

## **Abstract**

Standing stability is ensured by informations from the sensory systems, which include the vestibular system, vision, proprioception and hearing. The role of hearing is often neglected.

This work aims to determine whether hearing plays a role in maintaining standing stability.

The theoretical part of this bachelor thesis summarizes the existing knowledge about the auditory system. It deals with other systems that affect standing stability and, last but not least, tries to summarize the results of research into the effect of hearing on standing stability.

The experimental part consists of the evaluation of stabilometric testing of 16 healthy probands (8 women and 8 men) using sound stimulation. Probands were tested in two measurements with an interval of at least 1 week. First in 10 conditions without sound stimulation. Then using sound stimulation, always in the same position - standing with closed eyes on a soft surface. The sound stimulation consisted of the following recordings: a spoken word that the proband understands (weather forecast in Czech language), elimination of auditory inputs with earplugs, stimulation with white noise, a spoken word that the proband does not understand (Chinese or Finnish) and a message with content the the proband was asked about after the measurement was finished by question.

The aim of this part of the work was to verify whether the individual selected parameters change during sound stimulation, compared to without it, i.e. whether hearing affects the stability of standing in some way. The results showed that during sound stimulation the selected parameters were changed. At the same time, the results correlated with the time spent in the tested position (standing with eye closed on soft surface). It was therefore not possible to determine quite clearly whether hearing influenced the stability of the standing.