Building Bridges between Physical Activity and Diet to improve (cognitive) health after a meal

Gepubliceerd: 16-02-2018 Laatst bijgewerkt: 19-03-2025

The composition of a meal might influence the effect of breaking up prolonged sitting on cognition

Ethische beoordeling	Positief advies
Status	Werving gestopt
Type aandoening	-
Onderzoekstype	Interventie onderzoek

Samenvatting

ID

NL-OMON25025

Bron
Nationaal Trial Register

Verkorte titel
BridgePAD

Aandoening

Sedentary behavior, cognitive function, western diet

Ondersteuning

Primaire sponsor: Radboud University Medical Center Nijmegen
Overige ondersteuning: Radboud University Medical Center Nijmegen

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

The primary objective is to determine whether the composition of a meal alters the impact of

prolonged, uninterrupted sitting and sitting interrupted with bouts of moderate-intensity physical activity on cognitive function.

Toelichting onderzoek

Achtergrond van het onderzoek

Rationale: Sedentary behaviour is an independent risk factor for cardiovascular disease, type II diabetes and all-cause mortality and might also be related to impaired cognitive function. In society today, often unhealthy meals are consumed (e.g. high fat/high calorie) followed by prolonged periods of sitting. Resultantly, people are exposed to the negative effects of sitting and of the meal. Much research has been done to determine if reducing sitting can improve metabolic health and results suggest that breaking up sitting with low-intensity or moderate physical activity can modulate cardiovascular risk factors. However, less is known about how a meal could interfere with the acute effects of sitting and/or breaking up sitting on cardiovascular and cognitive health.

Objective: The primary objective of this study is to determine whether the content of a meal alters the impact of prolonged, uninterrupted sitting and breaking up prolonged sitting on cognitive function. The secondary objective is to determine these impacts on cerebrovascular health, metabolic health and perceivable benefits to better understand possible underlying mechanisms. The tertiary objective is to explore the role of inflammation and oxidative stress in mediating the impact.

Study design: Cross-over design.

Study population: 24 overweight or obese (age >= 45 years, BMI 25 kg/m2 - 35 kg/m2), sedentary (sitting more than 40 hours a week) men and women.

Intervention (if applicable): Participants report 4 times to our laboratory and will receive either a western type breakfast or a 'healthy' breakfast. After the meal, they will be exposed to four hours of continuous sitting or sitting interrupted with 5 minute bouts of moderate intensity physical activity every 30 minutes. In total, participants will be exposed to four different combinations (in a randomized order on different days) of a breakfast and sitting/physical activity, with a wash-out period of one week in between conditions.

Main study parameters/endpoints: The main study parameter is cognitive function, assessed as flexibility, alertness and working memory with the computerized Test of Attentional Performance (TAP). Secondary parameters are cerebrovascular health (i.e. coronary artery reactivity, brain-derived neurotrophic factor levels), metabolic health (i.e. glucose, insulin, cholesterol, triglyceride levels) and perceivable benefits (i.e. mood, satiety/hunger and sleepiness, measured with specific questionnaires). Tertiary parameters are markers for inflammation and oxidative stress.

Doel van het onderzoek

The composition of a meal might influence the effect of breaking up prolonged sitting on cognition

Onderzoeksopzet

One screenings visit.

After enrollment, four visits with a one week period in between.

Onderzoeksproduct en/of interventie

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Contactpersonen

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Wetenschappelijk

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Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

Overweight or obese (BMI ≥ 25 kg/m2 ≤ 35 kg/m2) men/women aged ≥ 45 years, who are sedentary and physically inactive.

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

Diabetes mellitus (type 1/ type 2), cardiovascular disease, untreated hypertension, castrointestinal disease, epilepsy, cancer, thyroid disease, mental disorders, food allergies/intolerances interfering with the study, physical/mental conditions interfering with the study, major illness or injury, glucose/lipid-lowering medication, anti-inflammatory medication, anti-depressants, smoking, following of a strict diet, alcohol consumption > than 3 glasses a day, pregnancy

Onderzoeksopzet

Opzet

Type:	Interventie onderzoek
Onderzoeksmodel:	Cross-over
Toewijzing:	Gerandomiseerd
Blindering:	Open / niet geblindeerd
Controle:	N.v.t. / onbekend

Deelname

Nederland

Status:	Werving gestopt
(Verwachte) startdatum:	01-03-2018
Aantal proefpersonen:	24
Type:	Werkelijke startdatum

Voornemen beschikbaar stellen Individuele Patiënten Data (IPD)

Wordt de data na het onderzoek gedeeld: Nee

Ethische beoordeling

Positief advies

Datum:	16-02-2018
Soort:	Eerste indiening

Registraties

Opgevolgd door onderstaande (mogelijk meer actuele) registratie

ID: 48965
Bron: ToetsingOnline
Titel:

Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

In overige registers

Register	ID
NTR-new	NL6850
NTR-old	NTR7028
CCMO	NL64153.091.17
OMON	NL-OMON48965

Resultaten

Samenvatting resultaten
Wanders L, Cuijpers I, Kessels RPC, van de Rest O, Hopman MTE, Thijssen DHJ. Impact of prolonged sitting and physical activity breaks on cognitive performance, perceivable benefits, and cardiometabolic health in overweight/obese adults: The role of meal composition. Clin Nutr. 2020. doi:10.1016/j.clnu.2020.10.006