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# Placebo effect during sprint training in simulated altitude

| Submission date | Recruitment status | [_] Prospectively registered |
|---|---|---|
| 18/02/2025 | No longer recruiting | [_] Protocol |
| **Registration date** | **Overall study status** | [_] Statistical analysis plan |
| 25/03/2025 | Completed | [_] Results |
| **Last Edited** | **Condition category** | [_] Individual participant data |
| 25/03/2025 | Other | [X] 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

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# Additional identifiers

### EudraCT/CTIS number
Nil known

### IRAS number

### ClinicalTrials.gov number
Nil known

### Secondary identifying numbers
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

## Secondary study design
Randomised controlled trial

## Study setting(s)
Laboratory

## Study type(s)
Other

## Participant information sheet
not available in web format, please use contact details to request a participant information sheet (in french)

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

## Secondary outcome measures
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

### Overall study start date
01/10/2021

### 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

### Age group
Adult

### Lower age limit
18 Years

### Upper age limit
30 Years

### Sex
Both

### Target number of participants
30

### 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
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# Sponsor information

**Organisation**
EuroMov Digital Health in Motion

**Sponsor details**
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**Sponsor type**
Research organisation

**Website**
https://dhm.euromov.eu

**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

**Publication and dissemination plan**
Planned publication in a peer-reviewed journal in the field of physiology and/or sports sciences

**Intention to publish date**

**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