The effect of endurance exercise training on muscle mass gains during subsequent resistance exercise training in older adults

No registrations found.

Ethical review	Positive opinion
Status	Pending
Health condition type	-
Study type	Interventional

Summary

ID

NL-OMON22675

Source
Nationaal Trial Register

Brief title
AERCO

Health condition

Sarcopenia

Sponsors and support

Primary sponsor: Maastricht University
Source(s) of monetary or material Support: Veni

Intervention

Outcome measures

Primary outcome

• Type II muscle fiber size (muscle biopsy)

Secondary outcome

• Muscle fiber vascularization (muscle biopsy)

• Muscle microvascular perfusion (CEUS)

• Whole-body skeletal muscle mass (MRI)

• Whole-body and regional body lean tissue mass (DEXA)

• Muscular strength (1 RM – each exercise machine)

• Aerobic capacity (VO2peak cycling test)

• Physical performance (short physical performance battery, timed up-and-go, handgrip strength)

• Metabolic health (OGTT)

• Acute muscle satellite cell response to a single bout of exercise (muscle biopsy)

Study description

Background summary

Aging is accompanied by the loss of muscle mass, resulting in a decrease in overall health and function in seniors. This loss can partly be explained by an age-related reduction in muscle perfusion. This study will investigate if endurance exercise training can restore the impaired muscle perfusion to improve muscle mass maintenance and health in older adults.

Study objective

The aerobic pre-conditioning will increase muscle perfusion and thereby improve muscle hypertrophy during the subsequent resistance training program.

Study design

- Pre-endurance training

- Post-endurance training = pre-resistance training

- Post-resistance training

Intervention

- Endurance exercise (if allocated to intervention group)

- Resistance exercise (all participants)

Contacts

Public
Maastricht University
Milan Betz

0433881509
Scientific
Maastricht University
Milan Betz

0433881509

Eligibility criteria

Inclusion criteria

• Age between 65 and 85 y

• BMI between 18.5 and 30 kg/m2

Exclusion criteria

• HbA1C level above 6.5%

• Fasted blood glucose level above 6.9 mmol/L and/or 2 hour OGTT glucose level higher than 11.1 mmol/L

• Smoking

• Diabetes

• Cancer

• Cardiovascular disease

• Arthritic conditions

• A history of neuromuscular problems

• Cognitive Impairment

• COPD

• Renal disorder

• Participation in any structured exercise program

• Hypertension, high blood pressure that is above 140/90 mmHg

• Pulmonary disease

• Known allergic reaction to ultrasound contrast-agent

Study design

Design

Study type:	Interventional
Intervention model:	Parallel
Allocation:	Randomized controlled trial
Masking:	Single blinded (masking used)
Control:	N/A , unknown

Recruitment

NL

Recruitment status:	Pending
Start date (anticipated):	01-01-2019
Enrollment:	72
Type:	Anticipated

IPD sharing statement

Plan to share IPD: Undecided

Ethics review

Positive opinion

Date:	20-12-2018
Application type:	First submission

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
NTR-new	NL7439
NTR-old	NTR7681
Other	NL68192.068.1 : 18-060 MEC Maastricht

Study results