

A vocational school-based intervention to promote physical activity: accelerometer-measured baseline data



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Introduction

Low levels of physical activity (PA) and high levels of sedentary behavior (SB) in young people are detrimental for health and can also track into later life. There is a lack of information about PA and SB among pupils from vocational schools. Vocational school days are an important period of behavior change due to a transition from school and work life. The aim of the present analysis was to describe levels of accelerometer-measured PA and SB in young adults attending vocational school.

Methods

The Baseline sample of an intervention study to enhance PA and reduce SB was 69 pupils. The design and procedure of the study are thoroughly described elsewhere. PA and SB were measured by wearing the ActiGraph GT3X+ for 7 consecutive days at the hip. Valid accelerometer data in terms of 10 hrs/day wearing time on at least 2 days were obtained from 84% of pupils (n=58). The sampling interval epoch was set at 30 seconds. Daily steps, minutes of sedentary, light, or moderate-to-vigorous PA were analyzed. The accelerometer output was derived as counts per minute (cpm) and thresholds for sedentary (< 100 cpm), light (100 - 1951 cpm), moderate (1952 - 5724 cpm), and vigorous (> 5725 cpm) activity were used to determine time spent at each activity intensity.

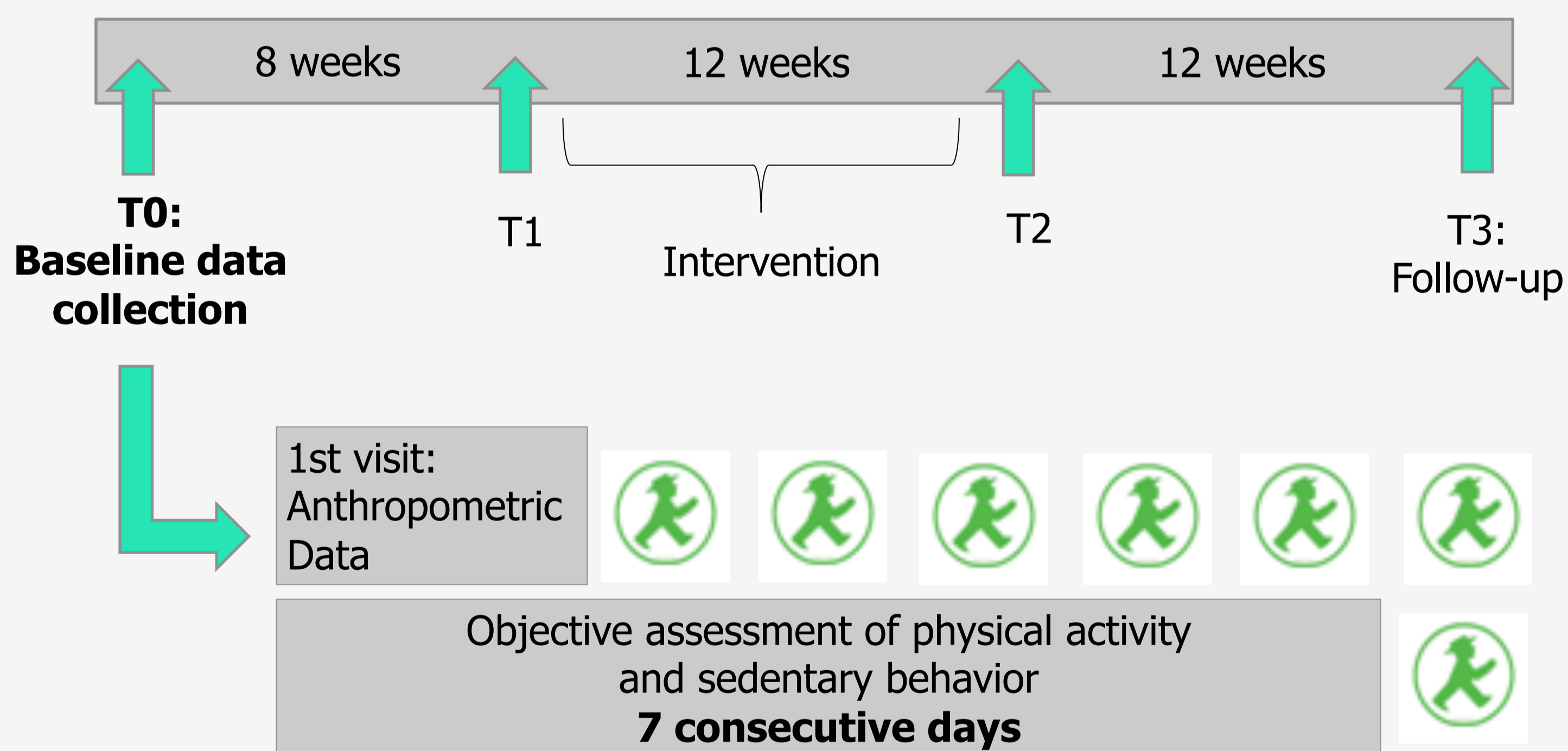


Fig.1: Study design and time of measurement

Tab. 1: Descriptive characteristic of participants with ActiGraph GT3X+

	Age (years) Mean (SD)	Height (cm) Mean (SD)	Weight (kg) Mean (SD)	BMI (kg/m ²) Mean (SD)
Total sample (n=58)	20.5 (5.1)	172.9 (0.9)	72.2 (15.9)	23.9 (4.4)
Boys (n=25)	20.6 (2.9)	179.8 (0.1)	76.6 (13.9)	23.5 (3.4)
Girls (n=33)	21.3 (6.3)	166.5 (0.1)	68.9 (16.9)	24.2 (5.2)

Results

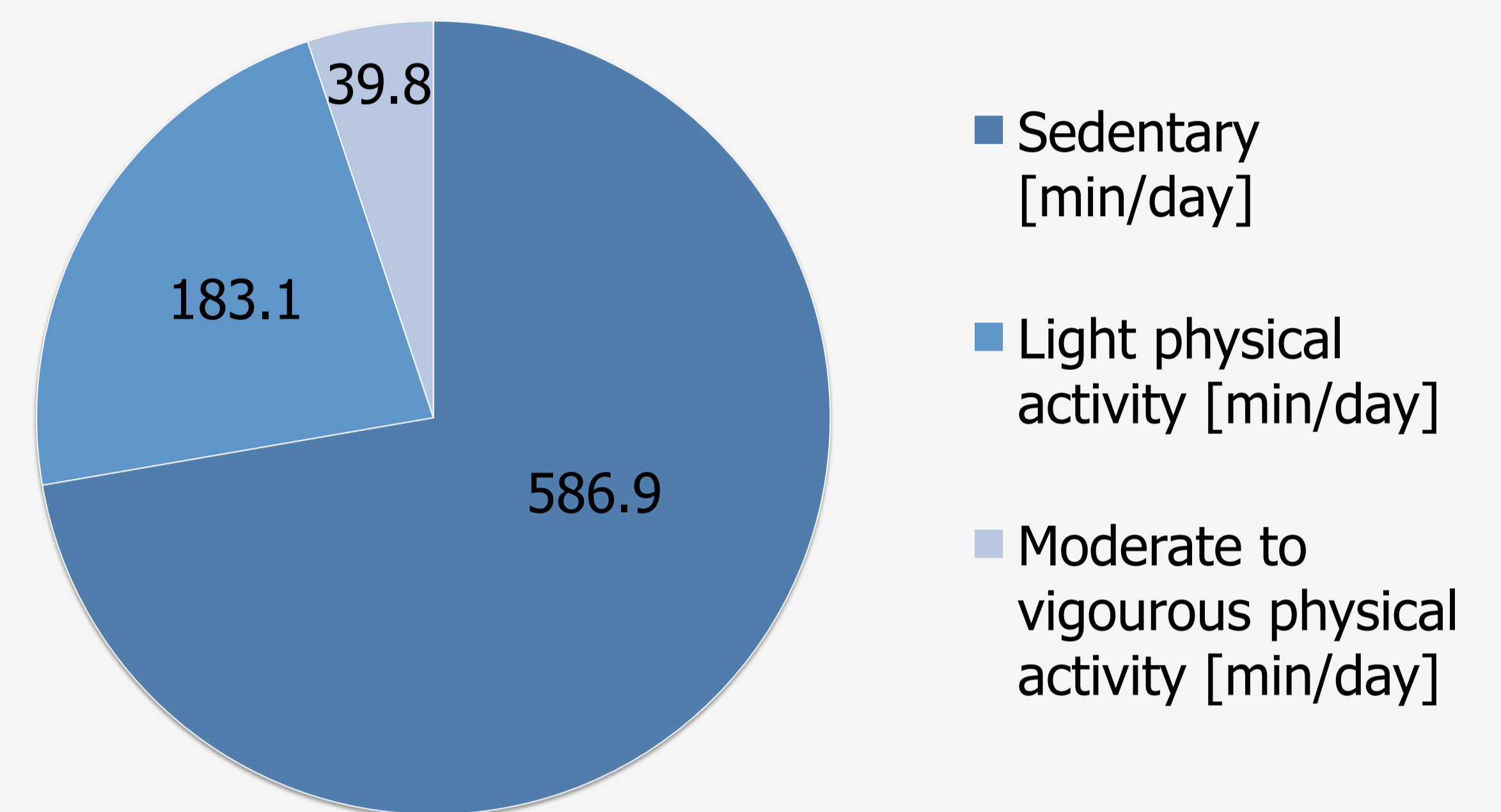


Fig.2: Daily Time Allocations of vocational school pupils

- Pupils spent 39.8 minutes per day in MVPA
- Total sedentary time was 586.9 minutes a day
- 183.1 minutes a day were spent in light intensity PA
- Step counts were 7688 per day

Tab. 2: Daily minutes of activity at various levels of intensity and daily step counts

	Total	Boys	Girls
	Median (25th;75th percentile)		
Sedentary (min/day)	586.9 (543;646)	564.3 (523;620)	617.5 (547;669)
LPA (min/day)	183.1 (145;207)	193.9 (106;339)	178.8 (141;205)
MVA (min/day)	39.8 (32;53)	48.9 (7;91)	41.7 (30;51)
VPA (min/day)	0.9 (0;2)	3.2 (0;23)	0.8 (0;2.4)
MVPA (min/day)	41.7 (35;56)	52.1 (7;106)	40.1 (31;52)
Step counts per day	7688 (6059;9031)	8484.1 (3618;14602)	7350.0 (5558;8346)

LPA, light physical activity; MPA, moderate physical activity; VPA, vigorous physical activity; MVPA, moderate to vigorous physical activity

Discussion

Our findings showed that the majority of the pupils meet the WHO recommendation of PA. However, pupils did not achieve the recommendations of 10.000 steps a day. Therefore, it is still important to promote PA. Additionally, our study showed a high prevalence of SB. Regarding the fact that SB are independently associated with a range of health outcomes the focus should be placed on reducing SB. Results should be interpreted as preliminary for this target group since our sample was small and inclusion criteria of two valid measurement days makes it difficult to draw more solid conclusions.

References

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