Personal Control Systems in Moderately Drifting Temperatures

No registrations found.

Ethical review	Positive opinion
Status	Recruitment stopped
Health condition type	-
Study type	Interventional

Summary

ID

NL-OMON26270

Source
NTR

Brief title
PCS

Health condition

Not accplicable

Sponsors and support

Primary sponsor: School for Nutrition and Translational Research Metabolism (NUTRIM)
Source(s) of monetary or material Support: TKI

Intervention

Outcome measures

Primary outcome

The differences in thermal sensation, comfort, acceptance between the two conditions.

Secondary outcome

The effect of a personal control system in moderate temperature drift on energy metabolism,

thermophysiological, and cardiovascular parameters.
The effect of a personal control system in moderate temperature drift on the air quality perception and cognitive task performance.
The underlying relation of control behavior and physiological and psychological parameters.
The effect of thermal comfort and sensation on visual comfort and perception

Study description

Background summary

Rationale: In order to fulfil the demand of thermal comfort, current environmental design practice narrows the temperature into a small range. Less strict, dynamic, indoor conditions, however, pave the way to increased energy efficiency in buildings. Moreover, excursions outside the thermal comfort range have been proven beneficial for metabolic health. Under drifting (dynamic) thermal conditions such exposures to mild cold or heat may be perceived as acceptable, but significant individual differences are evident. Acceptance of a drifting indoor temperature can potentially be extended using a personal control system.
Objective: To evaluate the effects of personal control systems on thermal comfort, physiology and cognitive performance in moderately drifting temperatures.
Study design: This experiment has a cross-over design consisting of two conditions which will be conducted in two separate days. The control condition consists of a drifting temperature without a personal temperature control system and the other condition is a drifting temperature with a personal temperature control system. Measurements include thermal perception, visual comfort, alertness, body temperature, energy expenditure, blood perfusion, cardiovascular parameters, control behavior and cognitive performance.
Study population: 18 healthy lean participants (9 male, 9 female) aged between 18 and 40 years, BMI >18 and <27.5 kg/m2 will be included.
Main study parameters/endpoints: Difference in thermal sensation, comfort, acceptance between the two conditions.

Study objective

With personal control system, people feel more comfortable.

Study design

6 time points: 1 information session, 1 screening session, 2 preparation sessions and 2 test sessions

Contacts

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Eligibility criteria

Inclusion criteria

• Caucasian race
• Age 18-40 years
• BMI between 18 and 27.5 kg/m2
• Non-smoking
• Steady dietary habits
• Generally healthy, no medication use that interferes with metabolism. If volunteers need medication (e.g. statin drugs, NSAIDs), it will be reviewed with the dependent physician on an individual basis.
• Female participant who using Microgynon 30 or levonorgestrel/ehinylestradiol
• Normal chronotype

Exclusion criteria

• Cardiac problems and cardiovascular diseases, such as angina pectoris, cardiac infarction and arrhythmias
• Any medical condition requiring treatment and/or medication that might interfere with the investigated parameters. All medical conditions/medications will be reviewed with the dependent physician and in-/exclusion will be decided on individual basis
• Presence of Raynaud’s phenomenon
• Unstable body weight (weight gain or loss >3 kg in the past month)
• Participation in another biomedical study within 1 month prior to screening visit
• Participants who do not want to be informed about unexpected medical findings, or do not wish that their treating physician will be informed, cannot participate in this study
• Jet lag or night shift work in the past 2 months
• Color blindness
• Participants who undergone an operation on the gastrointestinal system in the past

Study design

Design

Study type:	Interventional
Intervention model:	Crossover
Allocation:	Randomized controlled trial
Masking:	Open (masking not used)
Control:	N/A , unknown

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	30-07-2019
Enrollment:	18
Type:	Actual

IPD sharing statement

Plan to share IPD: Undecided

Ethics review

Positive opinion

Date:	23-05-2019
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	NL7757
Other	METC Maastricht Universiteit : 76263

Study results