

## Summary of research proposal LROI



### **Title:**

The effect of patient specific instrumentation (PSI) and bearing type on survival after primary total ankle arthroplasty (TAA) in the Netherlands: register based evaluation of current practice

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### **Abstract:**

Total ankle arthroplasty (TAA) as it is currently performed, is the result of gradual developments in implant materials, biomechanical concepts and surgical techniques. Ankle prostheses are typically categorized within generations based on changes in implant design and operation techniques. TAAs are divided into mobile- and fixed-bearing prostheses. Further endeavors to improve longevity of TAA focuses on navigation and implants with patient-specific instrumentation (PSI) which provide reproducible and accurate component placement and potential advantages in restoring ankle kinematics during complex posttraumatic deformities. Optimal component placement and correct sizing are thought to enhance implant-survival. However, there are no large series investigating survivorship in TAA using technology assisted surgery (TAS) such as PSI, navigation and robot assisted surgery.

In 2 studies we aim to determine:

- (1) the effect of bearing type (fixed vs mobile) on risk of revision after primary TAA in the Netherlands. Secondly, to describe changes in the use (trend) of bearings over time and examine differences in reasons for revision for fixed and mobile bearings.
- (2) the use of navigation / PSI / robot-assisted surgery, describe the trend over time and determine the association between TAS and survival following primary TAA using data from the Dutch Arthroplasty Register (LROI).

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