Post-exercise collagen versus whey protein ingestion

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The post-prandial rise in total amino acid, proline and glycine concentration following a single bout of resistance exercise will be the highest in the 20 gr whey combined with 10 gr collagen compared to all other test drinks

Ethische beoordeling	Niet van toepassing
Status	Werving gestopt
Type aandoening	-
Onderzoekstype	Interventie onderzoek

Samenvatting

ID

NL-OMON27163

Bron
Nationaal Trial Register

Verkorte titel
TBA

Aandoening

muscle metabolism

Ondersteuning

Primaire sponsor: This research is a public private partnership between Maastricht Unversity, Gelita AG and TKI Health-Holland
Overige ondersteuning: Maastricht Unversity, Gelita AG and TKI Health-Holland

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

Peak proline and glycine plasma amino acid concentrations

Toelichting onderzoek

Achtergrond van het onderzoek

Protein ingestion stimulates muscle protein synthesis and augments the muscle protein synthetic response to a single exercise session. In support, protein supplementation has been shown to augment the gains in muscle mass and strength following resistance exercise training. The force generated by contracting muscle is transferred through a network of connective tissue proteins towards the bone. Consequently, remodeling of skeletal muscle connective tissue represents an essential component of skeletal muscle adaptation to exercise. The anabolic effect of a protein supplement is mainly determined by the plasma amino acid response after ingestion. Although whey protein is considered the preferred protein source to maximize myofibrillar protein synthesis rates, it contains insufficient glycine and proline to support the post-exercise increase in connective tissue protein synthesis rates. In contrast, collagen protein is rich in glycine and proline and has, therefore, been proposed as a preferred protein source to support connective tissue remodelling. Hence, the combined ingestion of whey plus collagen protein increase may therefore be preferred to stimulate both myofibrillar and collagen protein synthesis rates in skeletal muscle tissue. However, the ratio of collagen vs whey protein within one drink for an optimal post-prandial rise in amino acid concentrations remains to be determined.

Doel van het onderzoek

The post-prandial rise in total amino acid, proline and glycine concentration following a single bout of resistance exercise will be the highest in the 20 gr whey combined with 10 gr collagen compared to all other test drinks

Onderzoeksopzet

Blood sample will be taken are regular time points during post-exercise recovery

Onderzoeksproduct en/of interventie

Subjects will perform a single resistance exercise session and be randomly assigned to consume a drink containing different ratio's of whey vs collagen protein.

Contactpersonen

Publiek

Maastricht University
Tim Snijders

+31 42 388 1379

Wetenschappelijk

Maastricht University
Tim Snijders

+31 42 388 1379

Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

- Males
- Aged between 18-35 years
- Healthy, recreationally active (participating in recreational sports activities ≤ 3 times per week)
- BMI < 25 kg/m2
- No physical limitations (i.e. able to perform all activities associated with daily living in an independent manner).

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

- Female
- Musculoskeletal disorders
- Use of any medications known to affect protein metabolism (i.e. corticosteroids, non-steroidal anti-inflammatories, or prescribed acne medications).
- Participation in any structured regular exercise program
- Chronic use of gastric acid suppressing medication or anti-coagulants
- Unstable weight over the last three months
- Pathologies of the gastrointestinal tract
- Blood donation in the past 2 months

Onderzoeksopzet

Opzet

Type:	Interventie onderzoek
Onderzoeksmodel:	Cross-over
Toewijzing:	Gerandomiseerd
Blindering:	Dubbelblind
Controle:	Actieve controle groep

Deelname

Nederland

Status:	Werving gestopt
(Verwachte) startdatum:	01-09-2020
Aantal proefpersonen:	15
Type:	Werkelijke startdatum

Voornemen beschikbaar stellen Individuele Patiënten Data (IPD)

Wordt de data na het onderzoek gedeeld: Nog niet bepaald

Toelichting
N/A

Ethische beoordeling

Niet van toepassing

Soort:	Niet van toepassing

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	ID
NTR-new	NL8748
Ander register	METC MUMC+ : METC20-044

Resultaten

Samenvatting resultaten
N/A