provides the normal condition of the arch of feet of young sportsmen.

Conclusions: The flatfoot is a big problem for a man and more for a sportsman that is why many authors paid their attention to the foot prevention and correction but the researches of different specializations sportsmen aren't studied enough. It is very important because the foot of a sportsman bears much more loads than the foot of an average man and is supposed to receive more deformation.

For the foot prevention and correction the authors recommend: the easy off of intensity and volume of load, training on the special surfaces, usage of special sport shoes and orthopaedic shoes. And also: massage, swimming and special sanative gymnastics.

In connection with all said before this is the urgent problem and it needs further researches.

List of the used literature

1. Bevzyuk Valentina, Kedrovskiy Boris Бевзюк «Foot biomechanics of sportsman with flatfoot» / Valentina Bevzyuk, Boris Kedrovskiy // Actual problems of youth sport // The data of the VI Ukrainian scientific practical conference. – Kherson, 2008.
2. Mikhaylova N. E. Correction of pathological feet position of children with the congenital clubfoot with relapse / N. E. Mikhaylova // Physical education of students. – No 3. – 2010.
3. Bulanova I. V. The influence of sport specialization on foot morphology / I. V. Bulanova // Soviet scientific conference for problems of sport morphology: The data of the 2. Soviet scientific conference for problems of sport morphology (Moscow, 1977) / Committee for physical education and sport SM USSR. SNIIPhK K. – Moscow, 1977. – P. 37–38.
4. Kotikova E. A. The preasure on the foot in different stand / E. A. Kotikova // Theory and praxis of physical education. – 1938. – No 1. – P. 32–42.
5. Laputin A. The Diagnostics of morphofunctional qualities of the sportsmen's foot / A. Laputin, V. Kashuba, V. Gamaliy, K. Sergiyenko // Science in the Olympic sport. – 2003. – No 01. – P. 67–74.
6. Platonov V. N. The System of sportsmen's training in the Olympic sport. The general theory and its practical applications: the book for students of universities for physical education and sport. – Kiev : The Olympic literature, 2004. – 808 p.

Annotation

In this paper, the results of generalization and systematization of scientific-methodological and theoretical literature conducted on the levels of study of disorders of the foot problems in athletes, we prove that flat is the most common disease of the lower limbs, revealed the extent and causes of disease, as well as outline the basic techniques prevention and treatment of flatfoot. In the study, according to the literature on the characteristics of the feet of young athletes and compared with those of young men, not athletes. Flat feet is a big problem for people especially for the athlete, and for this, many authors have paid attention to the prevention and correction of the foot, but a study of athletes of different specializations very little studied. This is important because the foot athlete takes a lot more stress than the average person stop and subjected to large deformations. According to the study found that specialize in sport has a direct effect on the feet.

Key words: flatfoot, basketball, children, prevention, correction.

Сергій Строганов, Костянтин Сергієнко. Профілактика та корекція порушень опорно-ресорних властивостей стопи юних баскетболістів. У цій статті за результатами узагальнення та систематизації науково-методичної й спеціальної літератури здійснено теоретичний аналіз рівня дослідження проблеми порушень функцій стопи в спортсменів, доведено, що плоскостопість є найбільш поширеним видом патології нижніх кінцівок, виявлено ступені та основні причини захворювання, а також окреслено основні методи профілактики й лікування плоскостопості. Під час дослідження за даними літературних здійснено характеристику стоп юних спортсменів та проведено порівняння з аналогічними показниками юнаків, котрі не займаються спортом. Плоскостопість є великою проблемою для людини, тим більше для спортсмена, і тому багато авторів звернули увагу на профілактику та корекцію стопи, але дослідження спортсменів різних видів спеціалізації дуже мало вивчено. А це дуже важливо, тому що стопа спортсмена переносить набагато більше навантажень, ніж стопа звичайної людини, і піддається більшій деформації. Згідно з отриманими даними встановлено, що спеціалізація в спорті має безпосередній вплив на показники стоп.

Ключові слова: плоскостопість, баскетбол, діти, профілактика, корекція.

Сергей Строганов, Константин Сергиенко. Профилактика и коррекция нарушений опорно-рессорных свойств стопы юных баскетболистов. В данной статье по результатам обобщения и систематизации научно-методической и специальной литературы осуществлён теоретический анализ уровня исследования проблемы нарушений функций стопы в спортсменов, доказано, что плоскостопие является наиболее распространённым видом патологии нижних конечностей, выявлены степени и основные причины заболевания, а также очерчены основные методы профилактики и лечения плоскостопия. В ходе исследования по данным литературы по характеристике стоп юных спортсменов проведено сравнение с аналогичными показателями юношей, не занимающихся спортом. Плоскостопие является большой проблемой для человека, тем более для спортсмена, и поэтому много авторов обратили внимание на профилактику и коррекцию стопы, но исследования спортсменов различных видов специализации очень мало изучено. А это очень важно, так как стопа спортсмена переносит намного больше нагрузок, чем стопа обычного человека, и подвергается большей деформации. Согласно полученным данным установлено, что специализация в спорте имеет непосредственное влияние на показатели стоп.

Ключевые слова: плоскостопие, баскетбол, дети, профилактика, коррекция.