Making Assistive Technology and Rehabilitation Engineering a Sure Bet

SOFT TISSUE THICKNESSES OVERLYING ISCHIAL TUBEROSITY IN SITTING POSTURE IN INDIVIDUALS WITH SCI

Mohsen Makhsous, PhD[1-4], Dongkeun Lee, BS[2], Mauli Modi, MS[1-2], Charles Fasanati, RT[5], Ronald W. Hendrix, MD[5], Fang Lin, DSc[1-3]
Departments of [1]SMPP, Rehabilitation Institute of Chicago, [2]PTHMS, [3]PM&R, [4]Orthopaedic Surgery, 5Radiology, Northwestern University, Chicago, Illinois, USA 60611

ABSTRACT:

Tissue thickness of muscle and fat-skin overlying the ischial tuberosity (IT), was measured from a *Non-Weight-Bearing to a Weight-Bearing* sitting posture on 16 SCI individuals. MRI images of the buttock-thigh were obtained in each condition. The thickness of the tissue layers was measured between the tip of IT and skin. The obtained data was compared to that from controls that reported previously. The muscle was found to be significantly thinner in SCI than that in controls (14.2±8.6mm vs. 29.3±4.2mm, P<0.001) in a *Non-Weight-Bearing* posture. For the same posture, the fat-skin layer was found to be thicker in SCI than that in controls (62.4±11.3mm vs. 44.5±6.9mm, P<0.001). Muscle and fat- skin thicknesses significantly (P<0.006) decreased from *Non-Weight-Bearing* to *Weight-Bearing Sitting* for both groups. Findings of this study confirmed that there are significantly less muscle padding tissues around IT in individuals with SCI in a seated posture and compressive load exerted during sitting.

Key words:

spinal cord injury; pressure ulcer risk; sitting; buttock; gluteus maximus; magnetic resonance imaging; ischial tuberosity; *in vivo*.

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Correspondence Author:

Mohsen Makhsous, Dept of Physical Therapy & Human Movement Sciences, Northwestern Univ., 645 N. Michigan Ave., Suite 1100, Chicago, IL 60611. Phone 312-503-0073. Email: m-makhsous2@northwestern.edu