

# Anatomy and Physiology

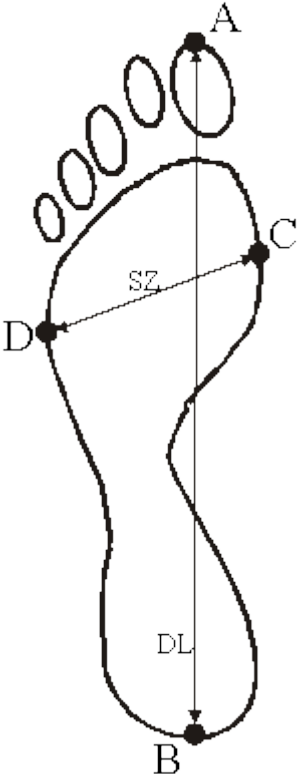
## Laboratory 10 - Podography analysis

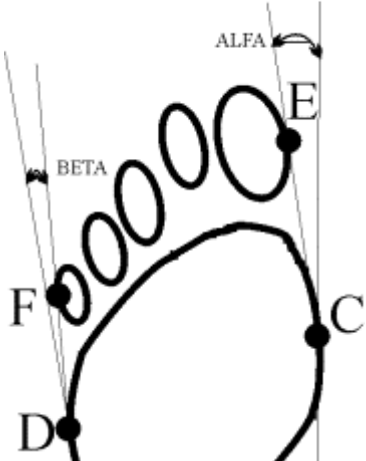
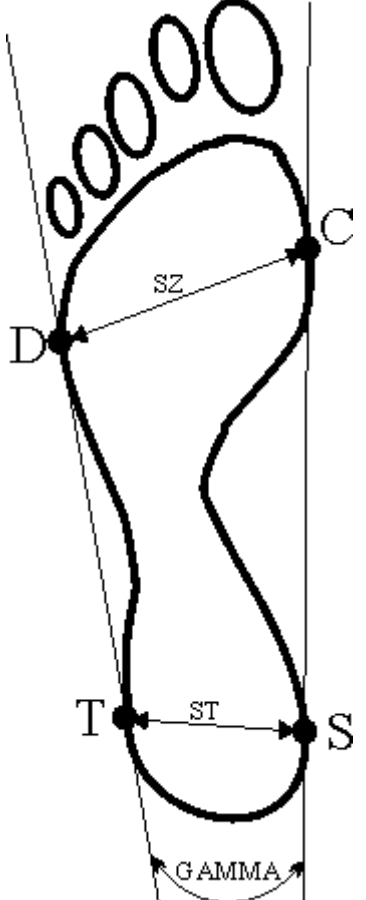
### 1. Introduction

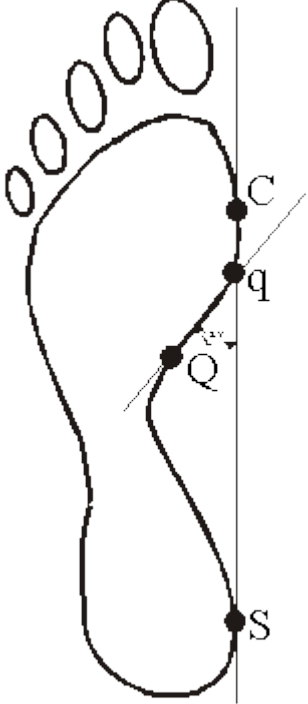
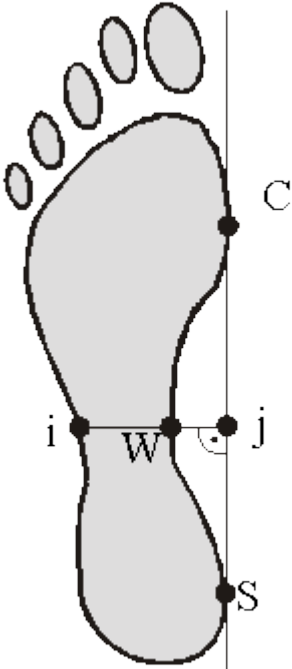
Podiatry, sometimes called podology, is a branch of medicine devoted to the study, diagnosis, and medical and surgical treatment of disorders of the foot, ankle, and lower extremity. In feet examination a number of parameters is examined. In order to estimate the values of these parameters the plantoconturogram has to be created.

#### Parameters [1]:

Table 1

	<p><b>Foot length</b> estimated between points A and B (DL)</p> <p><b>Foot width</b> estimated between points C and D (SZ)</p> <p>Foot length/foot width relation (<b>Wejsflog indicator</b>)</p> <p>The relation of foot length to its width should amount to 3:1. As a rule it takes on values between 2 and 3. The values closer to „2”, e.g. 2.15 give evidence of transversal platypodia, whereas closer to „3”, e.g. 2.95 prove correct transversal arching.</p>
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	<p><b>Hallux valgus angle ALFA</b></p> <p>It is an angle between a tangent drawn to medial foot edge and a tangent drawn from the point at the widest place of forefoot to the outer edge of hallux. The standard value for hallux valgus angle amounts from 0 to 9 degrees</p>
	<p><b>Heel width</b> estimated between points S-T.</p> <p><b>Heel angle GAMMA</b></p> <p>It is marked by two tangents drawn to the inner and outer foot edge. The tangents cross beyond the heel and form an angle. The standard for heel angle amounts to 15-18 degrees</p>

	<p><b>Clarke angle indicator (CL)</b></p> <p>There are a lot of methods used for evaluation of prints by drawing a number of auxiliary lines. The most popular and simplest is Clarke method. It consists in drawing a straight line (C-S). This line crosses the inner tangent (Q-q) and forms the Clarke angle. The value of this angle looks like as follows:</p> <p>flat foot <math>x - 30^\circ</math>,  foot with diminished arching <math>31^\circ - 41^\circ</math>,  normal foot <math>42^\circ - 54^\circ</math>,  foot with increased arching <math>55^\circ - x</math>.</p>
	<p><b>Sztriter-Godunow indicator (KY)</b></p> <p>It determines the length relation of a segment which runs at the center of arching of the longitudinal arch (through a shadowed part of the trace) to the length of a segment which is drawn through the shadowed and not shadowed part of plantokonturogram.</p> <p><math>KY = (W - i) / (j - i)</math>  (W - i) - shadowed part; (j - j) - shadowed and not shadowed part.</p> <p>Foot classification according to KY-indicator in adults:</p> <p>hollow foot <math>0,00 - 0,25</math>,  normal foot <math>0,26 - 0,45</math>,  lowered foot I° <math>0,46 - 0,49</math>,  lowered foot II° <math>0,50 - 0,75</math>,  flat foot <math>0,76 - 1,00</math>.</p>

## 2. Laboratory tasks

Use the podograph (plantoconturograph) to obtain the imprint of a foot of each group member. Perform measurements based on the information in Table 1 in the introduction to fill in Table 2.













Table 2

Parameter	Person 1		Person 2	
	Measurement	Diagnosis	Measurement	Diagnosis
Foot length		-		-
Foot width		-		-
Wejsflog indicator				
angle ALFA				
Heel angle				
Clarke angle indicator				
$W - i$		-		-
$j - i$		-		-
Sztriter-Godunow indicator				

### 3. Final questions

A. Classify footprints as hollow foot, correct foot or platypodia.

1.		c
2.		p
3.		h
4.		p
5.		c
6.		h
7.		p
8.		c
9.		p
10.		h

B. What type of exercises would you suggest for a patient with hollow feet?

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C. And for patient with platypodia?

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