

Plantography

Plantography is an investigative method that examines the footprint of the foot, focusing on its arch. To obtain a plantogram, pressure carpets, platforms or special insoles are most often used, but a completely ordinary drinker and a wet foot are also sufficient. Several methods are subsequently used for evaluation, the most famous of which is the Chipaux-Šmiřák method.

In the Czech Republic, the technology of the companies Emed-at, Footscan and Baropodometer with a high density of capacitive and resistance sensors is used to obtain plantograms.

The Chipaux-Smiřák method

It is based on the construction of the external tangents of the plantogram. The widest and narrowest point of the impression perpendicular to the tangent is measured. We will then use the obtained values into the formula:

$$i [\%] = (a / b) * 100$$

where "a" is the narrowest place of the plantogram, "b" the widest place of the plantogram, "i" the resulting value in percent. With this method, it is important to monitor whether the plantogram you get is complete (it is not interrupted), because if it is not, it is a so-called **high leg**. In this case, the distance between the impressions of the front and back of the plantogram is measured.

| category foot flatness | foot flatness index |
|------------------------|---------------------|
| very high leg | > 3.1 cm |
| medium high leg | 1.6–3 cm |
| slightly high leg | 0.1–1.5 cm |
| normal leg | 0.1–45.0 % |
| slightly flat foot | 45.1–50 % |
| medium flat foot | 50.1–60 % |
| very flat foot | 60.1–100 % |

Mayer's Method

It consists in finding the geometric center of gravity of the heel, or the center of the segment at the widest point of the heel. After connecting with the medial edge of the 4th finger, the so-called Mayer's line is formed. During the evaluation, the pedologist observes the overlap of the plantogram at the narrowest point across this line in the medial direction.

Dungle's Method

This method indicates the so-called degree of valgusity, or bowing. It is based on the formula:

$$i = (1/2 AB - AC) * (100 / AB)$$

where "AB" is equal to the segment between the inner and outer ankle, "AC" is the distance of the outer ankle from the geometric center of gravity of the ankle. The result is either positive values, which indicate the relative magnitude of valgusity, versus negative values, which are typical of varosity.

Usage

- diagnosis of flat feet, high feet
- development of sports equipment (shoes)
- analysis of sports performances
- gait analysis
- posturography

Links

Related Articles

- Foot arch
- Pes planovalgus
- Therapy for balance disorders

References

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