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Cunningham Clubfoot Brace

Noah Charleston, Micah Curtis,
Luke Redcay



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What is Clubfoot?

Our foot anatomy expert:
Noah Charleston





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Normal

Clubfoot



Before



After

Clinical Implications

- ◎ Mobility
- ◎ Calf strength and size
- ◎ Footwear
- ◎ Arthritis
- ◎ Self-image



Clubfoot treatment over 4 – 6 weeks



Stage 1



Stage 2



Stage 3



Stage 4



Stage 5



Boots and Bar

© Steenbeek



© Iowa Brace



© MiracleFeet Brace



© Dobbs



Advantages of Cunningham Brace

- ⦿ Reduced treatment period
- ⦿ Fewer sizes throughout treatment
- ⦿ Greater comfort increases compliance rate



Cunningham Brace

© Thigh Cuff



© Knee Hinge



© Descending Spiral



© Foot Shell



Manufacturing Methods

◎ Machining

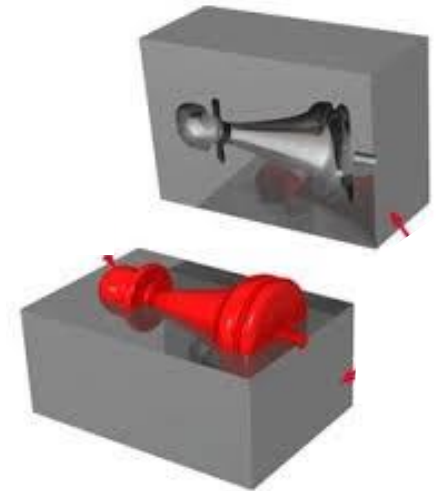
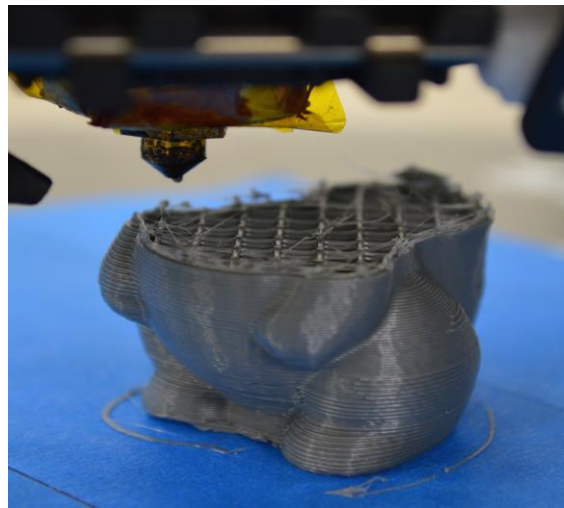
- Labor intensive

◎ Injection Molding

- Large investment
 - \$10,000 a mold

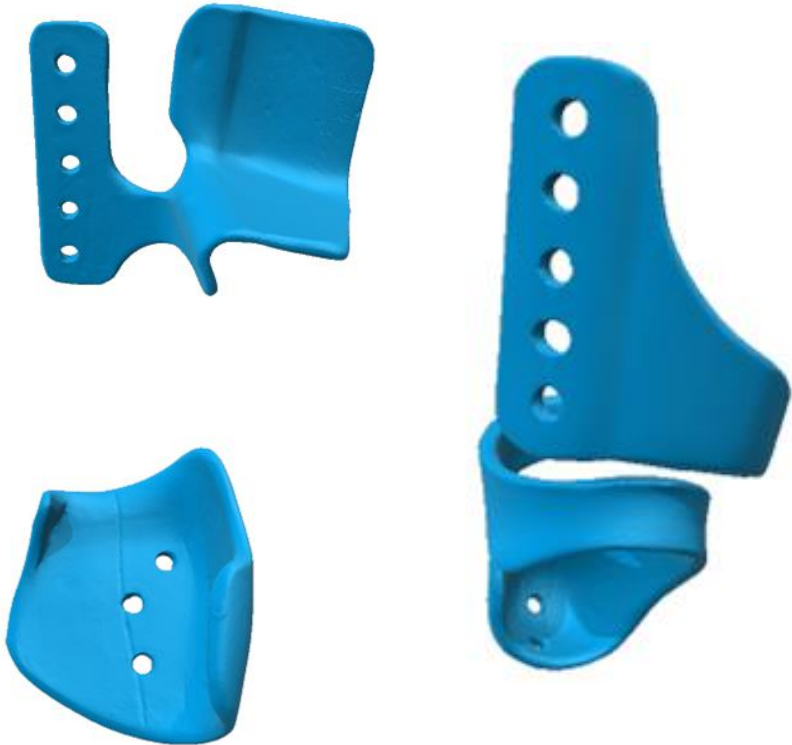
◎ 3D printing

- Adjustability
- Easily Accessible



3D Scan

CIMQUEST
MANUFACTURING SOLUTIONS



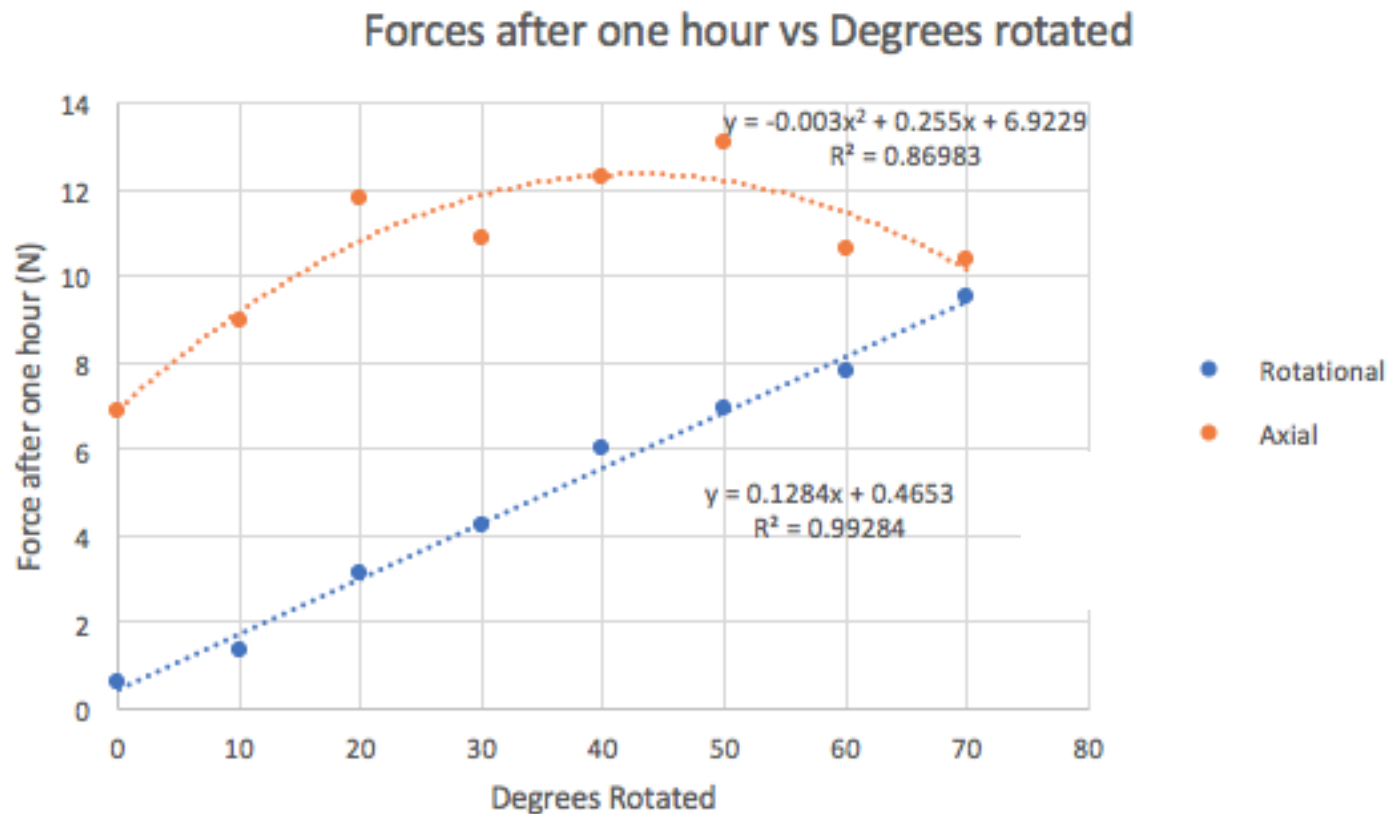
Outsourced 3D Printing

- ⦿ Ease of use
- ⦿ Cost to print: \$61.35

shapeways 

Characterizing for 3D Print

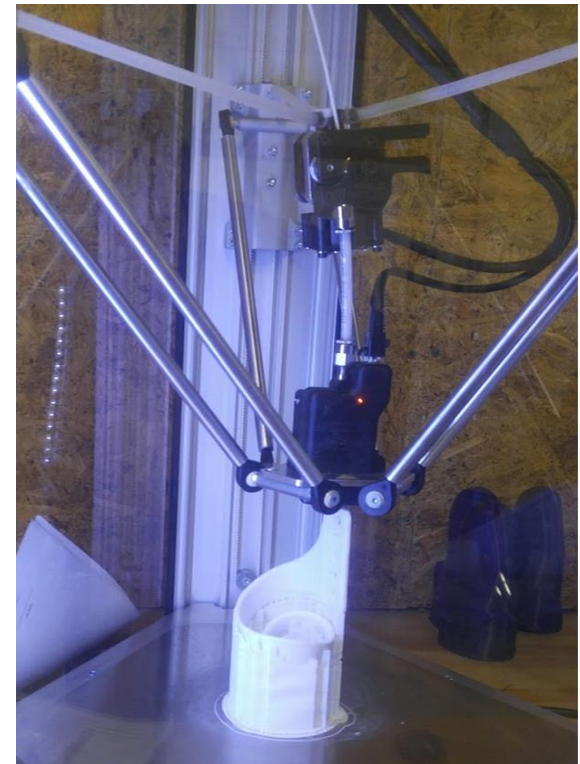
Goal: Reproduce Cunningham brace in Kenya



3D Printing Modifications

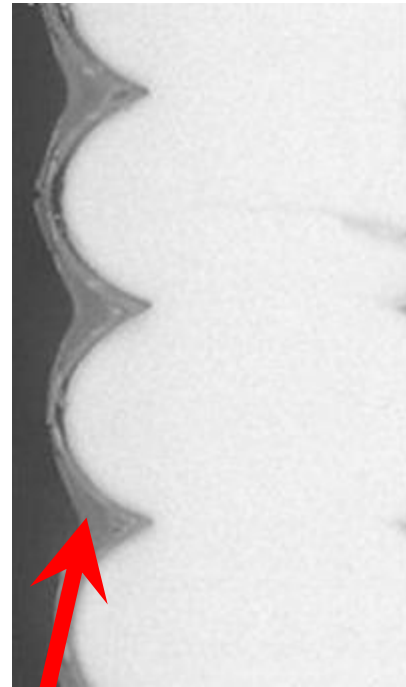
Modify

- ⦿ Material
- ⦿ Print settings
- ⦿ Design



Hygiene

- ◎ Bacteria Growth
- ◎ Protective Coatings



coating

Future

- ◎ Trip to Kenya
- ◎ Modify 3D printing
- ◎ Newborn brace



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Our Clients/Partners

Jerald Cunningham

-Brace Designer

Scott Reichenbach

-CURE Representative

Questions or Comments?



