

# CLUBFOOT - DEFORMITY DEGREE AND FUNCTIONAL OUTCOMES AFTER THE TREATMENT

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## Background and Aims

Occuring in 1-2 per 1.000 newborns, clubfoot is one of the most common anomalies of the locomotor system. With its multifactorial etiopathogenesis, including both genetic and environmental factors, 80% of clubfeet are idiopathic while 20% are syndromic, present with associated malformations. The aim of this study was to show correlation between deformity degree and functional outcomes after the treatment.

## Methods

In our cross-sectional study, we evaluated 50 randomly selected, eligible clubfoot patients that were treated at the University Children's Hospital, Belgrade, Serbia between November 2006 and November 2022. The treatment has consisted of using Ponseti method while surgical treatment was used for those patients resistant to previous conservative method according to Ponseti, as well as for syndromic or neglected clubfoot cases. Deformity degree was categorized as I, II, III or IV, according to Dimeglio classification while functional status of patients after the treatment was assessed by using Clubfoot Assessment Protocol (version 1.0). Correlation between deformity degree and different functional scores was tested by Spearman's test.

## Results

Results of our study have shown statistically significant ( $p < 0,001$ ), negative correlation between clubfoot deformity degree and all evaluated functional scores, including: passive mobility, muscle function (strength), morphology and motion quality of the foot after the treatment. Surprisingly, more patients (around 70%) were treated both conservatively and surgically, despite Ponseti method being seen as a "gold standard". Possible explanation could be higher number of syndromic or neglected clubfoot cases, resistant to previous conservative treatment.

## Conclusion

This study has shown an important impact of initial clubfoot deformity degree on its functional outcomes after the treatment, suggesting that severe clubfeet are associated with the worst functional scores after conservative and/or surgical treatment that should be started during first weeks of life.

**Keywords:** clubfoot, Dimeglio classification, Ponseti method