

Development of innovative training solutions in the field of functional evaluation aimed at updating of the curricula of health sciences schools



MODULE: BIOMECHANICS OF GAIT
REINFORCEMENT ACTIVITY UNIT B: BIOMECHANICAL ALTERATIONS IN GAIT



ASSUMPTIONS

Below are the joints angle courses obtained for two children with cerebral palsy. These results were obtained during own research, the full result of which was presented in a monograph edited by Michnik, Kopyto and Jochymczyk-Woźniak. Children, apart from standard rehabilitation, were treated using botulinum therapy. The results obtained before and after administration of botulinum toxin are presented. The measurements were carried out using the BTS SMART system.

ASSUMPTIONS

Patient 1 with diagnosed diplegia at the age of 7, with a body weight of 24 kg and a body height of 128 cm (BMI-14.63, 29th percentile, normal weight).

Patient 2 with diplegia paresis of the right side at the age of 3 years and 7 months, with a body height of 100 cm and a body weight of 14 kg. A BMI of 14 (3 percentile) classifies the subject to underweight children. During the second study after 6 months of treatment, the body mass index was 14.7; 19th percentile (height 101 cm, weight 15 kg).

TASK 1

Describe courses of joints angles, indicating deviations from the norm both in values and in the nature of the course

TASK 2

Point out the differences in courseS of joint angles appearing on the charts obtained before and after treatment and rehabilitation.

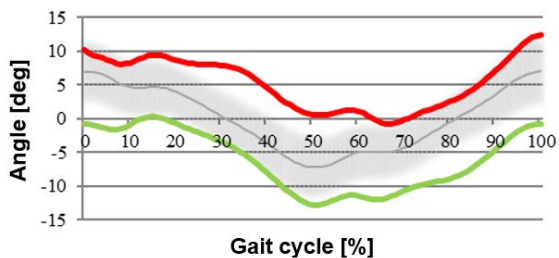
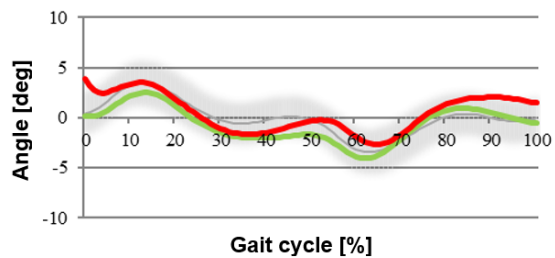
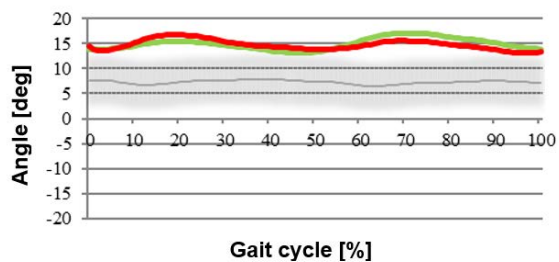
COURSES OF JOINT ANGLES

PERSON 1



PELVIS

BEFORE TREATMENT

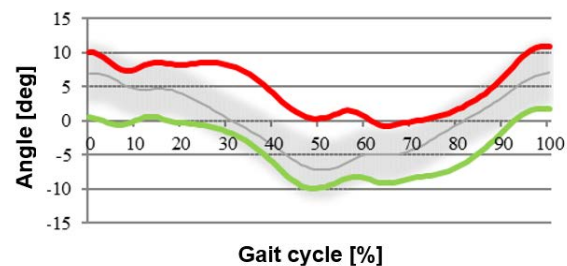
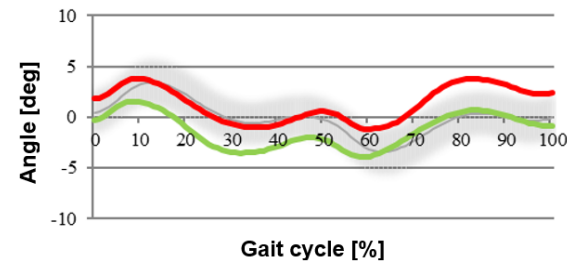
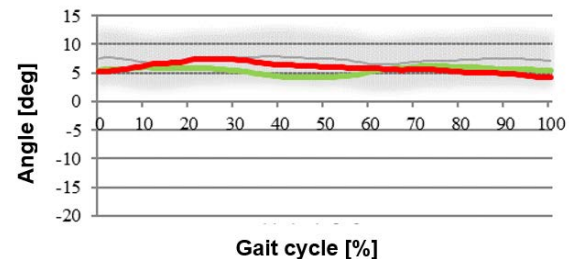


Tilt

Obliquity

Rotation

AFTER TREATMENT

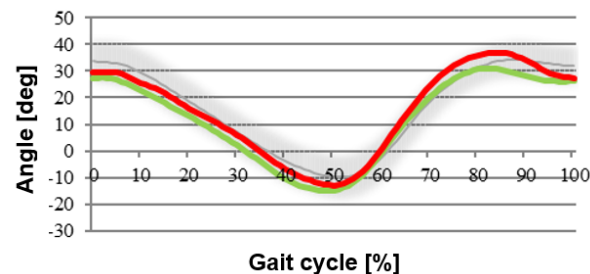
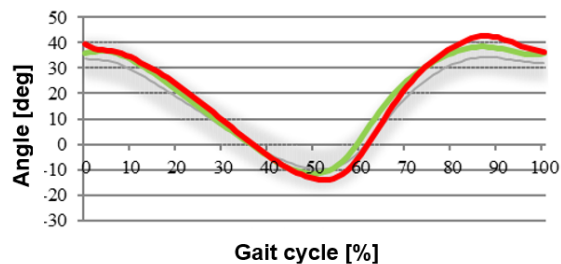


HIP JOINT

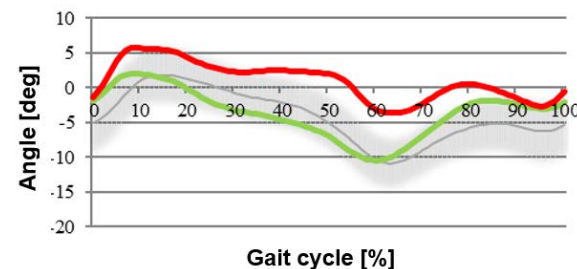
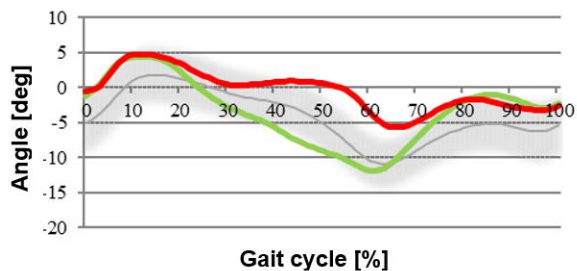
BEFORE TREATMENT

AFTER TREATMENT

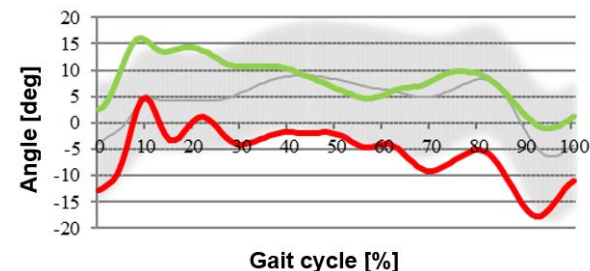
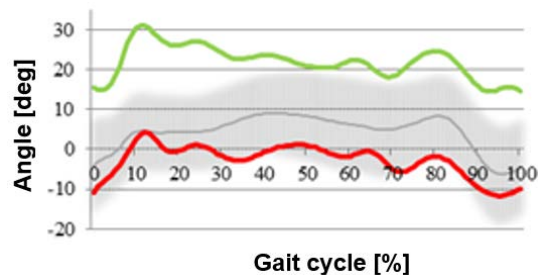
Flexion/Extension



Adduction/Abduction

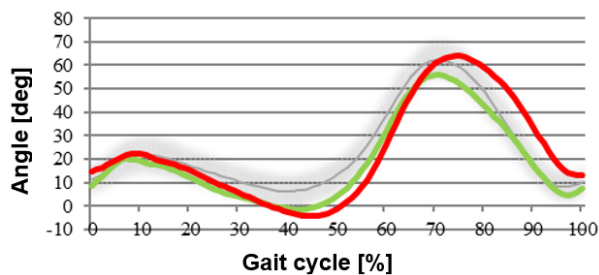


Rotation



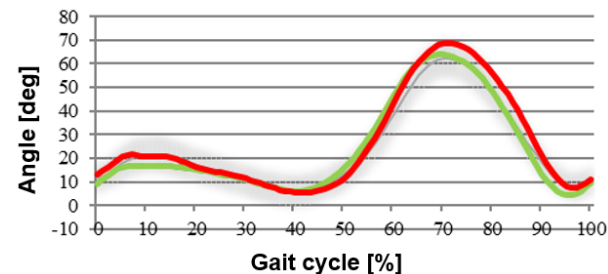
KNEE JOINT

BEFORE TREATMENT



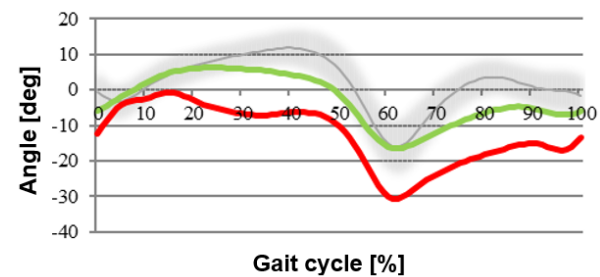
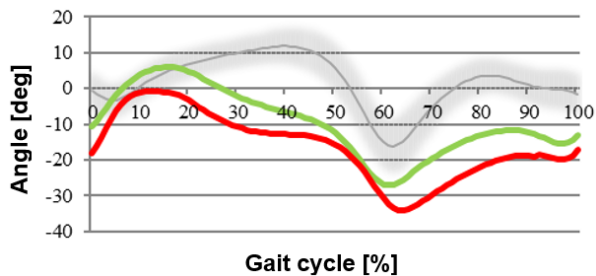
Flexion/Extension

AFTER TREATMENT

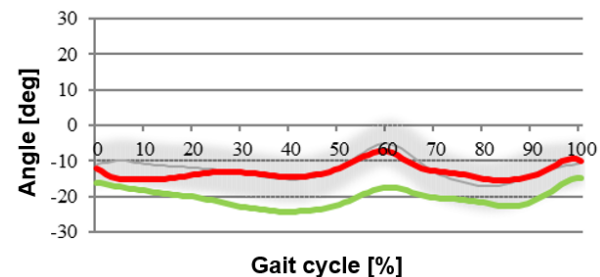
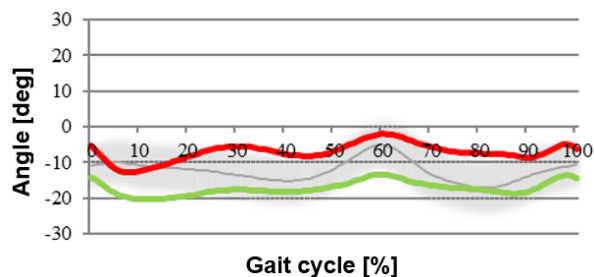


ANKLE JOINT

Dorsiflexion/ Plantarflexion



Rotation



COURSES OF JOINT ANGLES

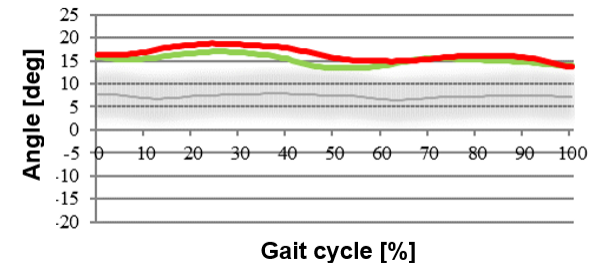
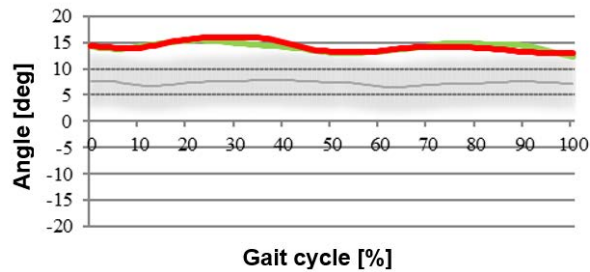
PERSON 2

PELVIS

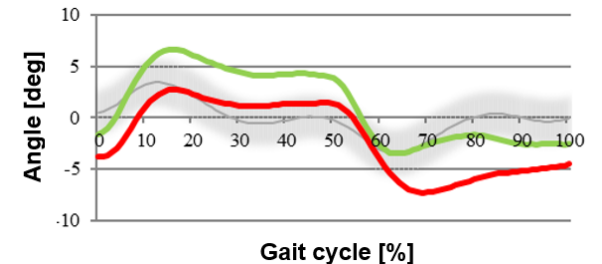
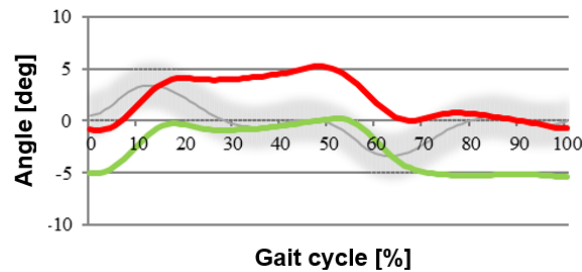
BEFORE TREATMENT

AFTER TREATMENT

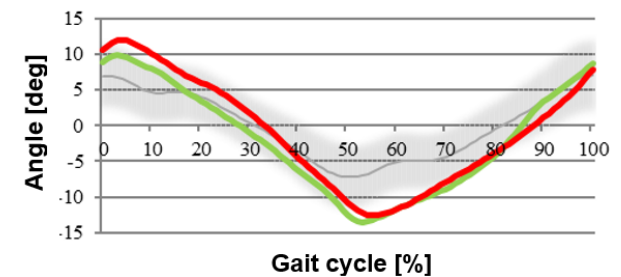
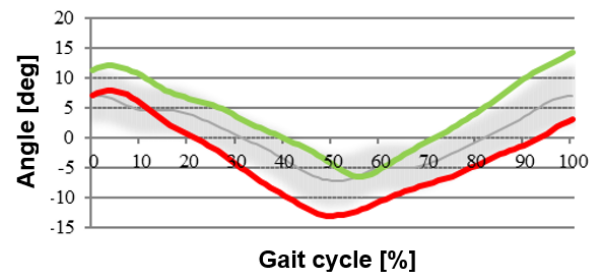
Tilt



Obliquity



Rotation

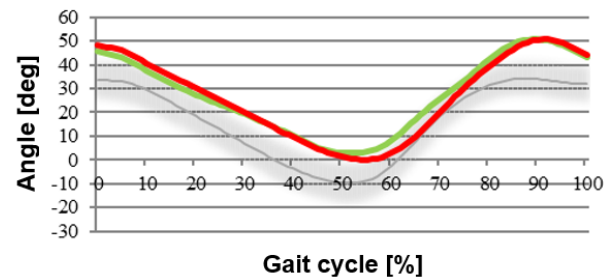
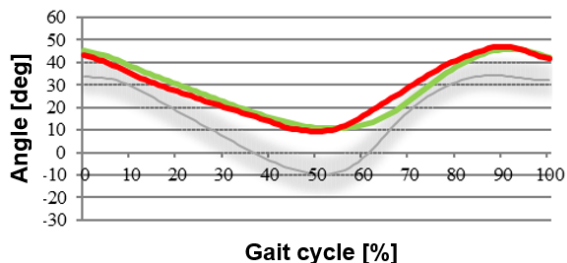


HIP JOINT

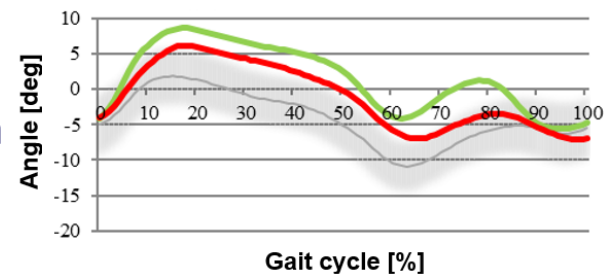
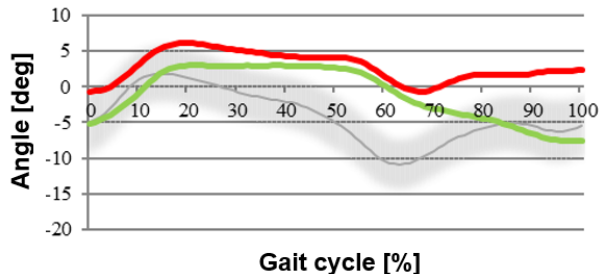
BEFORE TREATMENT

AFTER TREATMENT

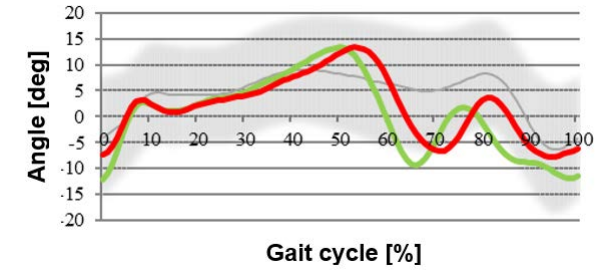
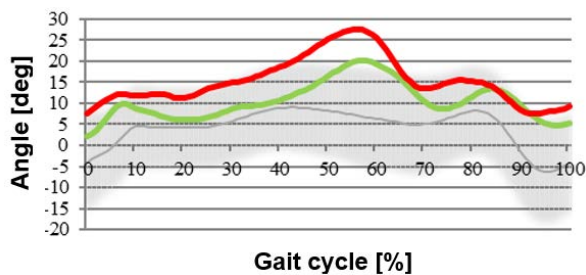
Flexion/Extension



Adduction/Abduction

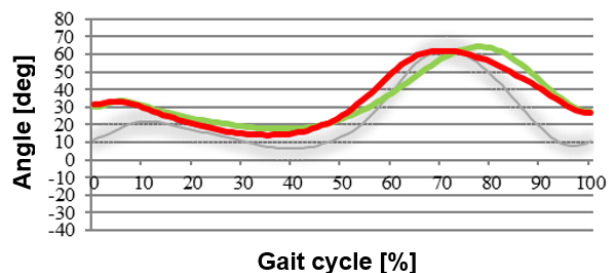


Rotation



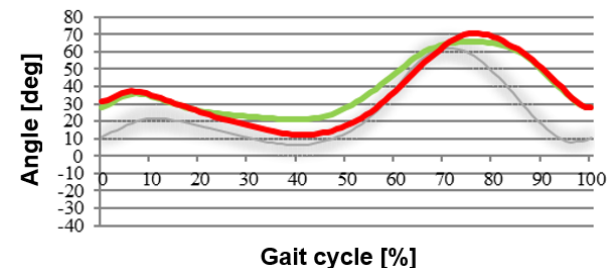
KNEE JOINT

BEFORE TREATMENT

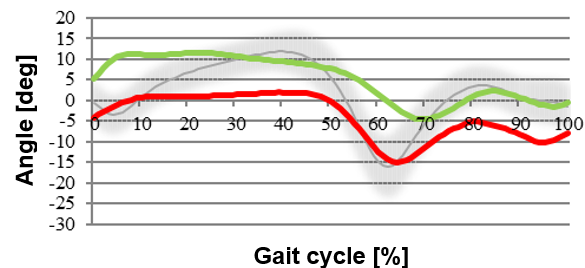


Flexion/Extension

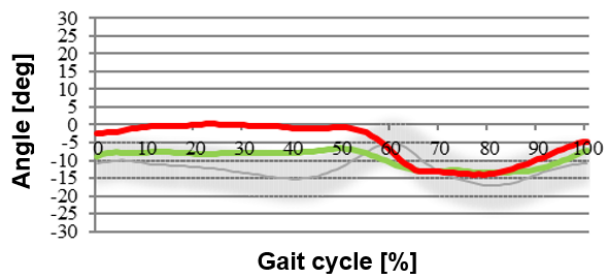
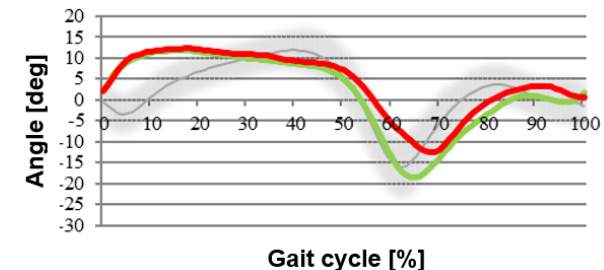
AFTER TREATMENT



ANKLE JOINT



Dorsiflexion/ Plantarflexion



Rotation

