

Workplace Wellness Exercises For Individuals Who Use Wheelchairs

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Abstract

Purpose: To pilot test worksite wellness exercises for individuals who use wheelchairs for mobility.

Method: Five worksite wellness exercises were chosen from surveys including: air punches, arm circles, chair push-ups, forward/lateral raises, and desk push-ups. The five exercises were pilot tested using the COSMED K4 portable metabolic cart in individuals who use wheelchairs of working age. Participants first rested for five minutes to measure resting energy expenditure. Exercises were performed for intervals of 60 seconds of work and 60 seconds of rest in a randomized order. Feasibility of worksite wellness exercise movement performance and trends in changes in energy expenditure were analyzed across the entire sample.

Results: Participants included 14 individuals who use wheelchairs for mobility between 18 and 60. On average resting energy expenditure equaled 1.33(SD= 0.35) Mets and 1.64(SD=0.39) Kcal/min and exercise energy expenditure equaled 2.38(SD=0.81) Mets and 3.08(SD=1.06) Kcal/min. Greatest increases shown in chair push-ups and desk push-ups. Three participants were unable to perform chair push-ups due to injuries or strength. Therefore, performing worksite wellness exercises for 13 minutes per workday could result in an extra 100 Kcal/week expended per week.

Conclusions: Worksite wellness exercises are a feasible option for energy expenditure in the workplace for individuals who use wheelchairs. Specific worksite wellness exercises are needed to suit their needs that could also be performed outside the workplace as an exercise regimen. This was a small, feasibility pilot study and larger studies need to be done to show reliability and validity of these exercises across diverse populations of individuals who use wheelchairs for mobility.

Background

Individuals who use wheelchairs for mobility face various barriers to physical activity during the workday. Worksite wellness exercises can be conducted during the workday to increase energy expenditure during sedentary time sitting at a desk.¹ Research in the general population shows promising results for worksite wellness exercises conducted at specific intervals and intensities throughout the day increasing daily energy expenditure, which over an extended time period could have a significant impact on weight management.²

Method

Qualitative Survey (N=5): Individuals who use wheelchairs and work full time

1. What kinds of exercise do you do or enjoy doing?
2. Which, if any, exercises do you currently do at your desk during the day?
3. Do you engage in exercise/physical activity during the work day?
4. Do you have any ideas of exercises a person who uses a wheelchair could do at their desk or during the work day?
5. Have you ever participated in a workplace wellness program? If so, did you feel the program met the needs of wheelchair users?
6. What inclusive components would you like to see in a workplace wellness or public health campaign?
7. When you hear people talking about getting 10,000 steps a day or tracking their steps on an activity tracker what would you prefer they say? Please suggest changes that would be more meaningful to you.

Results

Table 1. Mean Resting and Exercise Energy Expenditure and Mets

OVERALL	Mets	Kcal/min	SD Mets	SD Kcal
Resting	1.33	1.64	0.35	0.39
Air Punches	2.19	2.77	0.90	1.05
Arm Circles	2.33	3.03	0.80	1.11
Chair Push-ups	2.66	3.30	0.89	0.89
Forward/Lateral raises	2.35	3.11	0.70	1.08
Desk Push-ups	2.40	3.22	0.73	1.15

Exercises

Arm Circles



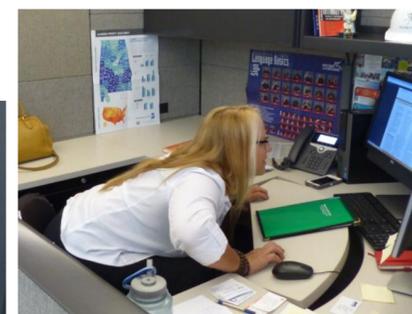
Chair Dips



Forward/Lateral Raises



Desk Push-ups



Air Punch



- Our findings support encouragement of workplace wellness programs to be inclusive of all individuals including those who use a wheelchair.
- Wheelchair-specific exercises for 13 minutes per workday could result in an extra 100 Kcal/week expended per week.
- Chair push-ups and desk push-ups show the greatest energy expenditure in a range of disability types.
- When walking or pushing is not an option, effective exercises performed at a desk are a possible substitute.
- Workplace wellness programs should incorporate wheelchair specific examples for increasing energy expenditure during the day. This is a first step in identifying the most effective exercises.
- Larger, randomized studies are needed to show reliability and validity of these exercises across diverse populations of

References

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2. Shephard, Roy J. "Worksite fitness and exercise programs: a review of methodology and health impact." *American Journal of Health Promotion* 10.6 (1996): 436-452.

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