

## Reliability and validity of a smartphone based inclinometer application measuring shoulder internal rotation

Taylor Lau, Sheng Lin, Tyler True, Wayne Wu and James M McKivigan\*

Touro University Nevada, USA



### Abstract

This study intended to evaluate the reliability and validity of a smartphone-based inclinometer application and compare these results to those of the standard clinical goniometer. The study measured the internal shoulder rotation of 19 men and 20 women. One third-year physical therapy student took all the smartphone-based inclinometer measurements, and another took all the clinical standard goniometer measurements. The subjects were randomly placed into set amounts of internal rotation, and then the two measurements were taken. The study found no significant difference between the smartphone-based inclinometer and the goniometer. The reliability between the app and the goniometers was good to excellent.

### Biography

James M McKivigan, is an associate professor in the School of Physical Therapy at Touro University Nevada. He began working at Touro in 2009. He received his PhD from North Central University in Arizona in 2018, Doctor of Physical Therapy at the University of Montana in 2013, and a Doctor of Chiropractic from Palmer College of Chiropractic in Davenport, Iowa in 2004. His initial Physical Therapy training was from the US Army-Baylor Program in Physical Therapy at Fort Sam Houston in San Antonio, TX in 1982; Master's in Public Administration from Golden Gate University in San Francisco, CA in 1988; Master's in Management from Webster University in St. Louis, MO in 1984; and Bachelors of Science in Physical Education from UC Berkeley in 1980.



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