Title: HOME VS CLINIC BIOIMPEDANCE MEASURES IN THOSE AT RISK FOR BREAST CANCER-RELATED LYMPHEDEMA (BCRL)

Author: Allison RL, Carpenter AE, Schoenbauer LD, Van Dusseldorp BA, Vargas PR

Abstract: Background and Purpose
Approximately 1 in 6 breast cancer survivors develop breast cancer related lymphedema (BCRL), a progressive condition that can lead to lifelong complications. Early detection and treatment are essential in preventing and minimizing lymphedema. Current clinical detection methods include girth measurements and clinical bioimpedance (BIS) devices, but there is no “gold standard” device available to patients for self-monitoring at home. The purpose of this study was to assess the reliability of an at-home BIS device when compared to a clinical BIS device in individuals at risk for BCRL.
Participants
52 participants (51F, 1M) who underwent unilateral breast cancer surgery with lymphadenectomy.
Methods and Materials
This cohort study recruited individuals through medical record messaging and a study website. BIS measurements were taken on the clinical device (InBody 770, InBody USA, Cerritos, CA 90703) and the at-home unit (InBody BWA ON, InBody USA, Cerritos, CA 90703) within 5 minutes of each other.
Analyses
Intraclass correlation coefficient (ICC 3,1) and limits of agreement were used to compare outcomes in the two devices.
Results
There is good and excellent inter-rater reliability for all the outcomes. The ECW/TBW of the right and left arms are the outcomes relevant to the development of BCRL with reliability of 0.835 and 0.853, respectively.
Conclusions
We can conclude that the home device has good to excellent reliability compared to the clinical device. Further research is needed to confirm reliability and validity of the home BIS device.