Introduction

- Maximum Voluntary Isometric Contractions (MVICs) are an integral part to biomechanics research
- Muscles have activation dependent behavior that can cascade from muscle level to whole body biomechanics\(^1\)
- Many research questions depend on having reliable and repeatable MVIC measurements
- Previous studies have found that even at the same location, having multiple evaluators collect MVICs increased variability\(^2\)

Methods

In this preliminary study, we recruited one participant (N=1)

**Experiment:** Isometric contraction, 0° right ankle position plantarflexion and right knee fully extended

- One baseline condition was collected where subjects were instructed to maximally plantar flex.
- Then, three conditions with at least 3 trials per condition were randomized:
  1. No biofeedback (NBFB)
  2. Biofeedback ramp up (RU)
  3. High biofeedback (HBFB)

Results/Discussion

- Results suggest that the ramp up method elicited the highest torque and activation
- There was not a significant difference in the high biofeedback and no biofeedback methods
- We hypothesize that overtime ramping up will be the best method to produce the highest torques and activations
- We cannot draw conclusions until the study is complete, results suggest that different tactics yield different results

Table 2: LG EMG values normalized to highest condition (Ramp-Up)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Activation %</th>
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<tbody>
<tr>
<td>Baseline</td>
<td>0.899</td>
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<tr>
<td>NoBFB</td>
<td>0.909 +/- 0.035</td>
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<tr>
<td>HighBFB</td>
<td>0.835 +/- 0.035</td>
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References