

## Benefit of Total Hip Arthroplasty (THA)/Total Knee Arthroplasty (TKA) for the Patients of Kanton Zurich – Individual Treatment Effects Measured in the Swiss Implant Registry (SIRIS)

Huber J, Brand Chr, Beck M, Bolliger L, Zdravkovic V, Christen B

Huber Joerg, MD, Orthopaedics, Stadtspital Zurich, Zurich

2 Brand Christian, PhD, Institut für Sozial- und Präventivmedizin, University, Bern

3 Bolliger Lilianna, MSc ETH, Institut für Sozial- und Präventivmedizin, University, Bern

4 Beck Martin, Prof, Orthopaedic Clinic Lucerne (OKL), Lucerne

5 Zdravkovic Vilijam, MSc, Orthopaedic Clinic, Kantonsspital, St. Gallen

6 Christen Bernhard, MD, MHA, Articon, Bern

E-Mail first author: [joerg.huber@stadtspital.ch](mailto:joerg.huber@stadtspital.ch)

### Introduction:

The benefit of arthroplasty can be measured as individual treatment effect (TE). The TE corresponds to the amelioration:  $TE = \text{score reduction} / \text{baseline score}$  (JBJS am 2017). The best TE is 1 (patient with complete amelioration), a positive TE corresponds to a partial amelioration, 0 to no amelioration and a negative TE to a worsening. In this study, the treatment effects for THA and TKA were calculated in the Swiss Hip & Knee registry SIRIS.

### Materials and Methods:

All patients of Kanton Zurich in SIRIS with primary THA and TKA were included. Excluded were patients with fractures, tumor, bilateral arthroplasties, and incomplete 1-year follow up. The patients filled out the MDS-SO questionnaire (minimal data set swiss orthopedics PROM) before and 1-year after surgery. The MDS-SO score consisted of 50% symptoms and 50% daily impairments. The TEs were calculated for MDS-SO and pain and differentiated in five outcome categories (complete amelioration, amelioration >50%, amelioration <50%, no amelioration, worse).

## Results:

We could include 3,566 THAs from July 2019 to Dec 2021 and 2,809 TKAs. The mean age for THA was 68.8 years old, for TKA 70.0. The mean TEs for THA were 0.79 (pain 0.87), for TKA 0.63 (pain 0.74). The proportions of the five outcome categories were: complete amelioration THA 58% (pain 62%), TKA 38% (pain 37%), amelioration >50% THA 27% (pain 31%), TKA 35% (pain 47%), amelioration <50% THA 7% (pain 3%), TKA 9% (8% pain), no amelioration THA 6% (pain 2%), TKA 14% (pain 5%), and worse THA 2% (pain 1%), TKA 5% (pain 3%).

## Discussion:

Most of the patients (> 90%THA, >80%TKA) profit of the surgical treatment. The treatment effect is a simple method to measure the individual outcome also in a registry. The five outcome categories can demonstrate the variety of results in large registry data.