

Team 5 - Palatal Obturator Fixation System for Pediatric Cleft Palate Patients

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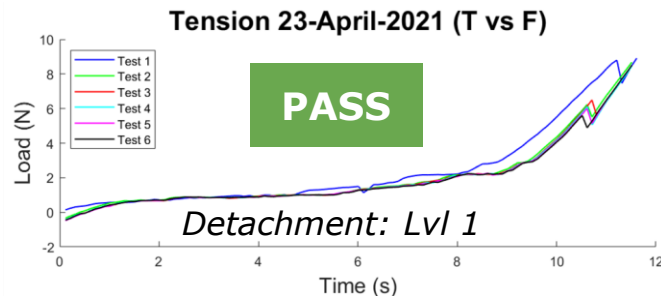
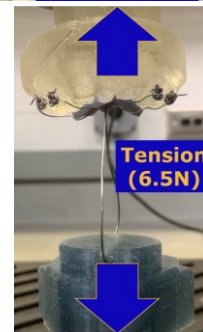
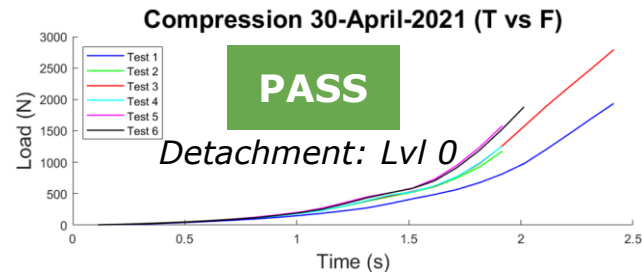
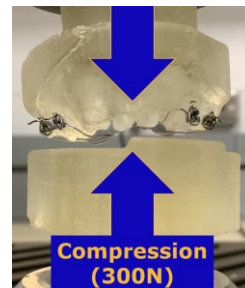


DePuy Synthes

NEED: 3D-printable obturator needs fixation system available for 3rd world country applications

DESIGN INPUTS:
Attachment maintained thru:
R1: Mastication ($F_{max}=300N$)
R2: Swallowing ($F_{max}=6.5N$)

TESTING RESULTS:



SOLUTION - DESIGN & BUILD

Design Components:

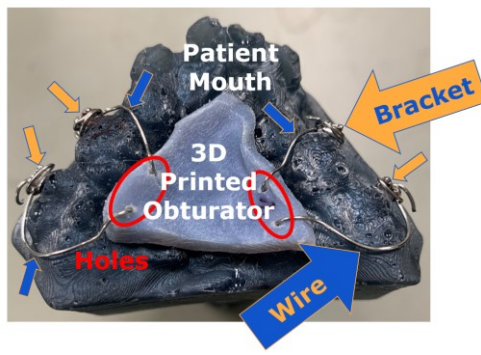
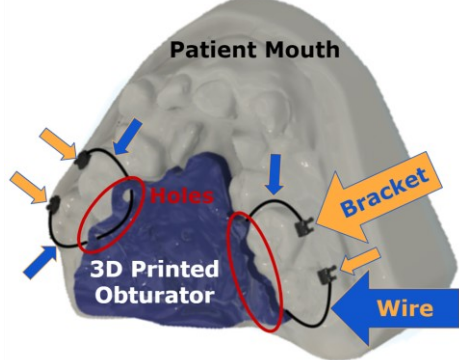
3D printed obturator: Custom Fit

Orthodontic wire: Stainless Steel Wire (24g)

Orthodontic brackets: Stainless Steel (24g Opening)

Design

Build



FUTURE:

Rev.: Long term use/wear needs experimentation

Impact: Operation Smile can provide more patients treatment & patients have improved quality of life