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'The MOVE' pilot study: Short physical activity breaks during ordinary lectures in upper secondary school; A 12 week pilot study

Submission date 09/12/2023	**Recruitment status** No longer recruiting	[_] Prospectively registered [X] Protocol
Registration date 14/12/2023	**Overall study status** Completed	[_] Statistical analysis plan [X] Results
Last Edited 04/08/2025	**Condition category** Other	[_] Individual participant data

Plain English summary of protocol

Background and study aims
The overall aim of this 12-week pilot intervention study is to evaluate the feasibility and adherence of short pupil-led physical activity breaks in upper secondary school through anchoring in competence goals in physical education. Furthermore, we want to evaluate whether the measure can contribute to increasing the pupils' physical activity level, which can potentially contribute to positive effects on both physical fitness, attention/concentration, well-being, learning behavior and classroom climate. Briefly, 'MOVE'-breaks are short physical activity sessions of 6-7 minutes duration implemented as 'breaks' in regular 90-minute lectures. The 'MOVE'-breaks concept is thought to be linked to the interdisciplinary competence goal Public Health and Life Management, as well as to specific competence goals in physical education.

Who can participate?
The main target group for the project is 1st year pupils (VG1).

What does the study involve?
Participants will be randomly allocated to the intervention or control groups.
During the intervention period, heart rate measurements as well as an attention test will be carried out in the intervention groups linked to a specific 'MOVE'-break.
At baseline and at 12-week follow-up, both the intervention- and control groups will carry out physical fitness tests (aerobic fitness, muscle strength, postural balance and flexibility), an electronic questionnaire, as well as objective measurements of physical activity level.

What are the possible benefits and risks of participating?
The measure can potentially contribute to increasing the pupils' level of physical activity, as well as having beneficial effects on physical fitness and attention/concentration, well-being, learning behavior and the classroom climate. Participating in the study in question involves no greater risk of injury than would apply to participation in an ordinary physical education class.

Where is the study run from?
Inland Norway University of Applied Sciences (Norway)

When is the study starting and how long is it expected to run for?
September 2022 to May 2023

Who is funding the study?
Savings Bank Foundation DNB (Norway)

Who is the main contact?
Associate Professor Svein Barene, svein.barene@inn.no

Contact information

Type(s)
Public, Scientific, Principal investigator

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Additional identifiers

Study information

Scientific Title
'The MOVE' pilot study: An evaluation of the implementation of short physical activity breaks led by pupils during ordinary lectures in upper secondary school: A 12-week pilot study

Acronym
MOVE12

Study objectives
The overall aim of the pilot study is to assess the feasibility and adherence of short pupil-led physical activity breaks in upper secondary school with anchoring in competence goals in physical education. Furthermore, we want to evaluate whether the measure can contribute to increasing the pupils' level of physical activity, as well as influencing physical fitness, attention /concentration, well-being, learning behavior and the classroom climate.

Ethics approval required
Ethics approval required

Ethics approval(s)
approved 23/12/2022, Research Ethics Commitee at Inland Norway University of Applied Sciences (PO Box 400, Elverum, 2418, Norway; +47 61288277; anne.lofthus@inn.no), ref: 21 /01894

Study design
Interventional randomized controlled pilot study

Primary study design
Interventional

Study type(s)
Prevention, Quality of life

Health condition(s) or problem(s) studied
Short physical activity breaks led by pupils during ordinary lectures in upper secondary school

Interventions
Participants were randomly assigned to intevention or control groups. The randomisation was made by lot by blinded staff, i.e. classes were assigned to either an intervention group or a control group (1:1 ratio). At each of the three schools consisting of classes (n=25-30) with specialization in general studies, the school management initially made a selection of four classes/groups with the most homogeneous characteristics possible. The selection was conducted by drawing from two boxes: i) the two different groups (the intervention group or the control group) and ii) the four classes/groups (1, 2, 3 or 4). The process was initiated by drawing one group from box 1, followed by drawing one class/group from box 2. The next draw from box 2 was consequently allocated to the remaining group in box 1. This process was repeated until all the classes had been assigned to either an intervention group or the control group. At the two schools that consist of vocational study programs with smaller class sizes (n=12-17), stratification was carried out in collaboration with the school management to ensure as homogeneous classes/groups as possible matched on gender, number and subject area, respectively, which were then distributed in four separate boxes (box A, B, C or D). The selection was initiated by drawing a group from box 1 (the intervention group or the control group), followed by drawing a class/group from one of the A-D-boxes. This process was repeated until all classes had been distributed equally to the intervention groups and the control group, respectively.

During the intervention period, the intervention groups will be encouraged to carry out a minimum of 2 x 6-7 minute daily 'MOVE'-breaks during ordinary classroom sessions. The content of the intervention is determined by the pupils themselves (in pairs 2 and 2), defined through a mandatory work requirement in physical education, in that they plan and lead 6-7 minutes of strength- and/or endurance activities.

At baseline and at 12-week follow-up, both the intervention- and control groups will carry out physical fitness tests (aerobic fitness, muscle strength, postural balance and flexibility), an electronic questionnaire, as well as objective measurements of physical activity level.

Intervention Type
Behavioural

Primary outcome(s)

Current primary outcome measure as of 03/06/2024:

Feasibility and sustainability of the measure evaluated through the pupils' adherence and subjective experiences of both pupils and teachers at 12-week follow-up. Assessed through focus group interviews at the 12-week follow-up.

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Previous primary outcome measure:

Feasibility and sustainability of the measure assessed through the pupils' adherence and subjective experiences of both pupils and teachers at 12-week follow-up

Key secondary outcome(s))

Current secondary outcome measures as of 03/06/2024:

1. Attention/concentration measured using Eriksen Flanker test and Stroop test at baseline and 12-week follow-up.
2. Heart rate measurements during 'MOVE'-breaks using Polar Team Pro System
3. Physical activity level measured using ActiGraph wGT3X-BT at baseline and 12-week follow-up.
4. Aerobic fitness measured using YMCA 3-minute step test at baseline and 12-week follow-up.
5. Muscle strength measured by i) standing long jump and ii) handgrip (dynamometer) at baseline and 12-week follow-up.
6. Postural balance measured by i) two-legs standing, eyes closed (30 s) and ii) one-leg standing, eyes open (30 s) at baseline and 12-week follow-up.
7. Flexbility measured by sit-and-reach test at baseline and 12-week follow-up.
8. Sleep measured by the four single-items derived from a modified version of the Karolinska Sleep Questionnaire at baseline and 12-week follow-up.
9. Wellbeing measured by the Warwick Edinburgh Mental Wellbeing 7-item scale at baseline and 12-week follow-up.
10. Self-efficacy measured by a factor developed and constructed for Norwegian use by Sørlie and Nordahl (1998) from Bandura (2006) at baseline and 12-week follow-up.
11. Learning environment and social well-being in class measured by 13 items developed by Moos and Trickett (1974) and processed and translated to Norwegian by Sørlie and Nordahl (1998) and Ogden (1995) at baseline and 12-week follow-up.
12. Social isolation measured by 21 items constructed by Gresham and Elliott (1990) “Social skills rating system” which was later processed and translated to Norwegian by Sørlie and Nordahl (1998) at baseline and 12-week follow-up

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Previous secondary outcome measures:

1. Attention/concentration measured using Eriksen Flanker test and Stroop test at baseline and 12-week follow-up.
2. Heart rate measurements during 'MOVE'-breaks using Polar Team Pro System
3. Physical activity level measured using ActiGraph wGT3X-BT at baseline and 25-week follow-up.
4. Aerobic fitness measured using YMCA 3-minute step test at baseline and 25-week follow-up.
5. Muscle strength measured by i) standing long jump and ii) handgrip (dynamometer) at baseline and 25-week follow-up.
6. Postural balance measured by i) two-legs standing, eyes closed (30 s) and ii) one-leg standing, eyes open (30 s) at baseline and 25-week follow-up.

7. Flexbility measured by sit-and-reach test at baseline and 25-week follow-up.
8. Sleep measured by the four single-items derived from a modified version of the Karolinska Sleep Questionnaire at baseline and 25-week follow-up.
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Completion date
30/05/2023

Eligibility

Key inclusion criteria
1st year pupils in upper secondary school, i.e. aged 16 - 17 years

Participant type(s)
Learner/student

Healthy volunteers allowed
No

Age group
Child

Lower age limit
16 years

Upper age limit
17 years

Sex
All

Total final enrolment
494

Key exclusion criteria
1. Specific disabilities that make participation impossible
2. Specific illnesses that can cause health hazards

Date of first enrolment
03/01/2023

Date of final enrolment
26/01/2023

Locations

Countries of recruitment
Norway

Study participating centre
Viken County Municipality
PO Box 220
Sarpsborg
Norway
1702

Sponsor information

Organisation
Inland Norway University of Applied Sciences

ROR
https://ror.org/02dx4dc92

Funder(s)

Funder type
Charity

Funder Name
Sparebankstiftelsen DNB

Results and Publications

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study will be available upon request from Svein Barene, svein.barene@inn.no.

IPD sharing plan summary
Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		01/08/2025	04/08/2025	Yes	No
Protocol article		13/01/2025	07/04/2025	Yes	No
Other publications		26/03/2025	28/04/2025	Yes	No
Participant information sheet			13/12/2023	No	Yes
Study website	Study website	11/11/2025	11/11/2025	No	Yes