Sick of sitting?

Published: 01-02-2016
Last updated: 13-01-2025

In normal weight and overweight/obese young males we expect that - when compared to a single bout of prolonged sitting:(1) sitting on a stability ball will attenuate cardiometabolic health effects;(2) 10-min standing interruptions will not attenuate...

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

Summary

ID

NL-OMON20679

Source
Nationaal Trial Register

Brief title
SOS

Health condition

ENGLISH:
Recent experimental studies on the acute effects of prolonged sitting demonstrated that interruptions during prolonged sitting significantly reduced postprandial glucose, insulin and C-peptide in healthy young adults. Sitting on a stability ball and 10-min standing interruptions may attenuate these negative health effects of prolonged sitting. DUTCH: Recentelijk is aangetoond dat het onderbreken van aaneengesloten zitten een positief effect heeft op postprandiale (d.w.z. na een maaltijd) waarden van glucose, insuline en C-peptide in het bloed. Het is nog onbekend of het actief zitten op een stabiliteitsbal of 10-min durende sta-onderbrekingen de negatieve effecten van aaneengesloten zitten kunnen onderbreken.

Sponsors and support

Primary sponsor: EMGO+ Institute
VU University Medical Center (VUmc)
Source(s) of monetary or material Support: Netherlands Organization for Health Research and Development (“TOP subsidie”; Grant number 91211057)

Intervention

Outcome measures

Primary outcome

The main outcomes of this study are plasma levels of C-peptide, glucose, triglycerides, high-sensitive C-reactive protein (hs-CRP) and saliva levels of cortisol.

Secondary outcome

Secondary outcomes of this study are functioning of the autonomic nervous system, sleep-wake patterns, attention/concentration and mood.

Study description

Study objective

In normal weight and overweight/obese young males we expect that - when compared to a single bout of prolonged sitting:
(1) sitting on a stability ball will attenuate cardiometabolic health effects;
(2) 10-min standing interruptions will not attenuate cardiometabolic health effects.

Study design

Plasma levels of C-peptide, glucose, triglycerides, hs-CRP will be collected hourly (i.e. 6 blood samples); saliva will be collected at baseline and at the end of the experimental days.

Intervention

All included young males will undergo three experimental conditions, with a one-week washout period in between conditions:
I. Sitting only (i.e. on a chair with back support; control condition): participants will remain seated for 5 consecutive hours;
II. Sitting (on a chair with back support) and hourly 10-min standing interruptions: participants will stand for 10-min, using a sit-stand desk before returning to the seated position for 50 minutes. This procedure will be repeated 4 times (i.e. first hour is included to obtain a steady-state, with no standing interruption);
III. Sitting on a stability ball (i.e. without back support): participants will sit on a stability ball (i.e. without back support) for 5 consecutive hours.

Contacts

Public
dpt of public and occupational health EMGO+ institute

Teatske Altenburg
van der Boechorststraat 7, room MF-C575

Amsterdam 1081 BT
The Netherlands
020-4441736
Scientific
dpt of public and occupational health EMGO+ institute

Teatske Altenburg
van der Boechorststraat 7, room MF-C575

Amsterdam 1081 BT
The Netherlands
020-4441736

Eligibility criteria

Inclusion criteria

- Apparently healthy normal weight or overweight/obese males;
- Aged 18-20 years;
- Dutch or English speaking;
- Signed informed consent from the participant (age 18-19) or the participant and both parents (age 17).

Exclusion criteria

- Major acute illness/injury;
- Having diabetes mellitus type II – according to the International Diabetes Federation;
- Physical problems that may limit the ability to perform the experiment (i.e. the standing interruptions or sitting on a stability ball).

Study design

Design

Study type:	Interventional
Intervention model:	Crossover
Allocation:	Randomized controlled trial
Masking:	Open (masking not used)
Control:	Active

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	02-03-2015
Enrollment:	40
Type:	Anticipated

Ethics review

Positive opinion

Date:	01-02-2016
Application type:	First submission

Study registrations

Followed up by the following (possibly more current) registration

ID: 44870
Bron: ToetsingOnline
Titel:

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

No registrations found.

In other registers

Register	ID
NTR-new	NL5616
NTR-old	NTR5723
CCMO	NL51407.029.15
OMON	NL-OMON44870

Study results

Summary results

Altenburg TM, Rotteveel J, Dunstan DW, Salmon J, Chinapaw MJM. The effect of interrupting prolonged sitting time with short, hourly, moderate-intensity cycling bouts on cardiometabolic risk factors in healthy, young adults. J Appl Physiol. 2013 Dec;115(12):1751–6.