Mobil-Aider™
Joint Mobility Measurement Device

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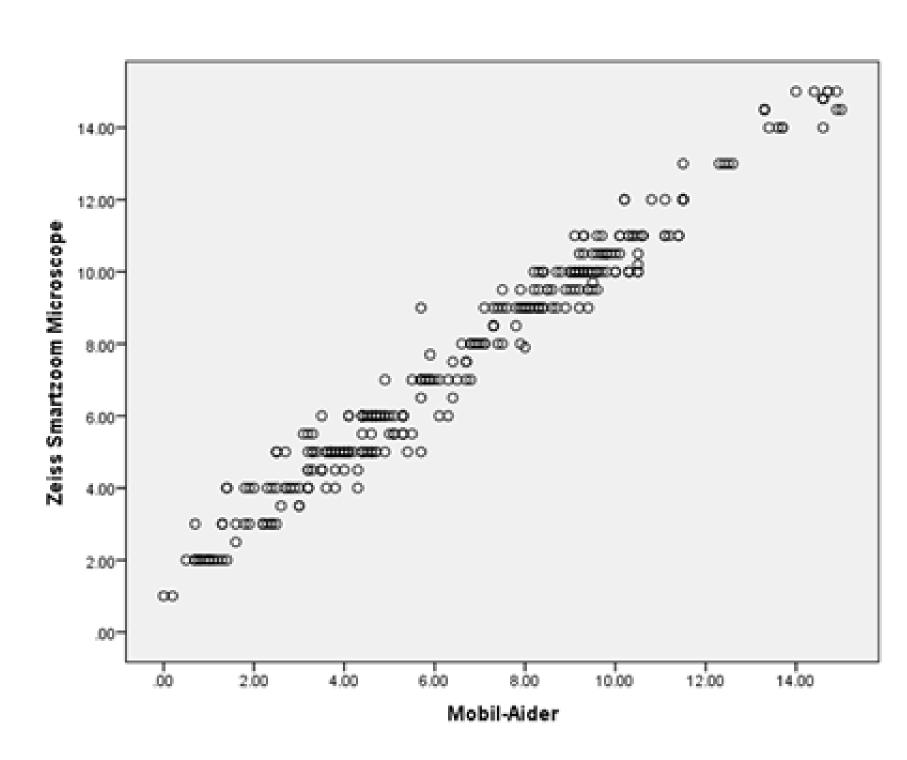**Founder & CEO**
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Quantifying Joint Mobilizations

Background: Millions of musculoskeletal injuries occur each year. Joint mobilization techniques aim to restore the accessory movements between joint surfaces. Studies have reported that skilled clinicians have good relative intra-clinician reliability, i.e. they could replicate their "force" application during joint mobilizations, but had poor to moderate reliability between clinicians. The Mobil-Aider™ is a new device designed to enhance the performance of joint mobilization techniques with objective, quantitative feedback.
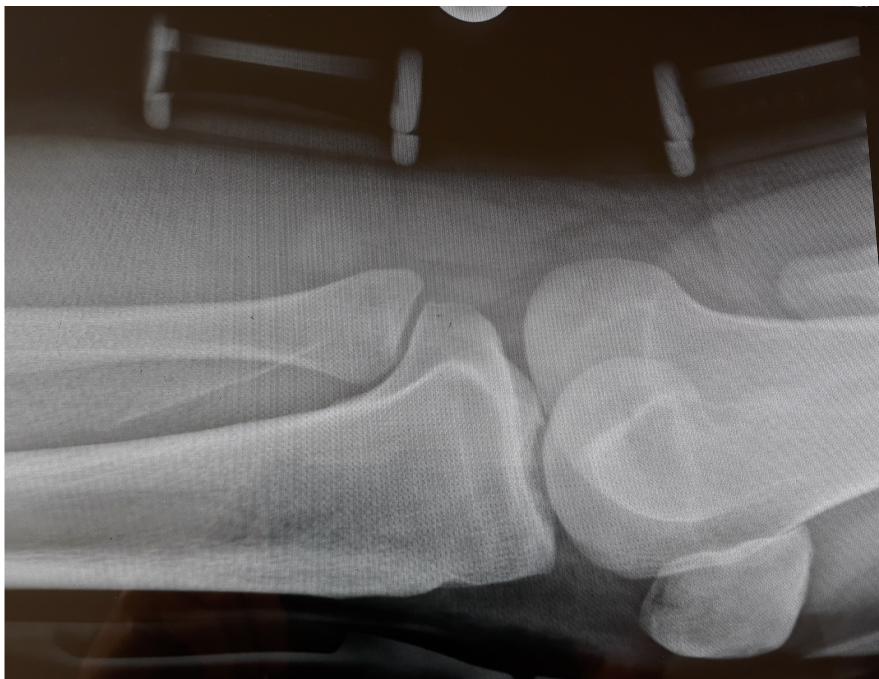
Purpose: To assess the reliability and validity of the Mobil-Aider™ device

Methods: A Zeiss Smartzoom microscope was used as the gold standard to assess the ability of the Mobil-Aider™ to measure linear translation. Sixty blinded measures were taken with each of six different devices. Radiographs were used to assess linear translation of the knee.

Results:

- ICC & Pearson correlation = 0.986, indicating a strong correlation between the measures.
- Cronbach alpha reliability analysis = 0.992
- Independent one-sample t-tests were performed on the differences between the Mobil-Aider™ and the Zeiss values (p = 0.42), indicating the measures were not statistically different
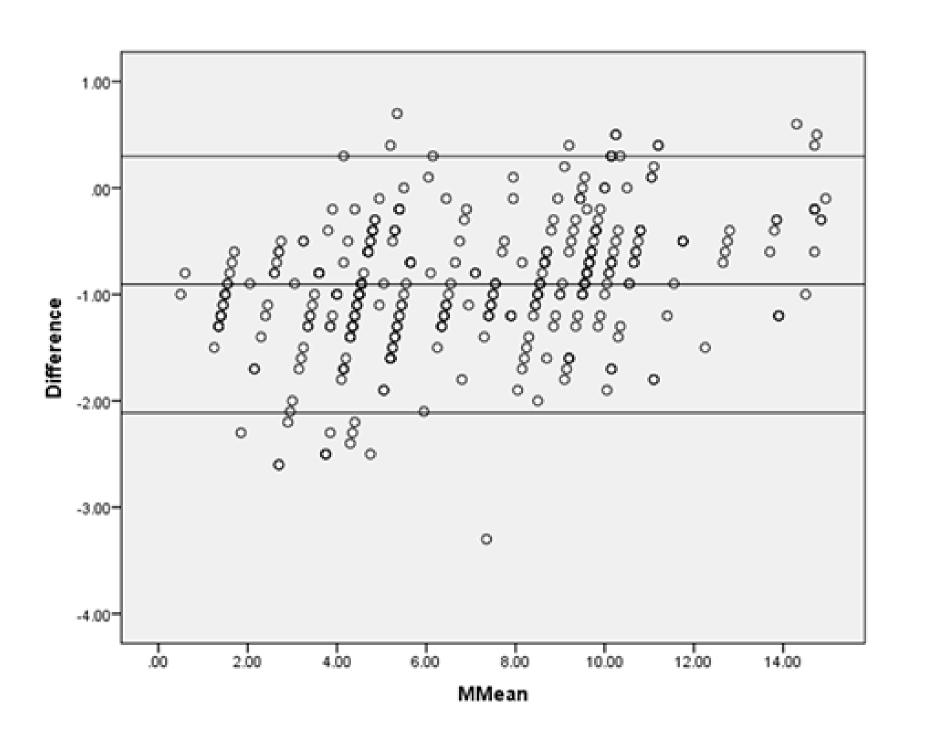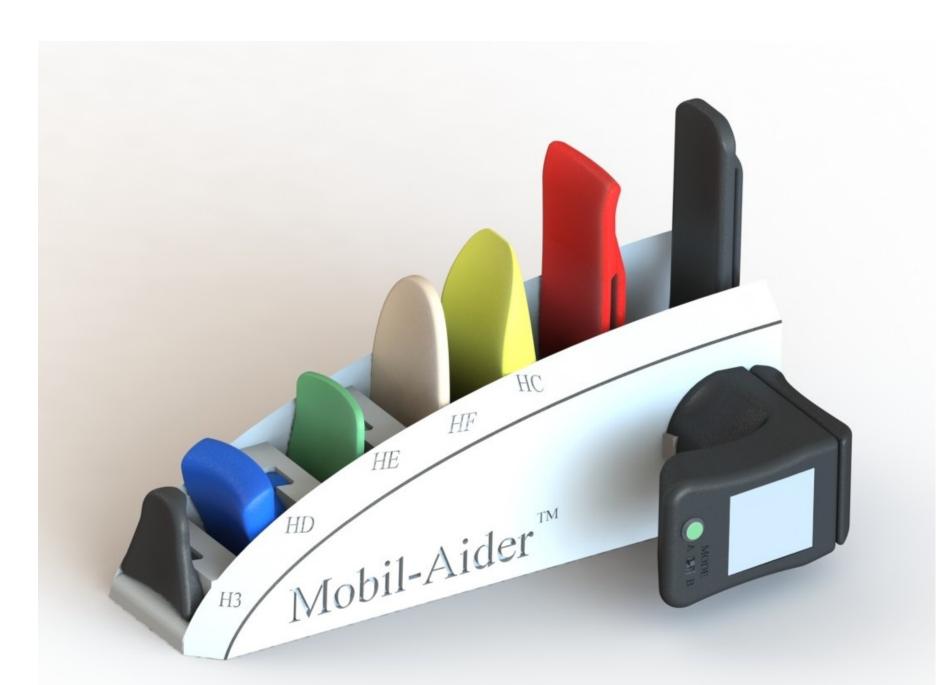- Bland Altman plot and a linear regression revealed no propositional bias.

- Radiographic image = 6.9 mm of anterior tibial translation and Mobil-Aider™ LED display = 7.1 mm

Conclusions: This data is the first step in establishing reliability and validity of a new device.
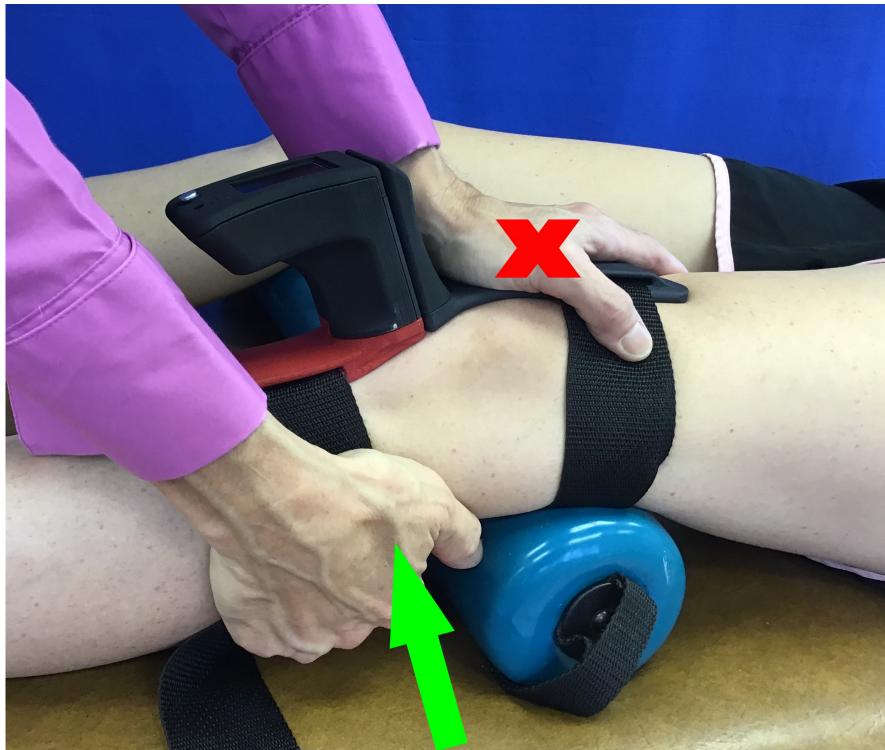
Clinical Relevance: The Mobil-Aider™ device is a promising orthopedic tool for quantifying the linear translation associated with joint mobilizations. It can provide feedback to overcome the current issue of lack of consistency.