

Let's Make Moves: An Exploration of Occupational Therapy Interventions for Sedentary Workers
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Objectives of Presentation:

- 1) Define wellness and its significance for employees in sedentary work environments.
- 2) Examine environments that promote sedentary work habits and determine adaptations to increase physical activity.
- 3) Choose interventions within the scope of OT practice that address sedentary behavior in the work setting.

PICO: What interventions within the scope of occupational therapy practice increase overall wellness in adult office workers?

Methods and Search Terms:

- 5145 articles identified through databases searched: PubMed (3118) Ovid (1527) CINAHL (500);
- 17 articles included in syntheses following title, abstract and full text screens

P: Office workers; White collar workers; Sedentary; Sedentary workers; Non-medical public or private facilities [MeSH]; corporate workers; Desk work; administ*

I: occupational ther*; ergonomic*; “Environmental adaptations”; Interventions; Adaptations; Reward; Incentive; Motivation; “Self-management”; Self care; “Stress management”; “Time management”; Schedule; Planning; “Sleep Hygiene”

O: Wellness; Wellbeing; “Occupational wellness”; “Emotional wellness”; “Physical wellness”; “Mental wellness”; “Quality of Life”; “Occupational health”; “Psychological well-being”; “Work-life balance”; “Decrease stress”; “Improved mood”

Results:

Theme	1. Education Plus Intervention	2. Ergonomics	3. Work Wellness Programs	4. Technology	5. Physical Activity
Intervention	-Pedometer + education on PA and body composition (Chae et al., 2015) - ActivPAL + computer-tailored intervention with feedback and tips (DeCocker et al., 2016) - Individually-based behavior modification + education on sleep hygiene (Nishinoue et al., 2012) - Exertime Software + education on risks of prolonged sitting (Pedersen et al., 2014) - Workplace Fitness and Education Program + weekly lectures and readings (Vilela et al., 2015)	- Activity Based Work (ABW) Environments (Foley et al., 2016) - Bike Desks (Torbeyns et al., 2016) - Sit-to-Stand Desks (Miyachi et al., 2015, Pronk et al., 2012) - Stand Meeting Tables (Danquah et al., 2017) - Visual Cues (Danquah et al., 2017) - Office Walking Groups (Danquah et al., 2017)	<u>Employee Perspectives:</u> - Incentive vs. Penalty Programs (Batorsky, 2016) - Barriers to Physical Activity Programs (Paguntalan, 2016) - Acceptability and Feasibility (DeCocker, 2015) <u>Intervention Programs:</u> - Computer-Tailored Intervention Program (DeCocker, 2016) - “3000 More Steps” Program (Chae, 2015) - Booster Break Intervention (Taylor, 2016) - Workplace Fitness and Education Program (WFEP) (Vilela, 2015)	A) <u>Computer Prompts:</u> - Computer prompts at intervals (Evans et al., 2012) (Pedersen et al., 2014) - Computer tailored feedback (DeCocker et al., 2016) B) <u>Mobile phone:</u> - Text messages sent to assess participants level of physical activity in the moment (Pronk et al., 2012) - Mobile phone app utilized to record activities (Cole et al., 2015)	A) <u>Walking</u> (Bergouignan et al., 2016) (Brown et al., 2014) (Taylor et al., 2016) B) <u>Standing</u> (Pedersen et al., 2014) (Pronk et al., 2012) (Miyachi et al., 2015) C) <u>Interval Training</u> (Pedersen et al., 2014) (Vilela et al., 2015)
Evidence Strength	Strong Evidence	Strong Evidence	Moderate Evidence	A) Moderate B) Insufficient	A) Strong B) Moderate C) Strong

References

American Occupational Therapy Association. (2017). Work & industry. Retrieved from <https://www.aota.org>
 American Occupational Therapy Association. (2014). *Guidelines for systematic reviews*. Unpublished manuscript.

- American College of Sports Medicine. 2017. ACSM issues new recommendations on quantity and quality of exercise. ACSM. Retrieved from <http://www.acsm.org/about-acsm/media-room/news-releases/2011/08/01/acsm-issues-new-recommendations-on-quantity-and-quality-of-exercise>
- Batorsky, B., Taylor, E., Huang, C., Liu, H., & Mattke, S. (2016). Understanding the relationship between Incentive design and participation in U.S. workplace wellness programs. *American Journal of Health Promotion, 30*(3). doi: 10.4278/ajhp.150210-QUAN-718
- Bergouignan, A., Legget, N., Kealey, E., Nikolovski, Groppe, J. Jordan, C., O'Day, R., Hill, J., & Bessesen, D. Effect of frequent interruptions of prolonged sitting on self-perceived levels of energy, mood, food cravings, and cognitive function. *International Journal of Behavioral Nutrition and Physical Activity, 13*(113). doi: 0.1186/s12966-016-0437-z
- Brown, D. K., Barton, J. L., Pretty, J., & Gladwell, V. F. (2014). Walks4Work: Assessing the role of the natural environment in a workplace physical activity intervention. *Scandinavian Journal of Work, Environment & Health, 40*(4), 390-399.
- Chae, D., Kim, S., Park, Y., & Hwang, Y. (2015). The effects of an academic--workplace partnership intervention to promote physical activity in sedentary office workers. *Workplace Health & Safety, 63*(6), 259-266. doi:10.1177/2165079915579576
- Cole, J. A., Tully, M. A., & Cupples, M. E. (2015). "They should stay at their desk until the work's done": A qualitative study examining perceptions of sedentary behaviour in a desk-based occupational setting. *BMC Research Notes, 8*(683), 1-9. doi:10.1186/s13104-015-1670-2
- Corlis, J. (2015). Too much sitting linked to heart disease, diabetes, premature death. Harvard Health Blog. Retrieved from <http://www.health.harvard.edu/blog/much-sitting-linked-heart-disease-diabetes-premature-death-201501227618>
- Danquah, I. H., Kloster, S., Holtermann, A., Aadahl, M., Bauman, A., Ersboll, A.K., and Tolstrup, J.S. (2017). Take a stand!—a multi-component intervention aimed at reducing sitting time among office workers—a cluster randomized trial. *International Journal of Epidemiology, 128-140*. doi:10.1093/ije/dyw009
- DeCocker, K., DeBourdeaudhuij, I., Cardon, G., & Vandelanotte, C. (2016). The effectiveness of a web-based computer-tailored intervention on workplace sitting: A randomized controlled trial. *Journal of Medical Internet Research, 18*(5).
- DeCocker, K., Veldeman, C., DeBacquer, D., Braeckman, L., Owen, N., Cardon, G., & DeBourdeaudhuij, I. (2015). Acceptability and feasibility of potential intervention strategies for influencing sedentary time at work: Focus group interviews in executives and employees. *International Journal of Behavioral Nutrition and Physical Activity, 12*(22), 1-11. doi:10.1186/s12966-015-0177-5
- Evans, R. E., Fawole, H. O., Sheriff, S. A., Dall, P. M., Grant, P. M., & Ryan, C. G. (2012). Point-of-choice prompts to reduce sitting time at work: A randomized trial. *American Journal of Preventive Medicine, 43*(3), 293-297.
- Foley, B., Engelen, L., Gale, J., Bauman, A., Mackey, M. (2016). Sedentary Behavior and Musculoskeletal Discomfort Are Reduced When Office Workers Trial an Activity-Based Work Environment. *Journal of Occupational Environmental Medicine, 58*(9). doi: 10.1097/JOM.0000000000000828
- Kobau, R., Sniezek, J., Zack, M. M., Lucas, R. E., & Burns, A. (2010). Well-being assessment: An evaluation of well-being scales for public health and population estimates of well-being among U.S. adults. *Health and Well being, 2*(3), 272-297.
- Law, M., Stewart, D., Letts, L., Pollock, N., Bosch, W. M., & Westmorland, M. (1998). Qualitative review form guidelines. *Hamilton, Ontario: McMaster University*.
- Lee, I. M., Shiroma, E. J., Lobelo, F., Puska, P., Blair, S. N., Katzmarzyk, P. T., & Lancet Physical Activity Series Working Group. (2012). Effect of physical inactivity on major non-communicable diseases worldwide: An analysis of burden of disease and life expectancy. *Lancet (London, England), 380*(9838), 219-229. doi:10.1016/S0140-6736(12)61031-9
- Letts, L., Wilkins, S., Law, M., Stewart, D., Bosch, J., & Westmorland, M. (2007). Guidelines for critical review form: Qualitative studies (Version 2.0). *McMaster University Occupational Therapy Evidence-Based Practice Research Group*.
- Levine, J. (2014). Killer chairs: How desk jobs ruin your health. *Scientific American*. Retrieved from <https://www.scientificamerican.com/article/killer-chairs-how-desk-jobs-ruin-your-health/>
- Marcus, M. (2016). How to reduce the health risks of sitting all day. *CBS News*. Retrieved from <http://www.cbsnews.com/news/one-hour-of-exercise-reverses-health-risks-of-sitting-all-day/>
- Nishinoue, N., Takano, T., Kaku, A., Eto, R., Kato, N., Ono, Y., & Tanaka, K. (2012). Effects of sleep hygiene education and behavioral therapy on sleep quality of white-collar workers: A randomized controlled trial. *Industrial Health, 50*(2), 123-131. doi:JST.JSTAGE/indhealth/MS1322
- Paguntalan, J. C., & Gregoski, M. (2016). Physical activity barriers and motivators among high-risk employees. *Work (Reading, Mass.), 55*(3), 515-524. doi:WOR2424
- Pedersen, S. J., Cooley, P. D., & Mainsbridge, C. (2014). An e-health intervention designed to increase workday energy expenditure by reducing prolonged occupational sitting habits. *Work (Reading, Mass.), 49*(2), 289-95.
- Picavet H., Pas L., Oostrom S., Ploeg H., Verschuren W., & Proper, K. (2016) The Relation between Occupational Sitting and Mental, Cardiometabolic, and Musculoskeletal Health over a Period of 15 Years - The Doetinchem Cohort Study. *Plos One, 11*(1). doi:10.1371/journal.pone.0146639
- Pronk, N. P., Katz, A. S., Lowry, M., & Payfer, J. R. (2012). Reducing occupational sitting time and improving worker health: The take-a-stand project, 2011. *Preventing Chronic Disease, 9*, E154. doi:10.5888.pcd9.110323

- Social Security Administration (SSA). (1996). SSR 96-9p: Policy interpretation ruling titles ii and xvi: Determining capability to do other work--implications of a residual functional capacity for less than a full range of sedentary work. Retrieved from https://www.ssa.gov/OP_Home/rulings/di/01/SSR96-09-di-01.html
- Taylor, W. C., Paxton, R. J., Shegog, R., Coan, S. P., Dubin, A., Page, T. F., & Rempel, D. M. (2016). Impact of booster breaks and computer prompts on physical activity and sedentary behavior among desk-based workers: A cluster-randomized controlled trial. *Preventing Chronic Disease, 13*, E155. doi:10.5888/pcd13.160231
- Torbeyns, T., de Geus, B., Bailey, S., De Pauw, K., Decroix, L., Van Cutsem, J., & Meeusen, R. (2016). Bike desks in the office: Physical health, cognitive function, work engagement, and work performance. *Journal of Occupational and Environmental Medicine, 58*(12), 1257-1263.
- Vilela, B. L., Benedito Silva, A. A., de Lira, C. A., & Andrade Mdos, S. (2015). Workplace exercise and educational program for improving fitness outcomes related to health in workers: A randomized controlled trial. *Journal of Occupational and Environmental Medicine, 57*(3), 235-240. doi:10.1097/JOM.0000000000000393