

## Summary of research proposal LROI



### **Title:**

Total Hip Arthroplasty in pediatric and adolescent patients: Analysis of >200 Primary Hip Replacements in patients under 18 years old in the Dutch Arthroplasty Registry from 2007- 2021

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### **Abstract:**

Total hip arthroplasty (THA) is considered as one of the most successful surgical procedures, with a significant positive effect on quality of life and daily functioning, especially for the elderly. THA can also be indicated in younger patients, even in children/adolescents, e.g. in cases with severely deformed hip joints, for example as a consequence of pediatric hip disorders, such as slipped capital femoris epiphysis (SCFE), hip dysplasia (DDH), Perthes, or juvenile arthritis (JIA). However, literature is lacking on the indications, types of implants and the outcomes of THA in patients under the age of 18 years. To the best of our knowledge, a study with the available LROI data on THA in patients <18 years would be the largest series on this particular patient group.

Pediatric hip disorders can coincide with specific surgical challenges. First of all, younger patients might have smaller hips, for which consequently smaller implants might be needed. Additionally, for example DDH and Perthes lead to pathomorphologic changes of the acetabulum and femur, and limited bone stock. Hence, the surgeon must be prepared for e.g. acetabulum bone deficiency and reconstructions, under- or oversizing of the cup, altered hip center, increased anteversion, coxa valga, and coxa vara. This can have consequences for types and sizes of implants, as well as technical aspects of the procedure (for example with regards of the use of auto- or allograft and/or additional hardware). Furthermore, young patients have higher demands and a longer life expectancy. Consequently, combined with the technical challenges, reported outcomes and prosthesis survival might therefore be inferior in young patients.

Hence, little is known on the baseline characteristics, surgical characteristics (incl. implant type), complications and prosthesis survival in patients with THA under the age of 18 years. Therefore, the aim of our study is to assess demographics, indications, type of hospital / centralization, surgical approach, type of implant and bearing type, implant fixation, Patient Reported Outcomes (PROMs), and prosthesis survival in patients younger than 18 years with THA, using data from the Dutch Arthroplasty Registry.

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