

# The effect of compression stocking on legs` geometry changes within different movement

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**Abstract:** The demand for compression clothing and rehabilitation goods increases every year. Today's market for compression products is not limited to medical application. They are widely used in sports and everyday life. With the improvement of human needs and the development of technology, more and more attention is paid to the comfort and quality of the products used. Particular emphasis in this matter is on the items and products that can help maintain health levels.

Simultaneously ensuring the necessary functional properties, namely the pressure level at different areas, and high levels of comfort of the compression clothing is problematic within the mass production for products of standard sizes. From the other side, the emerging technologies in textile industry as 4Dscanning, 3D design and CAD system enable manufacturers to produce bespoke textiles on-demand.

In this study the changes in leg size and shape as well as pressure at different site of lower leg were investigated

using advanced tools such as Move4D scan system and Teksens pressure measuring device. The effect of class of compression stocking, wearing time and movement type was analyzed for few volunteers.

It is the basis for high accuracy ready-to-wear compression stocking development based on the concept of the personalization.

**Keywords:** compression stocking, 4D body scanning, lower leg, body size and shape, dynamic position.

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