

# **Self-reported physical activity and arm accelerometry: Measuring physical activity in individuals with spinal cord injury during inpatient rehabilitation**

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**Objectives:** Understanding differences between objective and subjective activity measurement tools is important for accurate portrayal of activity during spinal cord injury (SCI) rehabilitation as they may reflect different facets of physical activity.

**Design:** Longitudinal observational study.

**Setting:** Canadian inpatient SCI rehabilitation centre.

**Participants:** The 78 participants in this investigation were 49±17 years old. Average time in rehabilitation was 99±49 days. Fifty six percent have paraplegia.

**Interventions:** We investigated the relationship between the Physical Activity Recall Assessment for People with SCI (PARA-SCI) and wrist accelerometry. The PARA-SCI categorizes intensity and time spent on activities. Patients wore wrist accelerometers on the same days the PARA-SCI was administered. Data from two weekdays near admission was averaged to obtain activity for a typical weekday. The same was done for discharge.

2x2 repeated measures ANOVAs were conducted, exploring interactions between the PARA-SCI and accelerometry at admission and discharge.

**Main Outcome Measure:** minutes of activity (PARA-SCI), and activity counts (wrist accelerometry).

**Results:** There was significant interaction between measurement modality and time. Accelerometry counts increased from admission (158240±13939) to discharge (190261±13885) while PARA-SCI minutes stayed constant (119±7 to 106±9 for admission to discharge, respectively) (values=means±SE). This interaction was present in both individuals with tetraplegia and paraplegia and when therapy sessions were excluded from analysis.

**Conclusion:** Over time, patients may be doing more but feel they are working at the same intensity as recovery occurs commensurate with increasing activity. This highlights that objective and subjective measurement tools reveal different aspects of physical activity.