

# Establishing the length of physical activity needed to improve cognitive performance in Dutch adolescents (11-14 years).

No registrations found.

|                              |                  |
|------------------------------|------------------|
| <b>Ethical review</b>        | Positive opinion |
| <b>Status</b>                | Pending          |
| <b>Health condition type</b> | -                |
| <b>Study type</b>            | Interventional   |

## Summary

### ID

NL-OMON20170

### Source

Nationaal Trial Register

### Health condition

Physical activity, exercise, cognitive performance, school grades, physical fitness, exercise intensity, exercise duration, gym, school, adolescents

Beweging, cognitieve prestatie, schoolcijfers, leren, school, adolescenten, bewegingsinspanning, bewegingsduur

## Sponsors and support

**Primary sponsor:** VU University Medical Center (Performer)

**Source(s) of monetary or material Support:** NWO

## Intervention

## Outcome measures

### Primary outcome

Cognitive performance on a task measuring selective attention and a task measuring working memory.

### **Secondary outcome**

- Heart rate variability
- Physical fitness
- School grades (CITO scores)

## **Study description**

### **Background summary**

Participation in physical activity (PA) has received particular attention in the scientific literature, not only for its beneficial effects on physical and emotional health, but also for its positive effects on cognitive functioning. A single bout of physical exercise has been found to increase performance on tasks measuring higher order cognitive processes, such as attention and working memory.

The majority of studies performed to investigate the relationship between PA and cognitive performance, implement exercise sessions of approximately 30 minutes at a moderate to vigorous level of intensity. Such long exercise sessions are difficult to implement in a school setting, as such, it is necessary to assess whether the effects of physical activity on cognitive performance are present after shorter bouts of exercise.

In this study, we investigate PA-related effects on cognitive performance after engaging in physical exercise at 10, 20 and 30 minutes.

### **Study objective**

In this study we will investigate whether the effects of physical activity on cognitive performance are present after short (10 minutes), medium (20 minutes) or longer (30 minutes) bouts of moderate exercise in order to establish the feasibility of implementing exercise programs in a school setting.

### **Study design**

This is a cross-sectional study, therefore, the acute effects of physical activity will be measured at one timepoint per group.

### **Intervention**

Group 1) Acute effects of 10 minutes of physical activity at a moderate level of intensity.

Group 2) Acute effects of 20 minutes of physical activity at a moderate level of intensity.

Group 3) Acute effects of 30 minutes of physical activity at a moderate level of intensity.

Control conditions

Group 1) Reading, filling in questionnaires and solving puzzles for 10 minutes.

Group 2) Reading, filling in questionnaires and solving puzzles for 20 minutes.

Group 3) Reading, filling in questionnaires and solving puzzles for 30 minutes.

## Contacts

### **Public**

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## Eligibility criteria

### **Inclusion criteria**

Dutch adolescents following elementary and high school (11-14 years).

## Exclusion criteria

-none-

## Study design

### Design

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

### Recruitment

|                           |             |
|---------------------------|-------------|
| NL                        |             |
| Recruitment status:       | Pending     |
| Start date (anticipated): | 04-11-2014  |
| Enrollment:               | 80          |
| Type:                     | Anticipated |

## Ethics review

|                   |                  |
|-------------------|------------------|
| Positive opinion  |                  |
| Date:             | 30-10-2014       |
| 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  | NL4758  |
| NTR-old  | NTR4886   |
| Other    | METc VUmc: 2014.363 : EMGO+ institute: WC2014-020 |

## Study results