

Tackling obesity in people with spinal cord injury

Developing prediction equations to validly estimate body composition and resting energy expenditure

Sonja de Groot, Hinke Kruizenga, Peter Weijs, Christof Smit, Thomas Janssen, Dutch Spinal Cord Injury Patient Organization

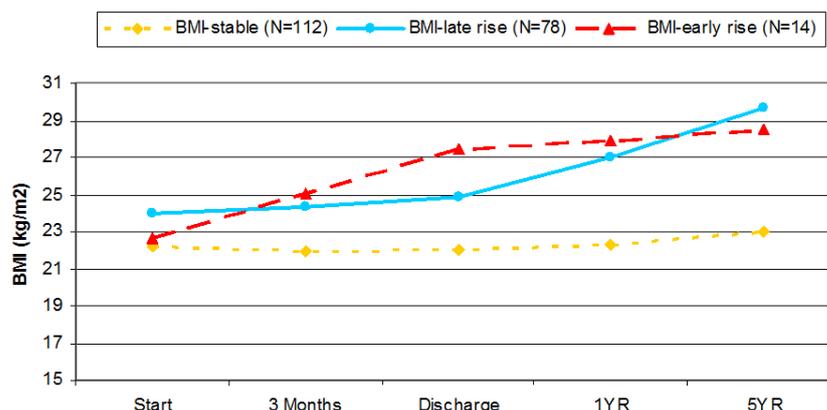
Contact person: Dr. Sonja de Groot, ☎+31-20-6071 699, ✉ s.d.groot@reade.nl



Description of the initiative

Obesity is one of the most frustrating and difficult medical conditions to treat, especially in a disabled population like those with spinal cord injury (SCI) who are confined to a wheelchair and occupy the lowest end of the activity spectrum. 45% percent of the patients with a recent SCI

show a steep increase in body mass index during or after rehabilitation (De Groot et al., JRM 2015). Therefore, for this population, monitoring the energy intake and expenditure is of substantial importance for weight regulation and subsequent long-term health status. However, from our pilot studies we concluded that a clinical feasible and valid method to assess body composition and energy expenditure in persons with SCI is currently not available.



Objective

The main objectives of this project are 1) to develop a prediction equation to validly calculate the body composition of people with an SCI using bio-impedance analysis; and 2) to develop a prediction equation to validly estimate the resting energy expenditure (REE) in people with SCI from personal and lesion characteristics and body composition.

Scope of project and activities

A group of people with an SCI (N=100), who are living in the community, will be included in this project. REE will be measured with indirect calorimetry and body composition will be determined with bio-impedance analysis (BIA) and Dual-Energy X-ray Absorptiometry (DEXA) as golden standard. This design was successful in a previous study on prediction of REE in obese adolescents and adults (Weijs et al., AJCN 2008).

Results

Statistical analyses will be performed to find the best prediction equation for the relationship between the resistance measured by the BIA and personal and lesion characteristics and the lean body mass measured by the DEXA (golden standard). Similar analyses will be performed to find the best prediction equation for the relationship between body composition (BIA) and REE. Thereafter, we will share this information in publications and presentations both nationally and internationally so obesity in SCI can be tackled worldwide.