Food consumption and nutrient intake among individuals with long-standing spinal cord injury in Norway

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CONCLUSIONS
The SCI study population seems more compliant with dietary guidelines than the general Norwegian population; however, insufficient intakes of several micronutrients were identified.

INTRODUCTION

Previous studies suggest suboptimal nutritional intake in spinal cord injury (SCI) populations (1). Consequences of SCI includes loss of muscle mass, reduced basal metabolic rate and physical inactivity which has implications for nutritional needs (Fig. 1).

Objectives

Characterize the diet of the SCI population in Norway, with regards to foods and beverage intake, energy, macro- and micronutrients and antioxidant intake. Compare intakes with reference populations, and proportion of the SCI population complying with the quantitative dietary guidelines.

Study design

A cross-sectional survey in a random sample of 400 persons with SCI (Fig. 2).

METHODS

Assessment

Semi-quantitative food frequency questionnaire (FFQ)

Study population

Inclusion criteria: ≥ 2 years post injury, all cause, ASIA A-D

Reference data

Data from a nationwide survey Norkost 3 (N3) (2), dietary guidelines and a Norwegian Antioxidant Study (3)

Characteristics

Table 1: Study population characteristics

RESULTS

A total of 64 men and 32 women responded (response rate 26.5 %). The study population had similar energy intake (E) as the N3 population, however, men with SCI had 15% less E compared to N3 men (p<0.002) (Table 2). Consumption of plant foods were higher in the SCI group than N3 SCI (p<0.001) and coffee contributed 54% of total antioxidant intake in the SCI population (Table 2). Low intakes of vitamin A, calcium, zinc and selenium were identified in parts of the SCI population (Table 4). Total antioxidant intake was significantly lower compared to N3 (410 g E vs. 925 g E (p<0.001) and B1.supplements used.

Table 2: Energy intake and share of men and women in the SCI and Norkost 3 populations complying with the quantitative Norwegian dietary guidelines.

Table 2: Comparative antioxidant intakes of SCI and Norkost 3 SCI participants.

DISCUSSION

Results may be influenced by different assessment methods in the SCI and reference studies. Known challenges of FFQ’s are overestimation of fruit and vegetable consumption, and understimation of vegetables and underestimation of snacks. Generally a challenge of dietary assessment methods include motivated responders. In the future, other dietary assessment tools may shed light on the representativeness of these dietary findings for the SCI population.

REFERENCES


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Table 2: Energy intake and share of men and women in the SCI and Norkost 3 populations complying with the quantitative Norwegian dietary guidelines.

Table 2: Comparative antioxidant intakes of SCI and Norkost 3 SCI participants.

Table 3: Food consumption and antioxidant intake among SCI participants and in the general Norwegian population.

Table 4: Median and 25th and 75th percentile of daily energy intake and nutrient intake among SCI population.

Table 5: Median and range of antioxidant intake (mg/day) among SCI population.

Table 6: Percentage of individuals with antioxidant intake meeting Norwegian dietary guidelines in SCI and Norkost 3 SCI with international recommended levels of antioxidant intake. 

Figure 1: Reduced energy needs but same or increased needs of nutrients after SCI.