# Evaluation of different methods to measure muscle mass and strength in a population with class II/III obesity: A Cross-Sectional Study

No registrations found.

Ethical review	Positive opinion
Status	Recruiting
Health condition type	-
Study type	Observational non invasive

## Summary

#### ID

NL-OMON28423

Source NTR

Brief title MUSCLE-study

#### **Health condition**

Obesity

### **Sponsors and support**

Primary sponsor: 1. University of Groningen/Campus Fryslân 2. Medical Center Leeuwarden
3. Center Obesity Northern Netherlands
Source(s) of monetary or material Support: 1. University of Groningen/Campus Fryslân
2. Medical Center Leeuwarden 3. Center Obesity Northern Netherlands

### Intervention

#### **Outcome measures**

#### **Primary outcome**

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correlation between muscle mass measured by DEXA and one of the parameters.

#### Secondary outcome

the correlation between multiple parameters for muscle mass and muscle strength and the muscle mass measured by DEXA.

# **Study description**

#### **Background summary**

Background: Weight loss therapies should aim to reduce fat mass while preserving both muscle mass and muscle strength. Consequently, there is a need for validated methods to measure muscle mass and strength. Current methods are either expensive and require trained technicians, or have not been validated in populations with class II/III obesity (BMI: 35-45 kg/m2). Therefore, the aim of this study is to validate other methods or a combination of methods to measure muscle mass in a population with class II/III obesity. Secondary Objectives:

1. To assess which combination of methods for measuring muscle mass and muscle strength is most reliable compared to the DEXA scan in a population with class II/III obesity.

2. To assess the variance in muscle mass measured by DEXA in a population with class II/III obesity.

3. To assess the influence of nutrition, exercise and hormones on muscle mass.

Study design: This study is a prospective cross-sectional study and will take place in the Center Obesity Northern Netherlands (CON) at the Medical Center Leeuwarden (MCL). Study population: The population will consist of 120 people, either patients scheduled for a first intake at the Center Obesity Northern Netherlands (CON) or people invited through ads in local newspapers. All patients people between 18 and 65 years of age and a body mass index (BMI) above 40 kg/m2 or above 35 kg/m2 with obesity-related comorbidities are eligible to participate in this study.

Main parameters: muscle mass measured by DEXA, ultrasound (US), bioelectrical impedance analysis (BIA), anthropometric methods and 24-hour urine creatinine.

Main endpoint: correlation between muscle mass measured by DEXA and one of the parameters.

Secondary parameters: muscle strength measured by handgrip strength; biochemical measures; protein intake; and physical activity measured with movement sensors and short questionnaire to assess health-enhancing physical activity (SQUASH).

Secondary endpoint: the correlation between multiple parameters for muscle mass and muscle strength and the muscle mass measured by DEXA.

#### **Study objective**

Finding methods that are more accessible and cheaper, can be helpful in tracking changes in

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muscle mass during weight loss in these patients.

#### Study design

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# Contacts

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# **Eligibility criteria**

### **Inclusion criteria**

- Between 18 and 65 years of age.
- BMI above 40 kg/m2 or above 35 kg/m2 with obesity-related comorbidities.

### **Exclusion criteria**

- History of bariatric surgery
- Inability to perform physical tests e.g.:
- o Conditions limiting them from physical test
- o Inability to walk or stand
- Inability to communicate in either Dutch or English
- Weight over 204 kilograms (due to limitations of the DEXA)
- BMI above 50 kg/m2
- Pregnancy
- Pacemaker

# Study design

### Design

Study type:	Observational non invasive
Intervention model:	Other
Allocation:	Non controlled trial
Masking:	Open (masking not used)
Control:	N/A , unknown

### Recruitment

NL	
Recruitment status:	Recruiting
Start date (anticipated):	01-06-2020
Enrollment:	120
Туре:	Anticipated

### **IPD** sharing statement

#### Plan to share IPD: No

# **Ethics review**

Positive opinion	
Date:	
Application type:	

16-10-2019 First submission

# **Study registrations**

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

ID: 54850 Bron: ToetsingOnline Titel:

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

No registrations found.

# In other registers

Register NTR-new CCMO OMON

ID NL8086 NL71609.099.19 NL-OMON54850

# **Study results**