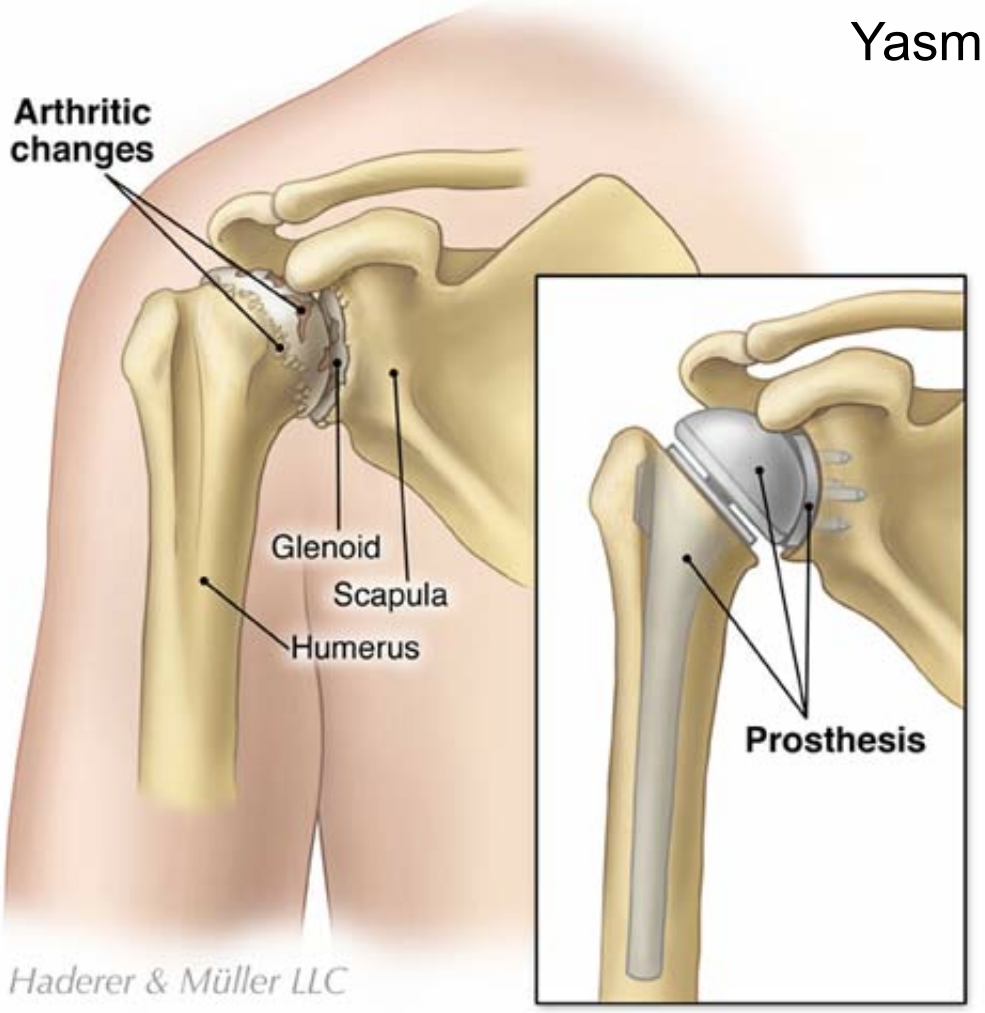
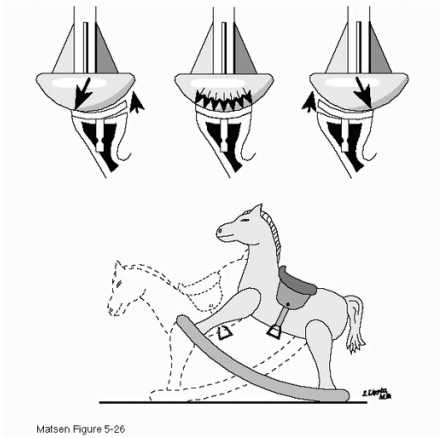
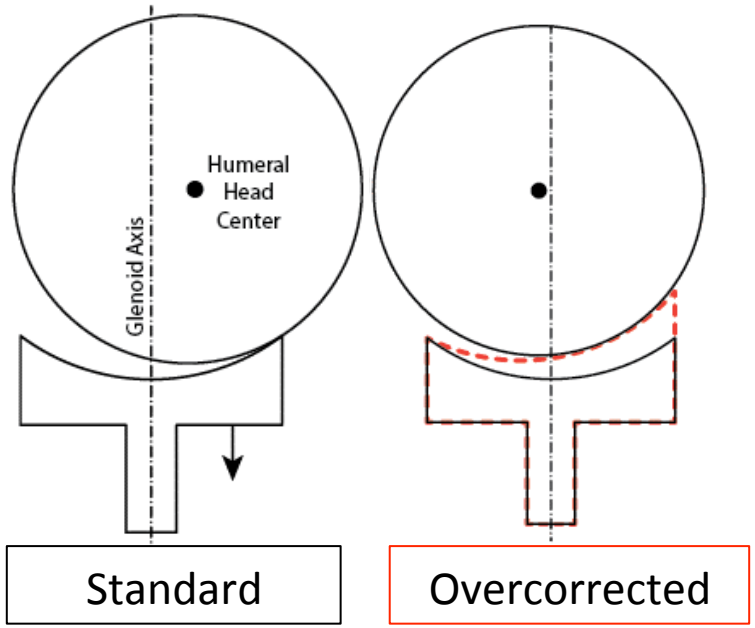
Overcorrected Prosthesis for Total Shoulder Arthroplasty

Yasmine Boulanaache, LBO





http://www.orthop.washington.edu/?q=patient-care/articles/shoulder/mechanics-of-glenohumeral-arthroplasty.html

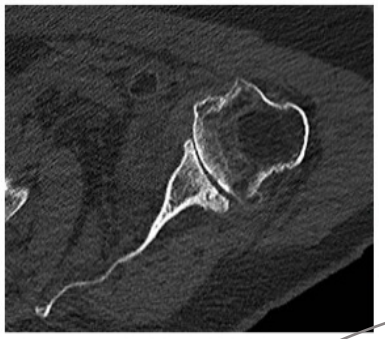


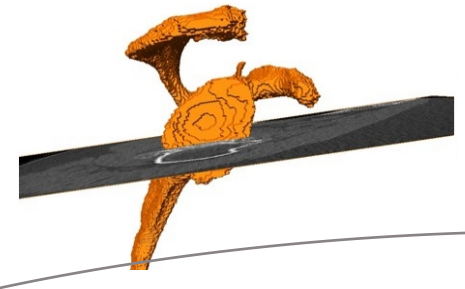
patients

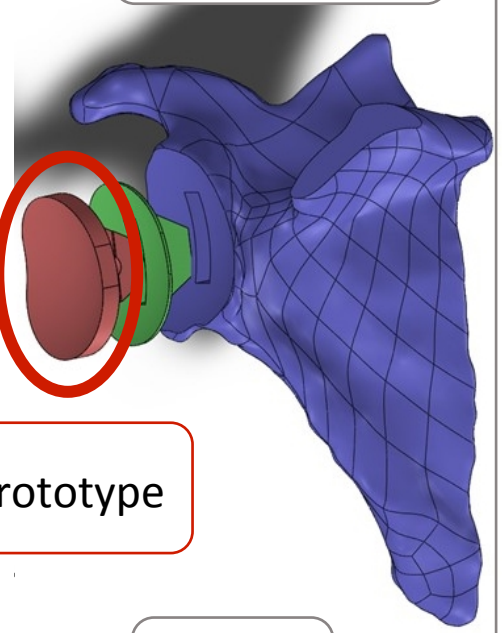
CT Data

Bone segmentation

Virtual Surgery

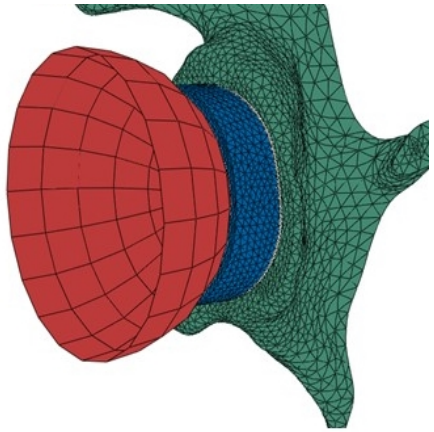




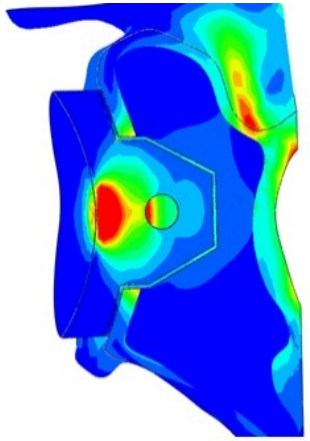


Prototype

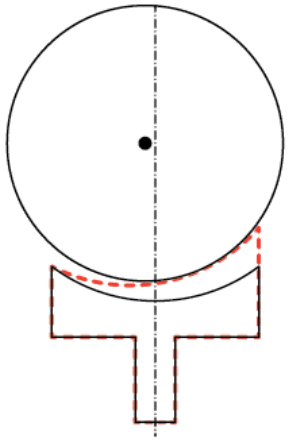
FE Model



Stress



Best prosthesis



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Objectives

- Design different overcorrection angles for overcorrected prostheses
- Create FE models for 5 patients using preoperative CT scans
- Perform virtual surgery
- Compare different designs
- Present the best overcorrected design for each patient

Tasks

- Understand problem
- Create 5 patient-specific FE models from CT data (Imaging)
- Design prototypes of overcorrected implants (CAD)
- Input the prototypes into the 5 FE Models
- Compare standard and overcorrected designs and identify limitations
- Discuss with surgeon
- Choose best overcorrected implants