

The effect of cold-water immersion on muscle blood flow and recovery after resistance exercise

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Ethische beoordeling	Positief advies
Status	Werving nog niet gestart
Type aandoening	-
Onderzoekstype	Interventie onderzoek

Samenvatting

ID

NL-OMON24418

Bron

NTR

Verkorte titel

Cold Flow

Aandoening

/

Ondersteuning

Primaire sponsor: Maastricht University

Overige ondersteuning: Maastricht University

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

The primary outcome is microvascular blood flow expressed in arbitrary units measured in rest, following a bout of resistance-type exercise, immediately following the cold/thermoneutral water bath, and 60 and 180 min following the cold/thermoneutral water bath. Microvascular blood flow is measured with contrast-enhanced ultrasound.

Toelichting onderzoek

Achtergrond van het onderzoek

Cold-water immersion (CWI) is a frequently applied strategy to accelerate post-exercise recovery in both recreational as well as professional athletes. However, recent insights suggest that CWI following a bout of resistance-type exercise can blunt recovery by lowering muscle protein synthesis rates. It has been speculated that CWI lowers muscle protein synthesis rates by restricting blood flow in and towards muscle tissue. The objective of this study is to assess the acute effect of CWI on muscle macro-, microvascular blood flow, and amino acid incorporation in muscle tissue during post-exercise recovery in healthy young males.

Doel van het onderzoek

We hypothesize that 20 min of one-legged CWI at 8 degrees Celsius (°C) will lower macro-, microvascular blood flow, and amino acid incorporation in muscle tissue following a bout of resistance-type exercise training when compared with the thermoneutral water immersed control (CON) leg (20 min at 30 °C).

Onderzoeksopzet

Microvascular (primary outcome) and femoral artery (secondary outcome) blood flow will be assessed in rest, following a bout of resistance-type exercise, immediately following the cold/thermoneutral water bath, and 60 and 180 min following the cold/thermoneutral water bath. L-[ring-13C6]-phenylalanine enrichment in mixed muscle protein (secondary outcome) will be assessed at 4 hours following the cold/thermoneutral water bath.

Onderzoeksproduct en/of interventie

Cold-water immersion

Contactpersonen

Publiek

Maastricht University
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Wetenschappelijk

Maastricht University
Milan Betz

0433881509

Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

- Aged between 18-35 years
- Healthy, recreationally active
- Male
- BMI < 30 kg/m²

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

- Smoking
- Allergies to milk proteins (whey or casein)
- Arthritic conditions
- A history of neuromuscular problems
- Recent (<1 y) participation in amino acid tracer studies
- Individuals on any medications known to affect protein metabolism (i.e. corticosteroids, non-steroidal anti-inflammatories, or prescription strength acne medications)
- Individuals with gastrointestinal diseases

Onderzoeksopzet

Opzet

Type:	Interventie onderzoek
Onderzoeksmodel:	Anders
Toewijzing:	N.v.t. / één studie arm
Blinding:	Open / niet geblindeerd
Controle:	N.v.t. / onbekend

Deelname

Nederland	
Status:	Werving nog niet gestart
(Verwachte) startdatum:	01-11-2021
Aantal proefpersonen:	13
Type:	Verwachte startdatum

Voornemen beschikbaar stellen Individuele Patiënten Data (IPD)

Wordt de data na het onderzoek gedeeld: Nog niet bepaald

Ethische beoordeling

Positief advies	
Datum:	07-10-2021
Soort:	Eerste indiening

Registraties

Opgevolgd door onderstaande (mogelijk meer actuele) registratie

Geen registraties gevonden.

Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

In overige registers

Register

NTR-new

Ander register

ID

NL9811

METC MUMC+ : METC 21-049

Resultaten