

Placebo effect during sprint training in simulated altitude

Submission date 18/02/2025	Recruitment status No longer recruiting	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
Registration date 25/03/2025	Overall study status Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
Last Edited 25/03/2025	Condition category Other	<input type="checkbox"/> Individual participant data <input type="checkbox"/> Record updated in last year

Plain English summary of protocol

Background and study aims

Repeated sprint training in hypoxia (low oxygen levels) has been proposed to further enhance performance compared to the same training in normoxia (normal oxygen levels). Given the positive belief about hypoxic training, it is possible that performance may be artificially increased by a placebo effect. However, this has never been tested yet. This study proposes to compare the response to repeated sprint training between three groups of participants: a control group that trains in normoxia, an experimental group that trains in hypoxia and a placebo group that trains in normoxia but that was told that training was in hypoxia.

Who can participate?

Recreationally or well-trained participants aged over 18 years and below 30 years who are accustomed to repeated sprints during their personal practice

What does the study involve?

There are 13 visits of 45 minutes each on 7 consecutive weeks. Participants are allocated to control (normoxia), placebo (normoxia but told that they were in hypoxia) or hypoxia based on their personal performance on the pre-test session.

What are the possible benefits and risks of participating?

Potential benefits are an increase in physical fitness. Potential risks are fatigue due to the training session.

Where is the study run from?

Euromov Digital Health in Motion (France)

When is the study starting and how long is it expected to run for?

October 2021 to December 2022

Who is funding the study?

University of Montpellier (France)

Who is the main contact?

Dr François Favier, francois.favier@umontpellier.fr

Contact information

Type(s)

Public, Scientific, Principal investigator

Contact name

Dr François Favier

ORCID ID

<https://orcid.org/0000-0002-9084-4797>

Contact details

700 avenue du Pic Saint Loup

Montpellier

France

34090

+33 (0)676832401

francois.favier@umontpellier.fr

Additional identifiers

Protocol serial number

IRB-EM 2201C

Study information

Scientific Title

Examining placebo effects after a three-week repeated-sprint training program under hypoxic conditions in recreationally trained subjects

Acronym

OPTIPOXIE

Study objectives

1. The belief of exercising in hypoxia leads to performance improvement because of the placebo effect
2. Training in hypoxia leads to further improvement compared to the placebo group

Ethics approval required

Ethics approval required

Ethics approval(s)

approved 02/03/2022, IRB EuroMov-Montpellier (700 avenue du Pic ST Loup, Montpellier, 34090, France; +33 (0)434432630; irb@euromov.eu), ref: IRB-EM 2201C

Study design

Monocenter interventional double-blinded randomized controlled trial

Primary study design

Interventional

Study type(s)

Other

Health condition(s) or problem(s) studied

Effectiveness of repeated-sprint training in moderately trained subjects

Interventions

Participants were familiarized with the Wingate test in week 1. They were tested on Wingate and repeated sprint tests on week 2 (both tests being separated by 48 h). They were randomly balanced in a control (normoxia), placebo (normoxia but told that they were in hypoxia) or hypoxia group based on their personal performance (mean power output) on the pre-test session. They were subjected to two training sessions of repeated sprints per week for 3 weeks (weeks 3 to 5). They were tested twice on Wingate and repeated sprint tests (weeks 6 and 7), with 1 week between the same tests.

Intervention Type

Other

Primary outcome(s)

Mean power output measured on an ergocycle during testing sessions, i.e. at baseline, 1 and 2 weeks after training completion

Key secondary outcome(s)

1. Heart rate measured by Polar H10 chest sensor during all training and testing sessions
2. Rate of perceived exertion measured with the Borg's scale (6 to 20) after each training and testing session
3. Oxygen pulse saturation measured via an infrared sensor during all training sessions
4. Participants' wellness measured by a questionnaire (Hooper and Mackinnon, 1995) before each testing session
5. Peak power output measured on an ergocycle at baseline, 1 and 2 weeks after training completion
6. Mean power output measured on an ergocycle during all training sessions

Completion date

16/12/2022

Eligibility

Key inclusion criteria

1. Regular sport training + being accustomed to intense exercise such as repeated sprints
2. No intolerance to moderate hypoxia
3. No stay at altitudes above 1500 m in the previous 2 months
4. Aged over 18 years and below 30 years

Participant type(s)

Healthy volunteer

Healthy volunteers allowed

No

Age group

Adult

Lower age limit

18 years

Upper age limit

30 years

Sex

All

Total final enrolment

33

Key exclusion criteria

Does not meet the inclusion criteria

Date of first enrolment

01/04/2022

Date of final enrolment

01/09/2022

Locations**Countries of recruitment**

France

Study participating centre

Euromov Digital Health in Motion lab

700 avenue du Pic St Loup

Montpellier

France

34090

Sponsor information**Organisation**

EuroMov Digital Health in Motion

ROR

<https://ror.org/054b22910>

Funder(s)

Funder type

University/education

Funder Name

Université de Montpellier

Alternative Name(s)

University of Montpellier, UM

Funding Body Type

Government organisation

Funding Body Subtype

National government

Location

France

Results and Publications

Individual participant data (IPD) sharing plan

The anonymized datasets generated during the current study will be available on reasonable request from Dr François Favier (francois.favier@umontpellier.fr)

IPD sharing plan summary

Available on request