

A BIOMECHANICS RESEARCH ON GAIT OF YOUNG GIRL DRESSED IN DIFFERENT KIND OF SHOES

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INTRODUCTION: The influence of various shoes on young girls' health has drawn much attention from the society. Hence, many articles have focused on the topic, that is to say, what kind of shoes are suitable for young girls' physical growth. In this paper measuring kinematics and dynamics parameters were used to make a comparative research. Based on the biomechanical comparison on different gaits, among those girls put on high-heeled shoes, putting shoes and other kinds of shoes individually, it was advisable that high-heel shoes and putting shoes have negative effect on young girls' normal growth.

METHOD: The subjects, nine girls (age 18 ± 2 years, stature 161 ± 4 cm, weight 48 ± 3 kg) underwent a series walking trials with different kind of shoes (padding shoe with button-height 12cm, high-heeled shoes with 10cm and 6cm individually, sneakers and barefoot). SIMI motion analysis system and Foot-scan system were used to measure the kinematics parameters of leg and the pressure distribution of foot-ground.

RESULT AND DISCUSSION: The result of research showed that: 1) as far as the group with sneakers was concerned, it was concluded that gait was healthy. Some characters were followed as: Stride length was longer, stride velocity was quicker, the gait cycle was shorter and the scope of up-and-down of body gravity center was lesser as well. In addition, we found that the cycle time of each leg in single support was comparatively shorter. The Flexibility of the ankle, knee and hip joints was better. The reaction force of foot-ground and its distribution were normal. 2) As far as the groups with high-hell shoes and pudding shoes was concerned, the data showed contrary results to those of the group with sneakers. The results also indicated the function of the leg muscle was degenerate and the flexibilities of the ankle joint, knee joint and hip joint was worse. The reaction force of foot-ground and its distribution were abnormal. 3) If tiptoes were pressed for a longer time, osteophyte and metatarsal appeared. Moreover, young girls' normal growth were probably by the high-heel shoes or putting shoes. So we advise young girls as far as possible not to dress in high-heel shoes and pudding shoes.

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