5 Supplemental Zimmer Total Ankle Replacement (TAR) Cutting Guide

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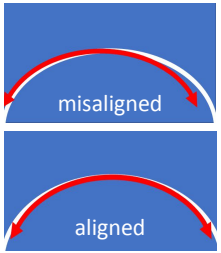
1. NEED

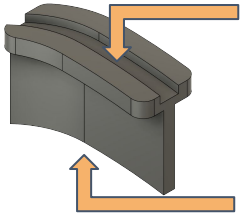
- Misalignment of TAR implants cause 44% of revisions within 10 yrs.
- Longer surgery increases infection risk

Objective: Help surgeons usher the Cutting Guide into the correct position in less time

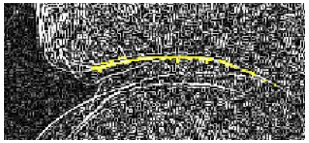


2. DESIGN INPUTS

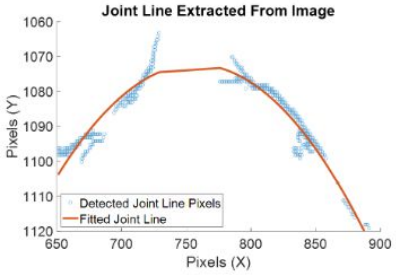
- Compatible with Zimmer System and ankle sizes
- Decrease procedure time
- Groove mimics patient joint line



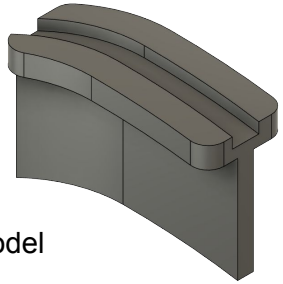
3. SOLUTION



Tibiotalar joint line data captured from pre-op imaging



Using joint line dimension data, model product in CAD

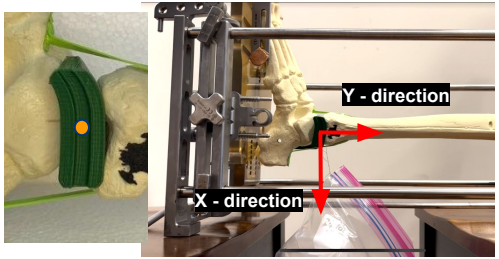


3D print guide for surgery

Insert product into joint line of ankle/sawbones model for testing

4. TESTING

Requirement	Status
Accomodate Sizes	Pass
Withstand Forces	Fail
Proper Alignment	Pass
Decrease Procedure Time	Pass



5. IMPACT

- Improve alignment, decrease need for revision surgeries
- Decrease surgery time, decrease risk of infection and cost

FUTURE

- Increase repeatability of current MATLAB code
- Incorporate new MATLAB code to improve patient specificity and stability