Министерство спорта
Российской Федерации

Министерство спорта
Республики Татарстан

Поволжская государственная
академия физической культуры,
спорта и туризма

VII Всероссийская
научно-практическая
конференция молодых
ученых, аспирантов,
магистрантов и студентов
с международным
участием

«АКТУАЛЬНЫЕ ПРОБЛЕМЫ ТЕОРИИ И ПРАКТИКИ ФИЗИЧЕСКОЙ КУЛЬТУРЫ, СПОРТА И ТУРИЗМА»

КАЗАНЬ,
26 АПРЕЛЯ 2019 ГОДА

ББК 75.14
А 38
А 38 **Актуальные проблемы теории и практики физической культуры, спорта и туризма.**
Материалы VII Всероссийской научно-практической конференции молодых ученых, аспирантов, магистрантов и студентов с международным участием «Актуальные проблемы теории и практики физической культуры, спорта и туризма». В 3 т. (26 апреля 2019 года). – Казань : Поволжская ГАФКСиТ, 2019. – том 1 – 829 с.

В сборнике представлены материалы VII Всероссийской научно-практической конференции молодых ученых, аспирантов, магистрантов и студентов с международным участием «Актуальные проблемы теории и практики физической культуры, спорта и туризма», проходившей 26 апреля 2019 года на базе ФГБОУ ВО «Поволжская государственная академия физической культуры, спорта и туризма», г. Казань.
Сборник предназначен для специалистов в области физической культуры, спорта и туризма, преподавателей высших учебных заведений, научных работников, студентов, тренеров, спортсменов.
Материалы представлены в авторской редакции.

Составители:

Болтиков Ю.В., Ботова Л.Н., Волчкова В.И., Галеева Э.С., Галяутдинов М.И., Голубева Г.Н., Данилова Г.Р., Евграфов И.Е., Евстафьев Э.Н., Емельянова Ю.Н., Земленухин И.А., Зиннатнурова А.А., Золотова Е.А., Иванова Е.С., Исанаева Е.А., Ислямов Д.Р., Калимуллина В.Г., Касмакова Л.Е., Коновалов И.Е., Лекомцева Д.В., Мифтахов Р.Ф., Можаев Э.Л., Муртищева С.М., Назаренко А.С., Павицкая З.И., Парфенова Л.А., Савосина М.Н., Фонарев Д.В., Шатунов Д.А, Хуббатуллина А.Р.

Под общей редакцией проректора по научной работе и международной деятельности Поволжской ГАФКСиТ, д.п.н., проф. **Ф.Р. Зотовой**

УДК 796/799
ББК 75.14

SPORT AND FLAT FEET

A.I. Girfanova, student of group 71101,
Volga Region State Academy of Physical Culture, Sports and Tourism

(Научный руководитель) Scientific advisor – Candidate of Pedagogic Sciences, Associate Professor V.I. Volchkova

Abstract. In our paper we review the problem of flat feet are characterized by lowering its longitudinal or transverse arches and changing the shape of the foot. With flat feet, there is increased fatigue of the legs and the whole body after physical exertion, and the loss of springiness of the foot can cause curvature of the spine, so during training it is necessary to use therapeutic insoles and orthopedic arch supports, which ensures an even distribution of the load on the hip, knee joints and ankle.

Key words: sport, flat feet, prevention of flat feet.

Introduction. Flat feet-a serious and insidious pathology of the musculoskeletal system, in which there is a flattening of the arches of the foot, resulting in a complete loss of their characteristic cushioning and spring functions. It is characterized by a violation of the mechanics of walking, the impact on the health of different organs: the spine and joints of the lower extremities are experiencing heavy loads, there are pain in the spine and its deformation, arthritis and arthrosis of the knee and hip joints. When running flat feet there is deformation, grows bone on the thumb. The blood circulation of the lower extremities is disturbed, the ankles swell and hurt. Movement becomes difficult, there is a fast fatigue.

About 50% of the world's population suffer from flat feet. Pathology in women is observed in 4 times more than in men. However, people pay little attention to the condition of the legs, forget that a healthy foot provides us with comfortable living conditions and longevity and consult a doctor most often already with complications of flat feet.

The purpose of the study: to study flat feet and the influence of sport on it.

Research objects: to study the feet by five people aged 18-19 years.

Research results and their discussion. Human foot has two main arches: longitudinal and transverse, which determine its entire functional ability. They soften the blows to the ground and distribute the load of the body during movement, i.e. the arches of the foot are springs and levers, providing maximum comfort of movement with minimal consequences for the body.

In the longitudinal arch there are two arches: external and internal. The external longitudinal arch is formed by the fourth and fifth metatarsal, cuboid and calcaneus. This arch to a large extent performs a supporting function when standing and walking. The inner longitudinal arch formed by the three cuneiform, the first three metatarsals and the talus and navicular bones and the spring performs more the function [1].

The transverse arch is formed by the heads of the metatarsal bones arranged in an arc.

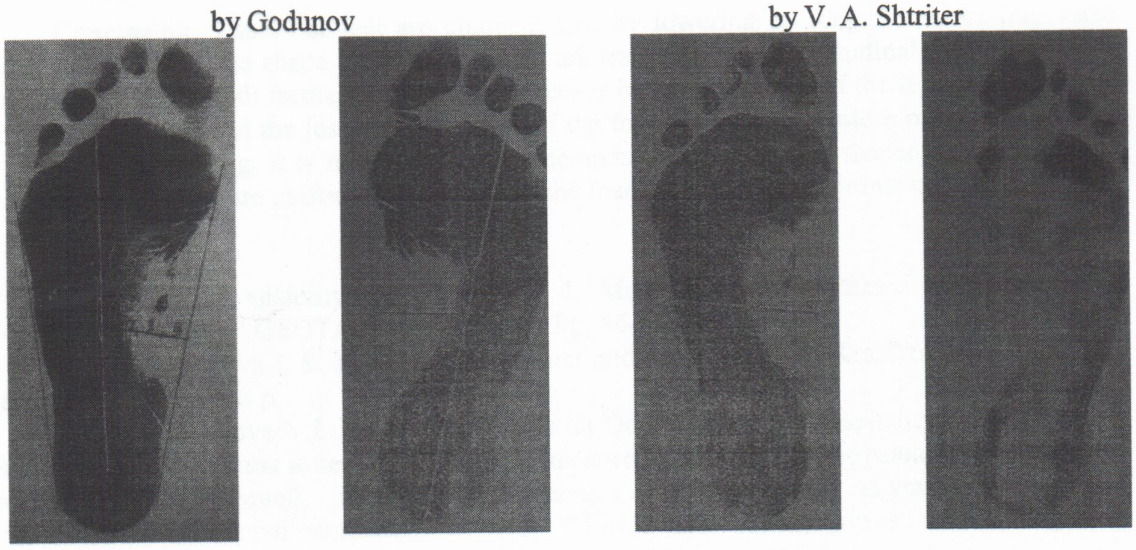
There are congenital (3% of the population) and acquired forms of flat feet. Depending on which arch of the foot is flattened, transverse and longitudinal flat feet are distinguished. There is also a combined flatfoot with simultaneous flattening of the transverse and longitudinal arches.

In the diagnosis of flat feet, the following methods were used: examination, plantography, podometry and x-ray examination [2].

When examined, attention was paid to the color of the skin of the foot, the presence of corns, thickening of the skin and the nature of the wear of shoes. Of the five people, only one we have identified characteristic signs of flat feet. He has a feeling of fatigue and pain when pressing on the foot when walking and after physical exertion.

Plantography was used to determine the degree of flat feet. The essence of the technique is to obtain a print of the foot contour on paper. The foot was smeared with 5% alcohol solution of iodine and left a foot print on a sheet of paper. Processing and decoding of the plantogram, which

was an imprint of the heel, the cargo arch of the foot and its anterior section, was carried out by two methods: Godunov and V. A. Shtriter and as a result revealed flat feet in only one person. In the Godunov method, we have determined he has a grade I flatfoot, V. A. Shtriter – percentage of flatfoot to the entire surface of the foot accounted for 53.6-54.1 per cent, at a rate of from 40 to 50% (fig.1).



The length of the foot from the back side of the heel to the thumb and the height between the surface of the support and the upper part of the scaphoid bone were measured. Then figured photometrische index Friedland. This index represents the ratio of height to foot length and is expressed as a percentage. In our case, the Friedland index was 27 -29%, which characterizes the first degree of longitudinal flat feet (norm from 31% to 29%).

Radiography was performed only in a student with flat feet in a polyclinic in a standing position under load. On radiographs in the lateral projection with the load on the leg and without it, the state of the longitudinal arch is judged by the inclination of the heel bone to the plane of the support. The angle of inclination of the heel bone to the horizontal plane is normally 16-25°. In our case, we observed a decrease in the angle of inclination (12%).

We believe that the causes of flat feet in the student is hereditary predisposition and weakness of the ligamentous apparatus.

Prevention of flatfoot includes the correct selection of shoes with a hard heel to fix the heel, a small heel, arch support and the use of orthopedic insoles; performing a set of exercises to strengthen the foot; food products containing sufficient calcium and phosphorus and constant supervision of the orthopedist.

Given that student leads a physically active life, we recommend the following culture of sports:

1. Free style swimming. It has a beneficial effect on the spine, strengthens the back muscles, helps to fight posture and other pathologies. In addition, during swimming there is tension and relaxation of the muscles on the legs and it helps to strengthen the arches of the foot.
2. Amateur skiing, where small loads on the legs are given. Intensive skiing is contraindicated.
3. Equestrian sport. When riding horses, the muscles and tendons of the back and thighs are involved, which contributes to their strengthening.
4. Some types of martial arts: Aikido, karate and kung fu are aimed at improving the elasticity of muscles and tendons and do not involve an increased load on the legs.
5. It is also useful to do water aerobics, diving, athletics, cycling.

When flat feet are not recommended sports such as skating, dancing, weightlifting, kettlebell exercises, figure skating, hockey, jumping, which are associated with the tension of the muscular-ligamentous system and with high pressure, which requires increased depreciation. In these sports increases the load on the legs and spine, so they cannot be engaged in the flattening of the foot, as well as scoliosis. All that can Influence of sport on development of athlete's personality [3].

Conclusion. Thus, flat feet are characterized by lowering its longitudinal or transverse arches and changing the shape of the foot. There are transverse and longitudinal flat feet, as well as a combination of both forms. With flat feet, there is increased fatigue of the legs and the whole body after exercise, and the loss of springiness of the foot can cause curvature of the spine. With flat feet during training, it is necessary to use therapeutic insoles and orthopedic arch supports, which will help to ensure uniform distribution of the load on the hip, knee joints and ankle.

References

1. Human anatomy: textbook: Vol. 1. Musculoskeletal system / edited by L. L. Kolesnikov. - Moscow: GEOTAR-Media, 2014.- Pp. 56-60.
2. Krasikova I. S. Flat Feet. Prevention and treatment /I. S. Krasikova.- M.: Teacher and student, 2004 – 128 p.
3. Volchkova V.I. Influence of Sport on Development of Personality/V.I. Volchkova //В сборнике: Проблемы и перспективы физического воспитания, спортивной тренировки и адаптивной физической культуры материалы Всероссийской научно-практической конференции с международным участием. ФГБОУ ВО «Поволжская государственная академия физической культуры, спорта и туризма». - 2016. - С. 809-810.