



Reconstruction and evaluation of acetabular defects using statistical shape modeling

A. Meynen¹, M. Mulier^{1,2}, L. Scheys^{1,2}

¹ KU Leuven, Institute for Orthopaedic Research and Training, Leuven, Belgium

² Division of Orthopaedics, University Hospitals Leuven, Belgium

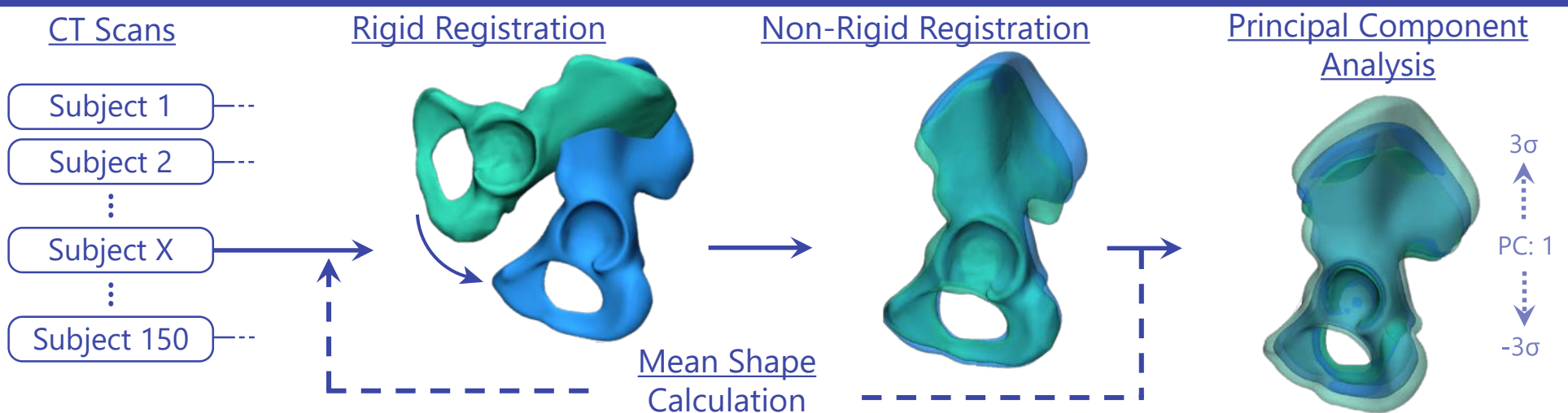
Research goal

Investigate the morphology and reconstruction of acetabular defects using statistical shape models

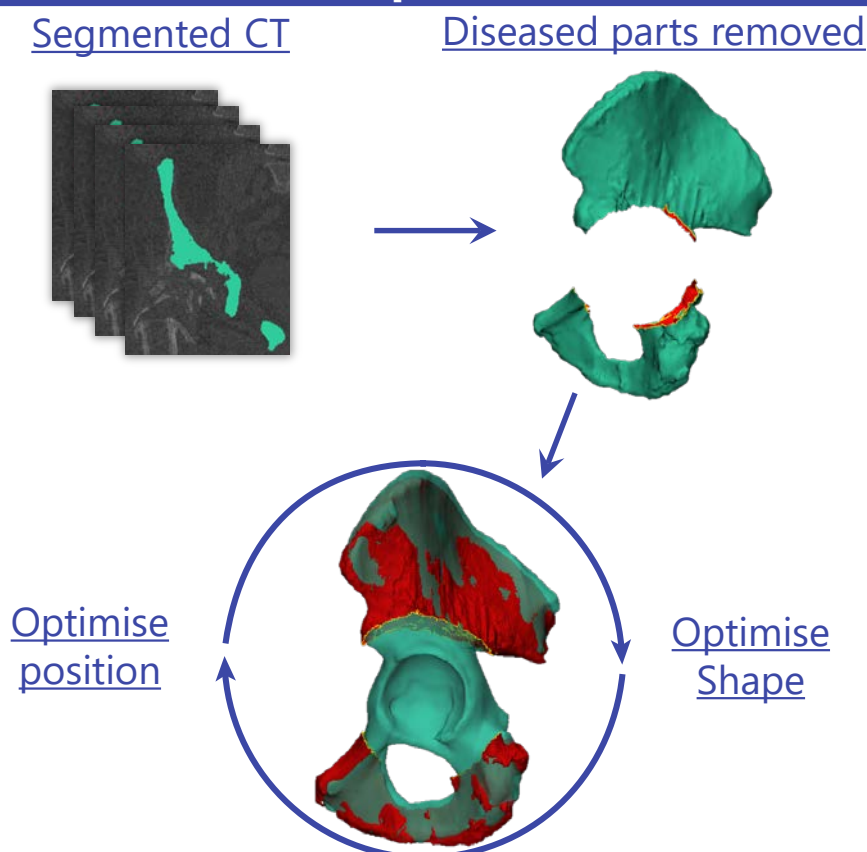
Clinical background

- The demand for hip revision surgery is predicted to increase as a consequence of longer life expectancy [1].
- Bone defects are present in 44% of patients where the acetabular component is removed [2].
- The surgeon aims to restore the pre-diseased anatomy and, more specifically the hip joint centre [3]. In patients with large bone defects this is challenging as they often present with a bilateral condition.

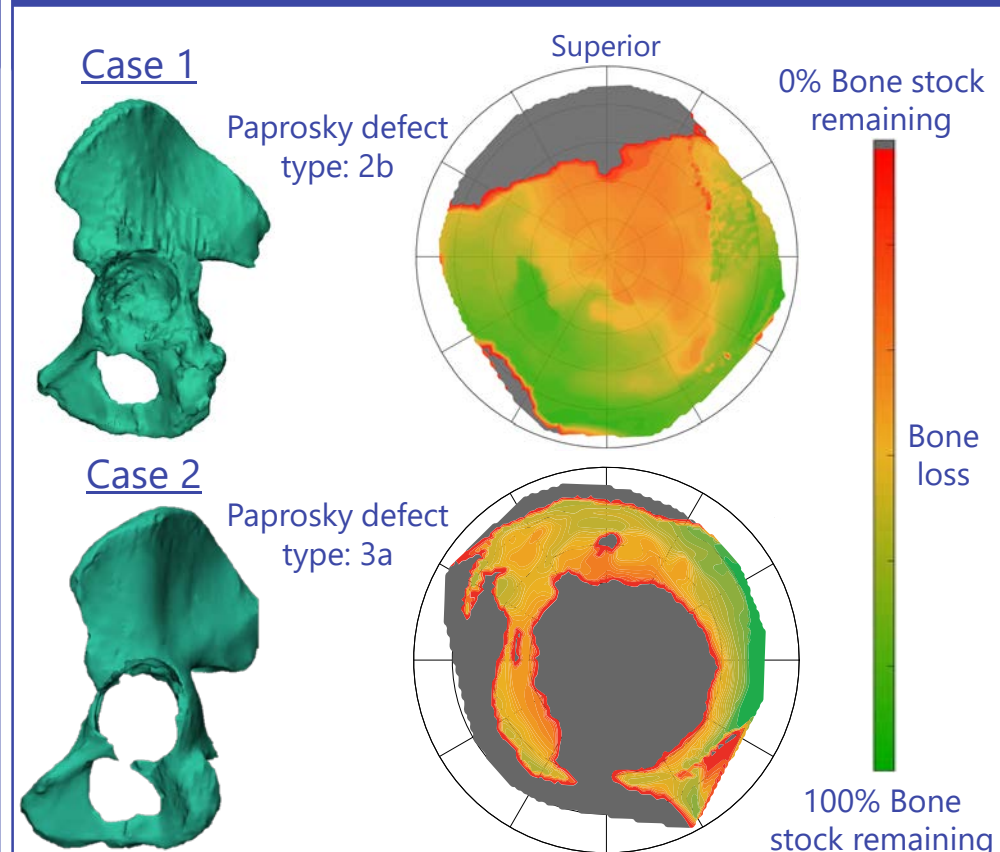
Shape model construction



Prediseased shape reconstruction



Defect evaluation



[1] Bayliss, L., et al., Lancet, 2017.
 [2] Yu R., et al., Clin Orthop Relat Res. 2013.
 [3] Delp, S. L., et al., J Orthop Res. 1994.