Title:
H-reflex, depending on the position of the joint

Aim:
The aim of this study is to determine whether the position of the ankle joint influences the parameters of the soleus muscle H-reflex. We are interested in a change of amplitude, latency and threshold of the H-reflex.

Method:
To measure H-reflex, we have used surface electromyography. We examined two different positions of the foot in probands lying on the bed on their stomach. The first position was with the feet out of bed, around 90 degrees at the ankle joint (rest position). At the second position, the foot moved the bed and was in position in plantar flexion. Stimulation were performed over the tibial nerve in the popliteal fossa. The response, we recorded the surface electrode over the soleus muscle.

Results:
By changing the position of the ankle from rest to plantar flexion there was no statistically significant changes in amplitude, latency or threshold of the H-reflex. In plantar flexion, we found a reduction of Hmax/Mmax ratio, which is probably due to reduced excitability alpha motoneurons through reciprocal inhibition from stretched muscle of the leg.

Keywords:
H-reflex, soleus muscle, joint position, surface EMG