

# **Reproducibility of the BT12 Venue 40 MSK ultrasound (GE Healthcare) using scar and normal skin sites in children and adolescents with burn scars.**

**Dr Megan Simons<sup>1,2</sup>, Miss Emma Gee Kee<sup>2</sup>, Dr Zephanie Tyack<sup>2</sup>**

1 Occupational Therapy Department, Lady Cilento Children's Hospital, South Brisbane, QLD, 4101,  
megan.simons@health.qld.gov.au

2 Child Health Research Centre, Level 4, Foundation Building, Royal Children's Hospital, Herston Rd, Herston, QLD 4066,  
e.geekee@uq.edu.au; z.tyack@uq.edu.au.

## **Introduction**

Determining the test-reliability is important to establish the ability of objective measures to pick up changes in scarring over time. This study sought to investigate clinical utility and reliability of an objective measure not yet established as suitable for measuring scar height, the BT12 Venue 40 MSK ultrasound (GE Healthcare).

## **Method**

Children with burn scars were recruited from the Royal Children's Hospital (now relocated) and the Lady Cilento Children's Hospital, Brisbane. Reliability was tested using Intraclass Correlation Coefficients (ICCs), standard errors of the mean, and smallest detectable changes.

## **Results**

There were 47 participants (49% male) with 53 scars in total. The mean age was 8 years, 5 months (range 1yr, 6 mth – 17, 5 mth). The majority (87%) had been grafted. Test-retest reliability was acceptable for scars (ICC = 0.84) but not for normal skin (ICC = 0.59). Inter-rater reliability was not acceptable for scars or normal skin (ICC's = 0.65 and 0.34 respectively). The smallest detectable changes in height for scarred skin based on test-test reliability indicated the ultrasound can detect changes as small as 1/5 of a millimetre.

## **Conclusion**

The higher test-retest reliability of scarred sites compared to normal skin is explained by the smaller variance in normal skin scores (i.e., scores of the scarred skin are more easily distinguished from each other than scores in normal skin). Results support the use of the ultrasound to assess changes in scars over time. The clinical utility of this ultrasound will be described and suggestions for use in clinical settings will be presented.

## **Key Words**

Outcome measure, burn scar, allied health

## **Nominated Stream for Oral Presentations**

- Medical
- Nursing
- Allied Health
- Scientific

## **Nominated Stream for Poster Presentations**

- Care
- Prevention
- Research