The Math of Microbreaks

Impact of Sedentary Behavior:

If we stay this sedentary, nearly 500 million people will develop heart disease, obesity, diabetes or other noncommunicable diseases this decade, costing governments $27 billion annually [*World Health Organization,* 1].

Uninterrupted sitting time increases your chance of early death [*CNN Health,* 2], 18% for men and 37% for women [*American Journal of Epidemiology,* 3]. This impact is not offset by regular exercise.

Sedentary behavior and physical inactivity are among the leading modifiable risk factors worldwide for cardiovascular disease and all-cause mortality [*Circulation Research,* 10].

Those who spend long hours in sedentary activity are 90% more likely than those who don't to develop type 2 diabetes [*LA times,* 4].

Research shows that people sit an average of 12.3 hours of a 16 hour day [*CNN Health,* 2].

Work-related musculoskeletal disorders affect 20–60% of all office workers worldwide, leading to loss of working days and less productivity. *[Cogent Engineering Journal 5].*

In the United States, musculoskeletal conditions resulted in as high as 74% of total work days lost. *[Cochrane Database of Systematic Review, 6].*

Musculoskeletal pain is the primary cause of sickness absence, lost productivity and early retirement across Europe and the United States [*BMC Public Health,* 7].

Microbreak Benefits to Your Body:

Movement microbreaks throughout the day reduce musculoskeletal pain especially in the neck, wrists, shoulders, and lower and upper back [*Animals,* 8].

Movement microbreaks lead to less musculoskeletal discomfort, better cardiometabolic health outcomes, more activity throughout the day, and better sleep [*International Journal of Environmental Research & Public Health,* 9].

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Microbreak Benefits to your Mind:

Aerobic exercise for two minutes improved attention, concentration, learning and memory functions for up to two hours after the break. [*Translational Sports Medicine,* 1].

Breaking up periods of sitting can increase reaction times, improve working memory and executive functions, and the improved energy expenditure leads to lower odds of cognitive impairment, faster information processing, and a significant reduction in fatigue [*BMC Musculoskeletal Disorders*, 2].

Microbreaks are beneficial for the worker's well-being and job performance, even if the total work time is reduced (a 10% reduction) because of the breaks *[PLOS Science Journal, 3]*.

Financial traders who are better at detecting their heartbeats (a skill that is improved through movement microbreaks) made more profitable investments and lasted longer in the notoriously volatile profession *[New York Times, 4]*.

Employees taking movement microbreaks (by choice, but were encouraged to take one every hour) experienced significantly lower job-related stress compared to their counterparts who maintained their regular sitting habits [*Frontiers in Public Health, 6].*

Microbreaks have been shown to improve cognitive performance [*Cogent Engineering,* 7], working memory, executive functions, information processing, reaction times [*BMC Musculoskeletal Disorders*, 2], and self-efficacy in dangerous and painful situations [Animals, 8].

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Microbreak Benefits to your Mood:

Participants were in a better mood on days when they took movement breaks, reporting more positive emotions, fewer negative feelings and more energy, reporting an average 25% reduction in fatigue [*LA Times*, 1].

Microbreaks lead to employees feeling more refreshed, vigorous [*PLoS ONE,* 2], happy, energetic [*Business and Psychology,* 3], and less stressed [*Journal of General Psychology,* 4], performing better at routine and creative tasks [*PLoS ONE,* 2], experiencing lower levels of burnout and exhaustion [*Journal of General Psychology,* 4], and having higher levels of life satisfaction [*Business and Psychology,* 3] .

Engaging in synchronous group activities can build even stronger social ties and create a greater sense of well-being. Simply tapping fingers in sync increases generosity, trust and tolerance toward others. Even when separate groups who previously described one another negatively engaged in synchronous activity, they then expressed a greater sense of closeness and indicated more desire to see their partners again [*Scientific American,* 5].

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Microbreak Benefits as a Team:

Managers may not actively be against taking breaks but must encourage employees to take breaks and lead by example. Introducing microbreaks can reduce the guilt and anxiety of taking a long, structured break, and can create social engagement when taking the breaks as a team. [*Psychology & Health,* 1].

In a representative survey by Deloitte of 1,274 U.S. workers, 68% said they did not use the full value of the well-being resources their organizations offered because accessing programs was either too time-consuming, confusing, or cumbersome [*Harvard Business Review*, 2].

Microbreaks are a powerful way for employees to refresh and re-energize their workday without the strain or fear of taking long, structured breaks. Support from supervisors influences not only

employee's willingness to take breaks, but also increases the positive effects of microbreaks, leading to higher levels of recovery [*Current Psychology,* 3].

Physical activity significantly impacts individual emotions (happiness and depression) and prosocial attitudes (social trustworthiness), increasing happiness and reducing depression [*Social Behavior & Personality*, 4].

Engaging in synchronous movement with others increases energy level and mood through fun non-work-related active breaks [*BMC Public Health*, 5].

Engaging in synchronous movement with others leads to higher ratings of tolerance, closeness, trust, and desire to see one another again while building stronger social ties [*Scientific American,* 6].

Workplace physical exercise performed together with colleagues improves social climate and vitality among workers with chronic musculoskeletal pain [*Medicine,* 7].

Group-based physical exercise at work contributed to building social capital within teams at the workplace [*Scandinavian Journal of Public Health,* 8].

Improvement of psychological and social factors from performing micro-exercise with colleagues at the workplace; including social climate, feelings of vitality and the ability to work together in teams [*Scientific Reports,* 9].

Micro-exercise performed at the workplace exhibit the potential to increase muscle strength, reduce musculoskeletal pain, prevent deterioration of work ability and improve psychosocial work factors, whereas micro-exercise performed at home yield no such benefits [*Scientific Reports,* 9].

As the general working population spend a large part of their life at work, the workplace represents an ideal arena for health promotion, where workers who are unable to find the time and motivation to do regular physical exercise during leisure time can perform micro-exercise together with their colleagues at the workplace instead [*Scientific Reports,* 9].

The more employees perceived their colleagues to encourage them to behave in healthy ways, the higher the employee's fruit and vegetable intake, and the more the employee was physically active [*BMC Public Health*, 10].

Higher frequency of workplace exercise is related to higher vigor of work engagement independently from physical activity and sedentary behavior [*Preventative Medicine Reports,* 11].

Workplace exercise improved work-related social capital compared to home exercise, so performing workplace exercise could enhance the resources of work engagement, such as social support at work. Additionally, social support is an important resource of work engagement not only at the individual level but also at the team level, indicating that conducting workplace exercise with co-workers may enhance team-level work engagement [*Preventative Medicine Reports,* 11].

Performing workplace exercise once or twice a week showed a positive association with vigor of work engagement [*Preventative Medicine Reports,* 11].

An emerging area of employee input into well-being implementation is well-being champion networks, which consist of volunteer employees who support teams on a “grassroots” level. As a point of contact for employees, they can be a source of peer support, which research suggests can build resilience, help prevent burnout, and aid in addressing the rising epidemic of loneliness at work [*Harvard Business Review*, 2].

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