

## **The Mechanical Interaction between the Toes and the Underlay in the Standing Position and Its Relationship to the Elevation of the Instep**

The research is focused on the enquiry into the relationship between the measure of the force action of the toes on the underlay and the elevation of the instep.

The basic theme was to verify, if the higher measure of the force activity of the toes correlates with the superior instep.

Within filling the project of this work, there were suggested and performed original experiments. There was made a new method for the evaluation of the instep and for measurement of the force action of the toes on the underlay during the standing position on the dynamometric plates Kistler®. There were 5 probands involved in the experiment, aged 21-28years, without any expressive pathological determination of the movement system. Each proband was subjected to the investigation of the elevation of the instep, and to the experiment, which found the measure of the force action of the toes on the underlay during the standing position.

The data evaluation was based on comparing of both parameters, the outcomes of every single proband were comparing and there were founded their shared characteristics.

Resulting from the outcomes, there is a relationship between the measure of the force action of the toes on the underlay during the standing position and the elevation of the instep. It is demonstrably, that in the case of the flat foot, the force action of the toes on the underlay is significantly lower, than in the case of the normal foot.

**Key Words:** Arch, Instep, Toe, Standing, Dynamometric plate Kistler