

# The Contribution of Work Activity in meeting Recommended U.S. Physical Activity Levels Among Patient Care Unit and Construction Workers: Preliminary Pilot Study Findings



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## ABSTRACT

**INTRODUCTION:** While construction and patient care unit (PCU) workers are employed in physically demanding jobs, the contribution of their physical activity while at work in meeting recommended U.S. levels of physical activity (PA) is unknown.

**PURPOSE:** To determine and compare the minutes of moderate and vigorous levels of physical activity while at work in and between PCU and construction workers.

**METHODS:** Waist-mounted accelerometers (ActigraphGT3X, LLC; Ft. Walton Beach, FL) provided seven consecutive days of physical activity from a convenience sample of patient care unit (n=48) workers from two acute care hospital in 2011 and currently, from construction workers (n=7) with the goal of collecting data from a total of 60 construction workers from 5 commercial construction sites by March 2013. Participants completed daily logs documenting the hours at work. Accelerometer data while at work were parsed and from these data minutes spent for different levels of PA based on definitions of intensity levels were calculated.

**RESULTS:** PCU workers had PA levels while at work on average of 0 minutes of vigorous, 63 minutes of moderate, 1306 minutes of light and lifestyle, and 1084 minutes of sedentary PA per day corresponding to 0%, 1%, 45%, and 54% of the working time for their work week. Preliminarily, for the 7 construction worker collected so far PA levels while at work on average 0 minutes of vigorous, 315 minutes of moderate, 1250 minutes of light and lifestyle, and 795 minutes of sedentary PA per day corresponding to 0%, 14%, 53%, and 34% of the total PA minutes contributed from the workday.

**CONCLUSION:** Preliminary results suggest that construction workers achieve much more moderate levels of physical activity at work compared to PCU workers surpassing by approximately double the weekly-recommended levels of moderate of 150 minutes. Messages for improving and promoting cardiovascular health for these two groups or workers must consider these results and contrasts.

## Physically Demanding Jobs and Health

- Physical inactivity increases risk of morbidity.
- However, physically demanding jobs have increased risk of all cause morbidity (mortality).
- Patient Care Unit (PCU) and Construction workers are considered to have physically demanding jobs and high rates of all course mortality.

## How active are these jobs?

- **Objective:** Determine minutes of moderate and vigorous levels of physical activity at work in for PCU and construction workers.



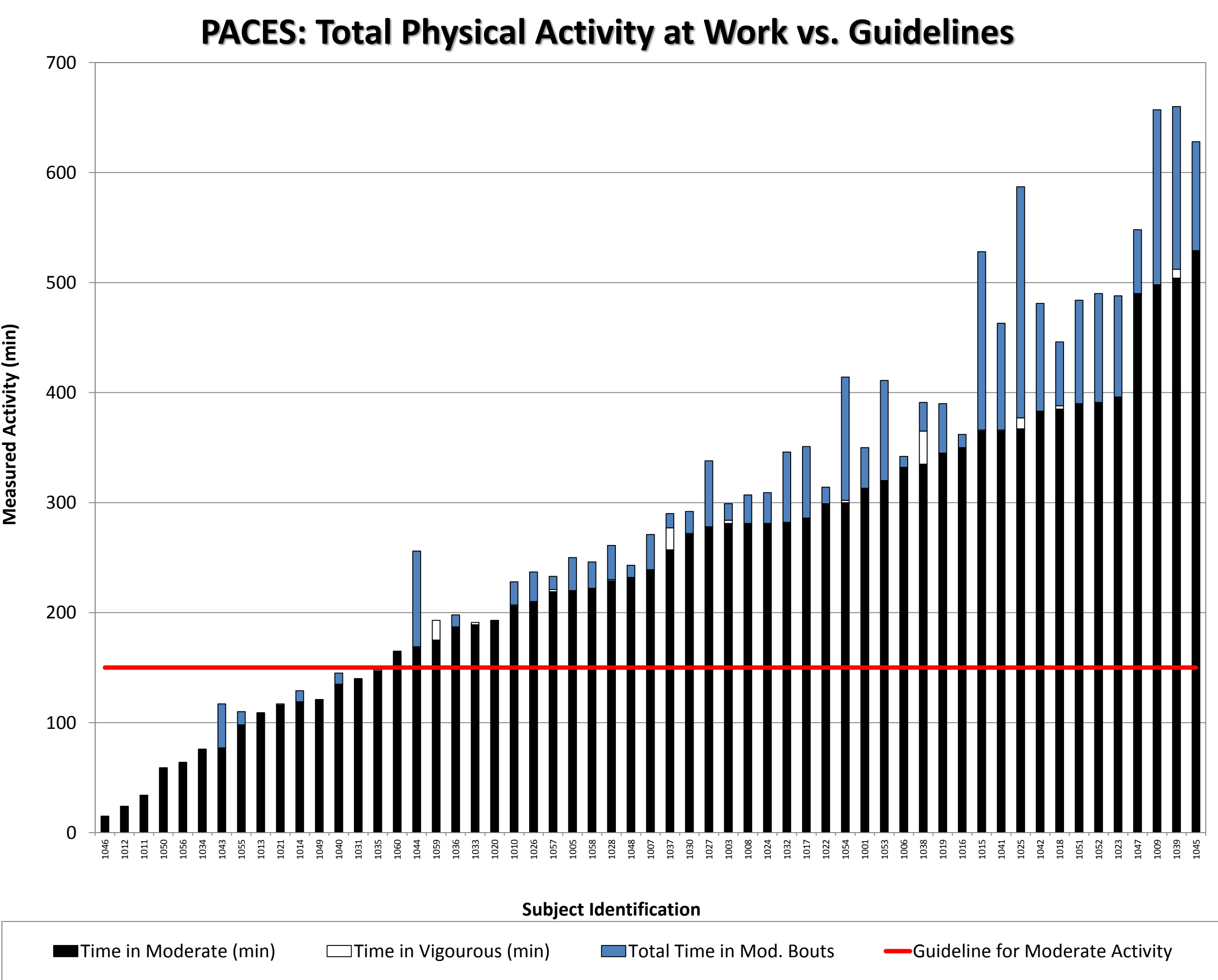
## Accelerometer measures at work

- Cross-sectional observational study of a convenient sample of patient care unit (n=48) workers from two acute care hospital in 2011 and from construction workers (n=57) from 5 commercial construction sites.
- Participants wore a waist-mounted Actigraph accelerometer for one week at work and outside of work.
- Parsed data for At Work and Outside of Work.
- U.S. physical activity guidelines recommend adults engage in 150 minutes of moderate or 75 minutes of vigorous activity per week.

Construction workers get on average 231 minutes of moderate activity at work. Patient Care Unit Workers get on average 30 minutes of moderate per week

Table 1– Across worker distribution of directly measured PA while at work

	Construction workers (N=57)					Patient Care Unit workers (N=48)					t test
	Mean	(SD)	P <sub>25</sub>	P <sub>50</sub>	P <sub>75</sub>	Mean	(SD)	P <sub>25</sub>	P <sub>50</sub>	P <sub>75</sub>	p value
# Work days	4	(2)	3	4	5	4	(1)	4	5	5	
Total minutes	1944	(814)	1539	2022	2415	2423	(685)	2036	2487	2930	
At Work (min)											
Sedentary	720	(680)	352	556	901	1308	(485)	939	1322	1597	<0.001
Light & Lifestyle	989	(431)	692	1092	1304	1084	(386)	852	1123	1384	0.3
Moderate	231	(127)	135	220	332	30	(32)	8	17	42	<0.001
Vigorous	2	(5)	0	0	1	0	(1)	0	0	0	0.1
At work (%)											
Sedentary	34	(18)	21	28	42	54	(12)	45	52	58	<0.001
Light & Lifestyle	53	(14)	49	56	62	45	(11)	41	47	53	0.003
Moderate	13	(7)	8	12	17	1	(1)	0	1	2	<0.001



Messages for improving and promoting worker health needs to consider activities at work

- Compared to PCU workers, construction workers achieve much more moderate levels of physical activity at work.

## REFERENCES

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