

# IMPACT OF HIGH SCHOOL ATHLETIC PARTICIPATION ON PHYSICAL ACTIVITY IN COLLEGE STUDENTS

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## Abstract

Role identities, such as athletic identity, have been used as helpful concepts when understanding an individual's behavior. It has been reported that students who consider themselves athletic spend more time engaged in moderate to vigorous physical activity (MVPA). Purpose: The purpose of this study was to determine if a difference existed in MVPA and average daily step count between college students who were identified as student athletes in high school and those who were not. Methods: Subjects at a small, commuter-based campus completed a demographic survey. Subjects were excluded if they participated in collegiate athletics. Each subject wore an accelerometer (Actigraph GT3X, Pensacola FL) around their waists at the anterior axillary line of the right hip during all waking hours for seven consecutive days. Independent sample t-tests were used to determine whether differences existed in time spent in MVPA and average daily steps between groups. Results: There was no significant difference in MVPA and steps between those who participated in high school athletics ( $n=40$ ,  $264.38 \pm 146.44$  min/wk and  $7109.07 \pm 3097.25$  steps/day) and those that did not ( $n=26$ ,  $246.73 \pm 129.99$  min/wk and  $6832.22 \pm 2990.42$  steps/day),  $p=0.619$  and  $p=0.720$ , respectively. Conclusions: This study showed no difference between previous high school athletes and those that did not previously participate in high school athletics. This may be attributed to the lack of organized sport opportunities and a reduction in athletic identity during college.

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## PURPOSE & HYPOTHESIS

- It has been reported that students who identify themselves as an athlete are more likely to participate in physical activity, regardless of organized athletic participation.
- The purpose of this study was to determine if a significant difference existed in MVPA and average daily step count between college students who were identified as student athletes in high school and those who were not.
- We hypothesized that students who were identified as previous high school athletes would show a significantly greater level of MVPA and average daily steps.

## METHODS

### Participants

- 66 full-time students 18-25y
- Men( $n=29$ ) and women( $n=37$ )
- Subjects included students from a small, southern, commuter-based campus.
- Any students who were pregnant or participated in collegiate sports were excluded.
- Based on the demographic survey, students were categorized by self reported participation in high-school athletics.

### DXA Scan

- Body composition was measured by dual-energy x-ray absorptiometry (DXA) using a GE Lunar iDXA (Waukesha, Wisconsin)

### Demographic Survey

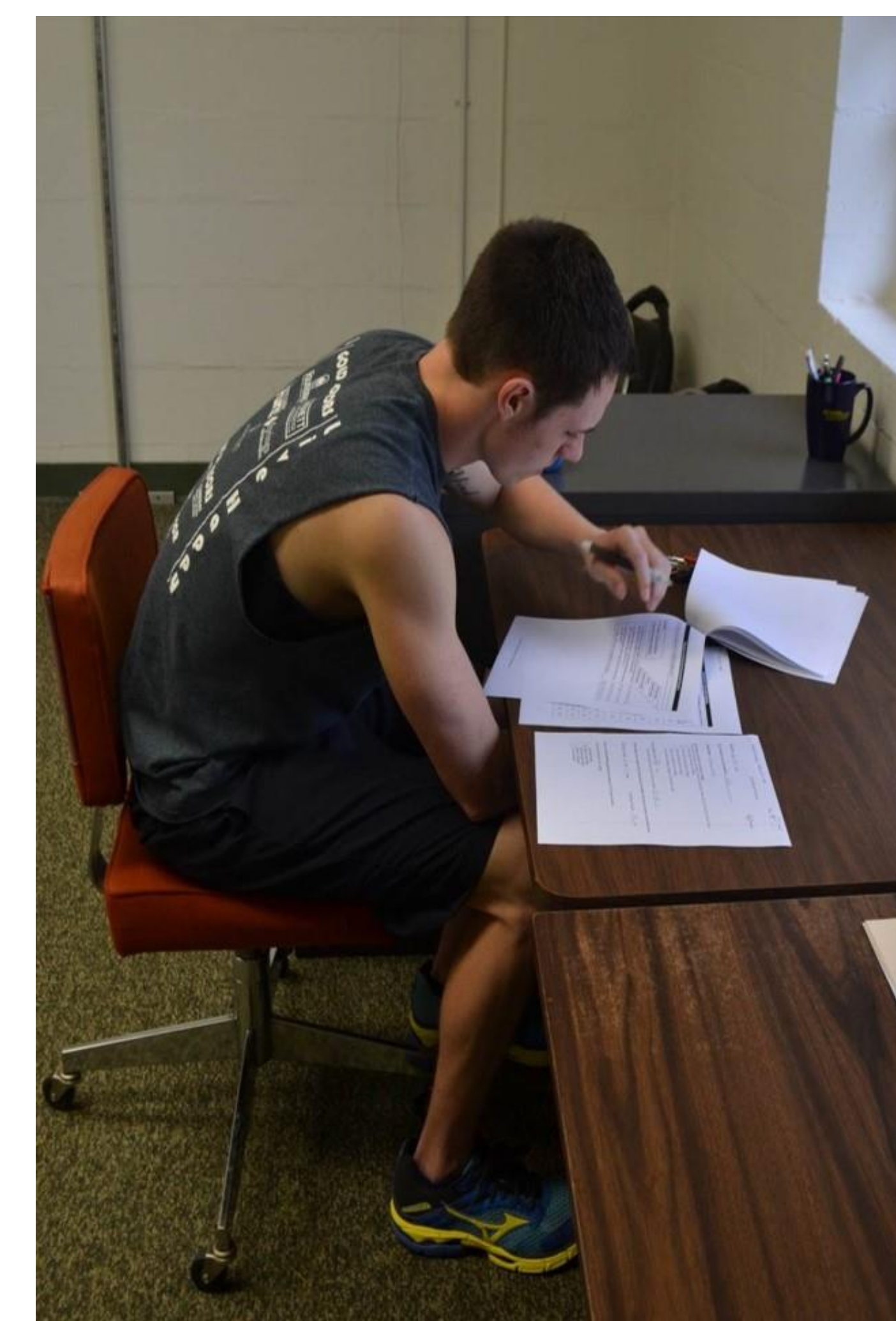
- Subjects completed a demographic survey identifying whether they participated high school sports.
- This survey also included age, ethnicity, and weekly physical activity.

### Physical Activity Measurements

- Subjects were instructed to wear an assigned accelerometer (Actigraph, GT3X, Pensacola, Florida) for all waking hours for 7 consecutive days.
- Accelerometers were worn on the anterior axillary line of the right hip.
- Subjects also kept track of a daily time log of when they put the accelerometer on that morning and what time they took it off that night.

### Data Analysis

- Independent sample t-tests were used to determine whether differences existed in time spent in MVPA and average daily steps between groups.



## RESULTS

Table 1. Descriptive characteristics of Participants

	Athlete (n = 40)	Non-athlete (n = 26)
Age (yr)	19.23 ± 1.23	19.46 ± 1.70
Weight (kg)	68.60 ± 16.39	74.82 ± 18.34
Height (cm)	168.72 ± 8.69	168.82 ± 7.45
DXA Body Fat (%)	27.66 ± 7.13	32.60 ± 10.20
BMI (kg/m <sup>2</sup> )	23.92 ± 4.52	26.17 ± 5.77
MVPA (min/week)	264.38 ± 146.44	246.73 ± 129.99
Average Daily Step count (steps/day)	7109.07 ± 3097.25	6832.22 ± 2990.42

- There was no significant difference found in MVPA or average daily step count despite previous high school athletic participation.

## CONCLUSIONS

- The transition from high school to college academics can often be difficult. Subjects may have spent more time independently studying rather than being physically active.
- We were limited in this study due to a small sample size.
- This study was part of a larger project where athletic identity was not the main focus. We did not include an Athletic Identity Scale (AIS) to gauge the subjects' relationship with athletic identity.
- In future studies, an AIS will help to determine the strength of athletic identity of a subject.
- It is possible that a sport specific difference could exist in physical activity levels after high school.

## REFERENCES

- Downs, A., & Ashton, J. (2011). Vigorous Physical Activity, Sports Participation, and Athletic Identity: Implications for Mental and Physical Health in College Students. *Journal of Sport Behavior*, 34(3), 237.
- Downs, A., Hoomissen, J., Lafrenz, A., & Julka, D. (2014). Accelerometer-Measured Versus Self-reported Physical Activity in College Students: Implications for Research and Practice. *Biology Faculty Publications and Presentation*, 10.