Our research is focused on using orthotic devices in patients with Duchenne muscular dystrophy (DMD), particularly in the ambulant phase of the disease. DMD is the most common hereditary muscle disorder in childhood. The typical symptoms are progressive muscle weakness and contractures that lead to loss of ability of independent walking, typically among the age of 9 to 13 years.

The theoretical part is focused on pattern of standing and walking in these patients, the posibilities of useing the orthotic devices in various stages of the disease, and on the problems of contractures and deformities. The other teoretical part of the work is devoted to certain physiotherapy interventions and to associated physical activities.

The practical part of the research is based on assesment of effect of physiotherapy and use of the nigt orthesis AFO (Ankle- Foot-Orthesis) in group of 10 DMD boys in the average age 9,1 ± 2,7 years. All boys were examined before and after 6 month of therapy. In examinations the following tests were used: NSAA (North Star Ambulatory Assessment), BI (Barthel index) measurements of muscle strength by hand held myometr and measurement of PROM (passive range of motion). The practical part also includes analysis of questionnaire datas from 19 patients with DMD collected in year 3/2013, questions were mainly related to use of assistive devices, intensity and frequency of physiotherapy. Statistically significant changes occurred only in the PROM flexion of the knee, where there was a magnification in range of motion and also in the evaluation of NSAA, which worsened as the average score, and in the time trials.