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Footwear Designed For Patients with Pronounced Deformities and Foot Defects

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ABSTRACT: This article presents the results of scientific research on the development of design and technology of medical preventive shoes and shoes of increased comfort in the general classification, as well as medical indications for the prescription of complex orthopedic shoes.

KEY WORDS: orthopedic footwear, foot deformity, footwear design, upper parts, orthopedic insoles.

I. INTRODUCTION

All footwear can be divided according to the following characteristics: purpose, age and gender groups and sizes, design and height of the upper blanks, heel height, the materials used to manufacture details of the upper and the bottom of the shoes, methods of fixing the blanks to the upper [1].

II. GEO SCATTERED TYPE BIG DATA IN APPLICATION

According to the classification proposed by Yu.P. Zybin [2], all footwear is divided into two main types: domestic and special. In turn, special footwear is divided into industrial, sports and medical footwear.

Medical footwear includes preventive, i.e., contributing to the prevention of foot disease in persons prone to it, and orthopedic, used in the pathology of the feet.

Orthopedic footwear is divided into low-complexity and complex, depending on the severity of the foot deformity.

III. GEO SCATTERED TYPE BIG DATA IN APPLICATION

Low-complex orthopedic footwear is designed for persons with moderately pronounced foot deformities or shortening of the lower extremity, compensated by a bevel of up to 30 mm. The shoes are produced with increased fullness on special orthopedic pads. Compulsory individual elements of such shoes are orthopedic insoles, spikes up to 30 mm, intersole layers [3].

IV. SYSTEM ANALYSIS

Complex orthopedic shoes are designed for people who have pronounced deformities and defects of the foot. Medical indications for the prescription of complex orthopedic footwear are such variants of the anatomical and functional state of the feet, in which the use of conventional shoes even in the presence of insertion devices or the use of low-complexity shoes become impossible because of the significant expression of deformities or changes in linear or volumetric dimensions of the feet .

V. INPUT DESIGN

Prophylactic footwear is a type of special footwear prescribed in the presence of not sharply pronounced foot deformities, the design of which contains some corrective elements. Prophylactic footwear is made both on special and on standard pads.



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VI. OUTPUT DESIGN

Corrective elements of such shoes are insoles, midsole, lining of the internal arch.

In [4] proposed a slightly different version of classification, where orthopedic shoes are separated into a separate group, and does not apply to medical shoes. According to the author, medical footwear plays primarily a therapeutic role, improves the function of the foot or other organs, relieves pain, reduces its fatigue, prevents the progression of deformities in various diseases.

VII. CONCLUSION

In our opinion, preventive footwear should be produced for children, because the prevention of foot deformities is most effective precisely in childhood. For adults who lead an active life and spend a lot of time on their feet it is proposed to make shoes of increased comfort, the design of which includes elements that provide conditions for normal functioning of the foot.

VIII. SCOPE

Shoes of increased comfort belong to the household footwear and constitute a certain segment of the footwear consumer market. They are distinguished by constructive solutions that provide maximum wearing comfort, the presence of special parts (anatomic insoles, half-insole), rational scientifically grounded inner form of shoes and, in particular, footprint, the use of high-tech materials in the manufacture of shoes, their rigid selection according to physical-mechanical and hygienic indicators.

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