

# Energy needs in people with spinal cord injury undergoing surgical repair of chronic pressure injuries

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## Introduction

Consensus Dietetic guidelines for people with spinal cord injury (SCI) who have pressure injuries (PIs) recommend an increased energy intake to meet demands of wound healing, but evidence to support this is limited. The impact of PI surgical repair on energy needs is also unknown.

## Purpose

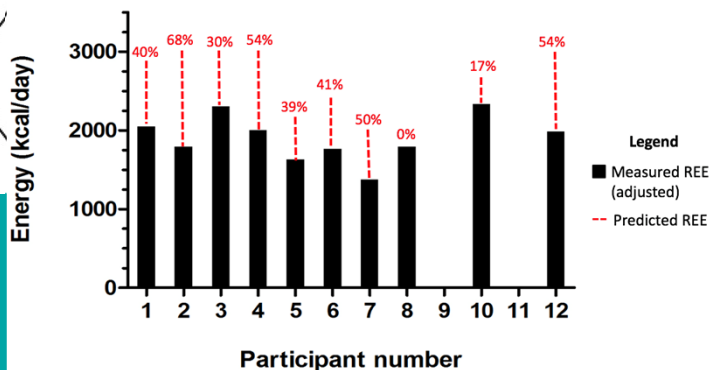
The aims of this study were to:

1. Determine the resting energy needs of people with SCI admitted to hospital with established chronic PIs
2. Investigate the energy burden of PI surgical repair and healing.
3. Observe weight change from pre-surgery until discharge from hospital.

## Methods

Data was collected at the bedside following an overnight fast of  $\geq 8$  hours. Resting energy expenditure (REE) was measured using indirect calorimetry (canopy hood) for  $\geq 20$  minutes one week pre-surgery, one week post-surgery, on removal of stitches and on return to unrestricted wheelchair sitting with complete wound healing (at discharge). Weight was measured one week pre-surgery and at discharge. Clinical energy prescription during admission was based on measured REE.

Figure 1: Measured versus predicted energy requirements pre-surgery



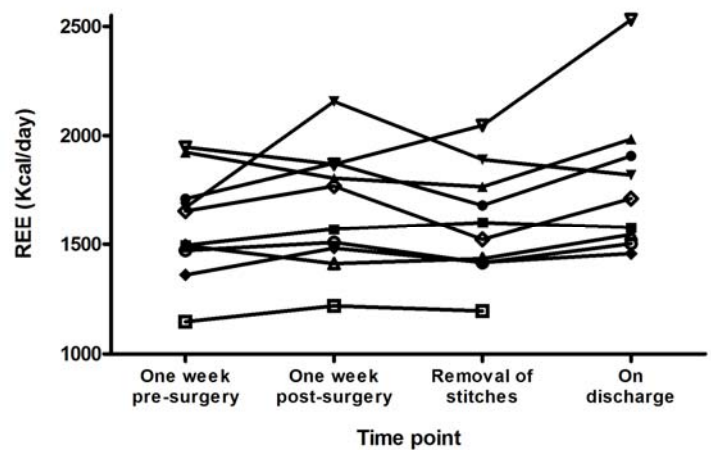
## Preliminary findings

To date, 12 individuals have undergone surgery to repair stage four PIs (100% male, median age 52 years [range 27-72 years]; C4-T10 AIS A-B, n=1 spina bifida).

Pre-surgery, dietetic guidelines for energy prescription overestimated energy requirements by 30-70% in nine out of ten individuals (Figure 1).

There was no change to REE across time points ( $< 10\%$  variation), with the exception of two individuals who experienced a clinically significant ( $> 10\%$ ) increase in REE at different time points post-surgery (Figure 2). This may be due to an infection for one individual, and a combination of autonomic dysreflexia and spasticity for the other. Despite energy prescription individualised to REE, weight gain between 2-17kg was observed in three quarters of individuals.

Figure 2: Resting energy expenditure over the course of admission



## Conclusions

The presence of chronic PIs, surgical repair or subsequent healing do not appear to impact the energy needs of people with SCI and weight gain is common. Current guidelines recommending increased energy prescription conflict with these findings and may increase risk of unintentional weight gain over the course of healing.