

# Optimizing nutritional counseling for the disabled athlete

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<b>Ethical review</b>	Approved WMO
<b>Status</b>	Recruitment stopped
<b>Health condition type</b>	Other condition
<b>Study type</b>	Observational invasive

## Summary

### ID

NL-OMON49440

### Source

ToetsingOnline

### Brief title

ParaNut

### Condition

- Other condition

### Synonym

dietary requirements, nutritional requirements

### Health condition

energie- en voedingsbehoeften van atleten met een beperking

### Research involving

Human

## Sponsors and support

**Primary sponsor:** HAN university of applied sciences

**Source(s) of monetary or material Support:** SIA;RAAK-PRO

## Intervention

**Keyword:** body composition, diet, disabled athletes, energy availability

## Outcome measures

### Primary outcome

Energy expenditure will be assessed by doubly labelled water. Basal metabolic rate will be assessed by a ventilated hood (indirect calorimetry). Volume, duration, frequency, intensity and energy expenditure during physical activity will be assessed by accelerometry and indirect calorimetry. Energy intake, macronutrient and micronutrient intake will be assessed by repeated 24-h recalls.

### Secondary outcome

Body composition will be assessed by dual X-ray absorptiometry (DXA) and anthropometry (skin fold measurements). One venous blood sample (5 mL) will be taken to assess plasma micronutrient status. Furthermore, there will be multiple questionnaires about the general health of the athletes, their risk for relative energy deficiency in sports (RED-S) and their knowledge of sports nutrition.

## Study description

### Background summary

Along with the rapidly growing number of disabled people participating in

competitive sports, there is an increased need for (para)medical support in disability sports. Disabled athletes experience differences in body composition, metabolism, training load and habitual activity patterns compared with non-disabled athletes. Moreover, it has been suggested that the well-recognized athlete triad, and low energy availability and low bone mineral density in particular, is even a greater challenge in disabled athletes. Therefore, it is not surprising that sport nutritionists of disabled athletes have expressed an urgency for increased knowledge and insights on the nutritional demands of this group.

## **Study objective**

This project aims to assess whether the nutritional intake of Paralympic athletes meets their physiological demands. Therefore, we will investigate energy expenditure, dietary intake, body composition and bone health of disabled athletes, ultimately leading to nutritional guidelines that promote health and optimal sports performance for this unique population.

## **Study design**

This is a cross-sectional study design with parallel measurements of energy expenditure (doubly labelled water and indirect calorimetry), physical activity patterns (accelerometry), dietary intake (24h recall), body composition (DXA and anthropometry), blood analysis (5ml) and questionnaires (general health, sports nutrition knowledge and risk on relative energy deficiency).

## **Study burden and risks**

- During the baseline measurements, body composition will be assessed by DXA. The measurement is painless, non-invasive and involves low radiation exposure (<10 µSv).
- For venous blood collection, a small needle will be inserted into the antecubital vein and blood is collected through a closed system attached to the needle. The discomfort of this procedure is transient and is comparable to having an injection by a needle, or donating blood.
- A wrist and hip-worn accelerometer will be worn during a 2-week period for 24h/day. This measurement is comparable with wearing a watch and a small belt.
- The 24-hour dietary recalls are aimed to be collected in person, if not possible they will be collected via a phone call. A single 24-h recall takes approximately 30 to 45 minutes to complete. The 24-h recall will be conducted thrice over a 2-week period.
- Energy expenditure will be assessed by the doubly labelled water method. The stable isotopes used in the doubly labelled water are non-radioactive, and also non-toxic in the doses used. Therefore, the doubly labelled water method has been used extensively in human volunteers, and even in infants and pregnant

women. The doubly labelled water requires the collection of 7 urine samples over a period of 14 days.

Altogether, it can be concluded that the burden and risks associated with this study are low. The study provides novel insight into the energy expenditure, physical activity patterns, and dietary intake in disabled athletes. As such, this study provides an important framework for dietary counselling in disabled athletes.

## Contacts

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## Trial sites

### Listed location countries

Netherlands

## Eligibility criteria

### **Age**

Adolescents (12-15 years)

Adolescents (16-17 years)

Adults (18-64 years)

Elderly (65 years and older)

### Inclusion criteria

disabled elite athlete

## Exclusion criteria

Current injury or illness that prevents participation in regular training regimen

## Study design

### Design

**Study type:** Observational invasive

Masking: Open (masking not used)

Control: Uncontrolled

Primary purpose: Diagnostic

### Recruitment

NL

Recruitment status: Recruitment stopped

Start date (anticipated): 04-09-2020

Enrollment: 80

Type: Actual

## Ethics review

Approved WMO

Date: 22-06-2020

Application type: First submission

Review commission: METC Z: Zuyderland-Zuyd (Heerlen)

## Study registrations

### Followed up by the following (possibly more current) registration

No registrations found.

## Other (possibly less up-to-date) registrations in this register

No registrations found.

## In other registers

Register	ID
CCMO	NL72682.096.20