Exercise physiological strain and risks during the 4 days marches in Nijmegen

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- Assess the influence of air temperature and humidity on cardiovascular, metabolic, and thermic stress during the 4 days marches in Nijmegen in a representative subpopulation.- Identify internal factors (such as body composition, fluit/food intake...

Ethical review	Approved WMO
Status	Recruiting
Health condition type	Other condition
Study type	Observational invasive

Summary

ID

NL-OMON31035

Source
ToetsingOnline

Brief title
Physiological changes during the 4-days marches

Condition

- Other condition

Synonym
not applicable

Health condition

gezonde vrijwilligers

Research involving
Human

Sponsors and support

Primary sponsor: Universitair Medisch Centrum Sint Radboud
Source(s) of monetary or material Support: Stichting De Nijmeegse 4-daagse

Intervention

Keyword: Exercise physiology, heart rate, temperature, walking

Outcome measures

Primary outcome

Heart rate, blood pressure and core temperature are the endpoints used for the cardiovascular and thermic factors. To assess the metabolic factors, hematocrit, glucose, proteins and natrium will be determined from blood and urine samples. These are the most important end points to determine the physiological stress on the participants during the 4 days marches in Nijmegen.

Secondary outcome

Potential internal and external factors will be examined that possibly influence the physiological stress during the marches. On the day before the marches, we determine the most important subject characteristics (weight, height, blood pressure, fat percentage, drug use, history of health status). Furthermore, subjects will fill out a questionnaire on each walking day to monitor changes in clothing and the intake of food and fluids. In addition, in collaboration with a meteorological organisation, we receive continuous information regarding air temperature, humidity and air pressure.

Study description

Background summary

Walking exercise is a common type of exercise, frequently advised by physicians to patients as a relatively save and easy to perform exercise mode to maintain or improve physical fitness. Walking exercise is also one of the most popular sports activities, emphasized by the large number of marches (1 or more days) and the numerous participants.
In contrast to marathons, which has been subject for research for several years, relatively little is known regarding to the cardiovascular, metabolic and thermic strain during long-distance walking (marches). This information is crucial to assess the physiological stress during marches and the possible health risk. Moreover, the influence of external (air temperature, humidity) and internal factors (fluid intake, food intake, clothing, body composition) on the physiological responses during marches is completely unknown. The events during the annual 4 days marches in Nijmegen in 2006, which has led to 2 deaths on an extremely hot day, emphasize the importance of this information. Annual registration of these physiological parameters in a subgroup of participants of the 4 days marches in Nijmegen will result in a database which will result in better insight into the physiological stress of such marches, but also to the health risk and the identification of internal and external risk factors that markedly alter the physiological stress.

Study objective

- Assess the influence of air temperature and humidity on cardiovascular, metabolic, and thermic stress during the 4 days marches in Nijmegen in a representative subpopulation.
- Identify internal factors (such as body composition, fluit/food intake, clothing) that influence the cardiovascular, metabolic, and thermic stress during the 4 days marches in Nijmegen to result in a good assessment of the health risk.

Study design

This study represents an observational research. The fortcoming 10 years, a group of 60 participants of the 4 days marches in Nijmegen will be examined to finish with a representative subgroup of participants of this march. In addition, this study design will lead to heterogenuous climate circumstances. This is necessary to examine the physiological stress during the 4 days marches in Nijmegen, but also to identify climate circumstances and other possible factors (internal and external) that may significantly alter the physiological strain during the 4 days marches.

Study burden and risks

To the best of our knowlegde, no risks are related to the measuring techniques used in this study.

Contacts

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adults (18-64 years)
Elderly (65 years and older)

Inclusion criteria

Participation in the 4 days marches in Nijmegen
Aged 18 or older

Exclusion criteria

There are no exclusioncriteria, similar as the organisation of the 4 days marches in Nijmegen has no exclusioncriteria. If we would include exclusion criteria we cannot extrapolate our findings to the relevant group (participants of the 4 days marches in Nijmegen).

Study design

Design

Study type: Observational invasive

Masking:	Open (masking not used)
Control:	Uncontrolled
Primary purpose:	Prevention

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	01-07-2007
Enrollment:	600
Type:	Actual

Ethics review

Approved WMO Date:	10-07-2007
Application type:	First submission
Review commission:	CMO regio Arnhem-Nijmegen (Nijmegen)
Approved WMO Date:	16-03-2016
Application type:	Amendment
Review commission:	CMO regio Arnhem-Nijmegen (Nijmegen)
Approved WMO Date:	29-05-2017
Application type:	Amendment
Review commission:	CMO regio Arnhem-Nijmegen (Nijmegen)
Approved WMO Date:	28-05-2018
Application type:	Amendment
Review commission:	CMO regio Arnhem-Nijmegen (Nijmegen)
Approved WMO	

Date:	15-07-2024
Application type:	Amendment
Review commission:	CMO regio Arnhem-Nijmegen (Nijmegen)

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
CCMO	NL18245.091.07