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PHYSICAL ACTIVITY BEHAVIOR OF
CHILDREN AND YOUTH IN LUXEMBOURG

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PHYSICAL ACTIVITY BEHAVIOR OF
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Physical activity of students in Luxembourg on days with and without physical education and during physical education

PALUX - Project

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- Decrease in children's and adolescents' physical activity (PA) in industrialized countries (Kohl et al., 2012)
 - in Luxembourg only 20-25% of girls and 35-40% of boys are physically active for at least 60 minutes daily (WHO) (Luxembourg Physical Activity Factsheet, 2015)
- Due to this fact, the importance of physical education (PE) has increased and the school environment is an attractive option for promoting student's PA motivation and behavior.
- Several studies show that only a small percentage of students meet PA guidelines during PE (at least 50% moderate to high PA).
 - (eg. Nettlefold et al., 2011)
 - There are no data available considering this issue for Luxembourgish schools yet.

- The pilot study pursues the aim of objectively measuring the extent and intensity of PA of students to determine whether the Luxembourgish students fulfill the guidelines for PA on...
 1. the day with PE,
 2. days without PE,
 3. weekdays,
 4. weekend days,
 5. during PE

- Combine objective measurement with subjective assessment

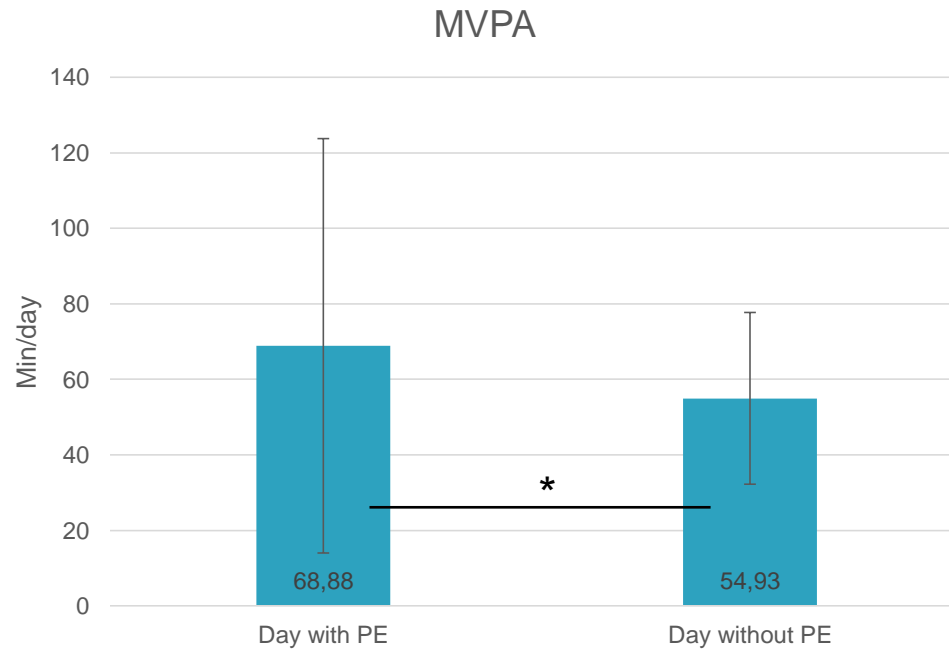
- 75 students (38 girls and 37 boys, aged 10 to 18 years) of one primary school and one secondary school in Luxembourg
- Participants wore an accelerometer (ActiGraph GT3X-BT) over seven consecutive days on waking hours



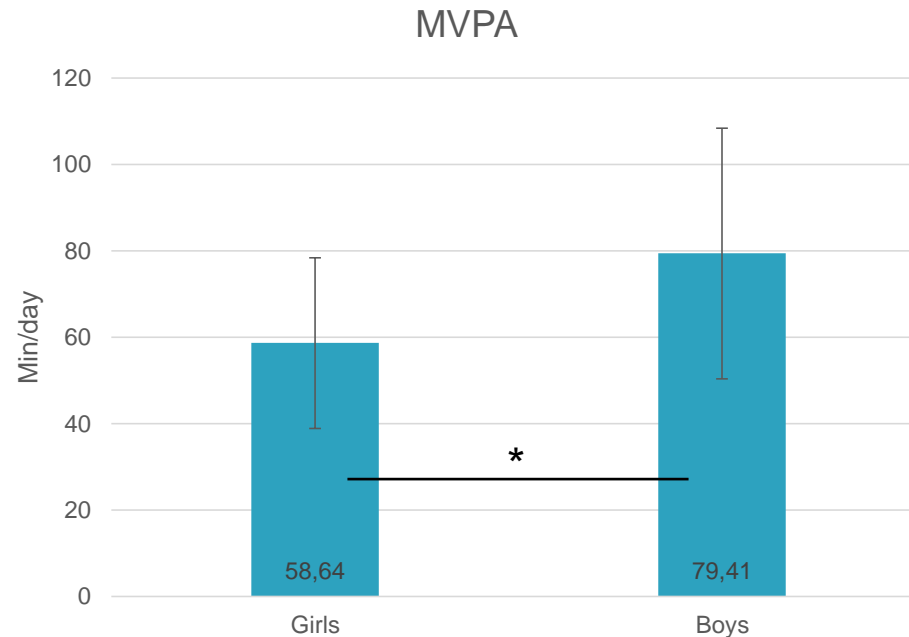
- Additionally, PA behavior was assessed through a self-report online questionnaire using items of the MoMo physical activity questionnaire.

- 75 students (38 girls and 37 boys, aged 10 to 18 years) of one primary school and one secondary school in Luxembourg
- Participants wore an accelerometer (ActiGraph GT3X-BT) over seven consecutive days on waking hours
 - Valid data required at least 8 hours of wear time on at least 4 days. The day with PE had to be a valid day, as well as one weekend day.
 - Activity was categorized as sedentary (SED), light physical activity (LPA) or moderate to vigorous physical activity (MVPA) using age-specific thresholds
 - Data were examined for (1) day with PE, (2) days without PE, (3) weekdays, (4) weekend days and (5) during PE.
- Additionally, PA behavior was assessed through a self-report online questionnaire using items of the MoMo physical activity questionnaire.

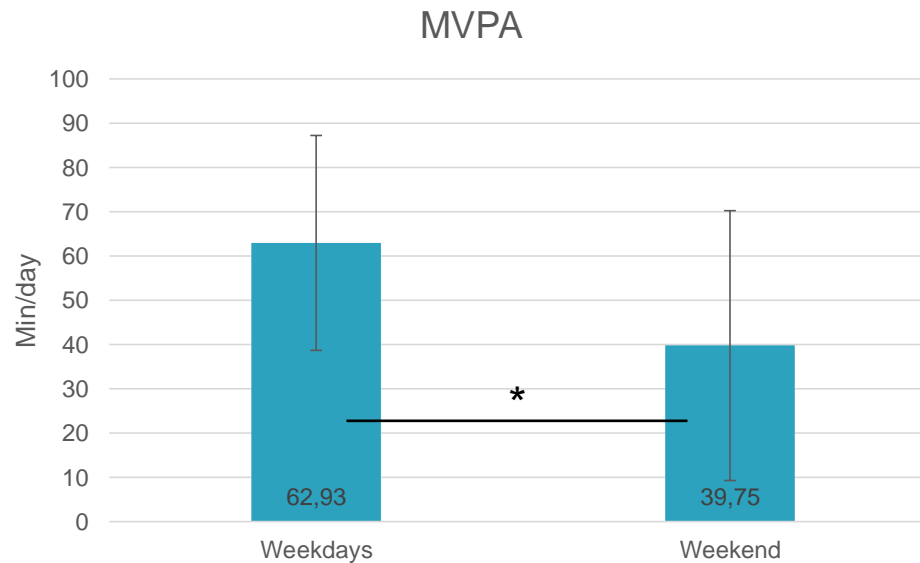
- The time students spent in MVPA on a (1) day with PE differs from (2) the days without PE ($t(74) = -5.712, p < 0.001$).



- Girls spent less than 60 minutes in MVPA on the day with PE, whereas boys meet the WHO-Guidelines.
- A gender difference is shown ($t(63.27) = 3.61, p = 0.001$)



- A difference between (3) weekdays and (4) weekend days was found ($t(74) = 6.548, p < 0.001$).
- No difference between boys and girls.



- During PE, none of the girls and 16,2% of boys achieved the PA guidelines.



- Boys accumulated significantly ($t(73) = 4.37, p < 0.001$) more MVPA ($36,73 \pm 15,78 \%$) than girls ($23,37 \pm 10,15 \%$) during PE.

- Subjective assessment:

- 44 students reported to sweat and wheeze a lot,
- 29 to lightly sweat and wheeze and
- 2 reported to not sweat at all during PE.

→ No association between the MVPA during PE and the self reported effort was found.

- Positive influence of PE (MVPA on day with PE > MVPA days without)
- Nevertheless, in accordance to other studies, a deficit in MVPA during PE was revealed for both sexes. Although boys showed better results, PA strategies targeting boys and girls are essential to overcome this deficit.
- Since there is no association between the subjective assessment and the objectively measured data regarding the effort in PE, this confirms the need for objective data and shows that the students' body feelings and the feelings for effort should be increased
- Further research is necessary and strategies need to be developed to remedy these deficits. Additional analysis should also consider effects of age and school type → PALUX-Project

Thank you for your attention!



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