

## MSDII Testing – Strap Analysis Test

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*Team: P15001: Active Ankle Foot Orthotic*

*Engineer: Geni Giannotti – Biomedical Engineer*

*Engineer: Noah Schadt – Mechanical Engineer*

### Related Systems: AAA- Secure Foot, ABBBBB- Raise Foot

This proposed test is designed to test the new strap design in order to determine its functionality, additional strain, ease of application, and comfort.

### Engineering Requirements:

ER19: Added foot width (inches)

Ideal Value: 0.19685

Marginal Value: 0.295

### Testing Plan

The testing plan is similar to other Lower foot attachment tests performed in MSD I. In order for this test to begin, the new strap design must be sewn and applied to the AFO.

- 1.) Secure AFO to volunteer's foot and add a tape marker to the strap in a visible location.
- 2.) Have the volunteer sit on a table with their foot hanging freely and align ruler next to strap.
- 3.) Have another volunteer lift the foot vertically via the strap.
- 4.) Measure and record at least 10 lifts.
- 5.) Note ease of application/removal
- 6.) Have the volunteer fill out the comfort survey (G:\EDGE\web\public\Detailed Design Documents\Mechanical\Lower and Upper Attachment\P15001\_Lower\_Attachment\_Comfort\_Survey)
- 7.) Repeat this test using three volunteers.

*Start Date: February 2 2015*

*End Date: February 6 2015*

### Location

Engineering Applications Lab

### Budget

Equipment	Price	Quantity
AFO with new strap	-	1
Ruler		1
Tape		A/R
<b>Total:</b>	-	