



# Health and wellness among hospital staff: The results of the web-based MyHealthCheckup physical activity challenge.

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## BACKGROUND & STUDY OBJECTIVES

- Despite the positive impact of healthy lifestyle changes on chronic conditions such as cardiovascular disease (CVD), diabetes, and stress related illnesses, the quantity and quality of health and wellness programs available to health care professionals remains suboptimal.
- The objective of this research was to engage hospital workers in a web-based physical activity challenge to observe the impact on specific risk factors.

## STUDY DESIGN & METHODS

- Seven sites of the McGill University Health Centre recruited 50 employees each to form teams that competed against each other in an 8-week physical activity challenge using pedometers.
- At baseline and at 8-weeks follow-up CVD and diabetes risk factors, sleep, stress, and fatigue were measured.



TABLE 1: Changes in Risk Factors Following the Wellness Challenge

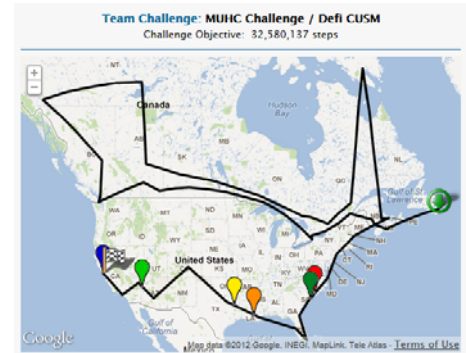
	Before	After
Number of employees re-evaluated = 238 (with lipids/glucose/risk measured n=172)		
Smoke cigarettes	4.6%	4.6%
Average total cholesterol (mmol/L)	5.21	5.11*
Average LDL cholesterol (mmol/L)	3.15	3.08*
Average HDL cholesterol (mmol/L)	1.59	1.58
Average Triglycerides (mmol/L)	1.08	1.02
Average total cholesterol/HDL ratio	3.46	3.41
Average fasting glucose (mmol/L)	5.11	5.08
Average systolic blood pressure (mmHg)	117	115**
Average diastolic blood pressure (mmHg)	77	76
Taking blood pressure medication	9%	7%
Average body mass index (kg/m <sup>2</sup> )	26.8	26.6**
Overweight or obese (BMI>27kg/m <sup>2</sup> )	43%	41%
Weekly physical activity (METs)	1134	1243
10-year cardiovascular risk	1.37%	1.30%
6-year diabetes risk	1.88%	1.74%
CVage	46.2	46.1
Sleep score	7.7	5.8***
Fatigue score	11.7	10.4***
Stress score	14.0	12.7***

\*\*\* P<0.0001; \*\* P<0.01; \* P<0.05

TABLE 2: Changes in Risk Factors for Risk Factor Subgroups

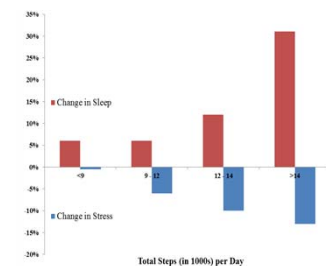
	First evaluation	Second evaluation
Hypertension at baseline (n=31)		
Systolic blood pressure (mmHg)	141	133**
Diastolic blood pressure (mmHg)	91	86**
Poor sleeper at baseline (n=28)	17.8	11.6****
Mild sleep problems at baseline (n=81)	10.7	7.7****
Above average stress at baseline (n=122)	18.4	16.0****
High fatigue at baseline (>75th percentile) (n=29)	18.1	14.7****
Low physical activity at baseline (<360 METs) (n=60)	132	622****

\*\*\*\* P<0.0001; \*\* P<0.01



- Among employees who had hypertension at baseline (n=31) there was a significant reduction in blood pressure (141/91 vs. 133/86; p<0.01).
- Among employees who were sedentary at baseline (n=60) there was a significant increase in weekly physical activity (132 vs. 622 METs; p<0.0001) and a 19% reduction in 10-year CVD risk (1.26% vs. 1.02%; p<0.01) due to significant decreases in total cholesterol, LDL cholesterol, and blood pressure.
- The greater the amount of physical activity, the bigger the improvements in sleep and stress scores (see figure 1).
- These positive results were observed despite the absence of prizes or monetary incentives.

FIGURE 1: Changes in Sleep and Stress Scores with Number of Steps



## CONCLUSIONS

- In conclusion, a web-based workplace physical activity challenge demonstrated not only cardiovascular benefits but numerous auxiliary benefits as well.
- There is a direct relationship between the amount of physical activity and the improvements in sleep and stress.



## RESULTS

- 309 employees agreed to participate in the project. The daily average physical activity for each participant was the equivalent of 12,857 steps over the duration of the challenge.
- Among the 238 employees (77%) who were re-evaluated following 8 weeks, there was a significant improvement in sleep (7.7 vs. 5.8; p<0.0001), fatigue (11.7 vs. 10.4; p< 0.0001), and stress (14.0 vs. 12.7; p<0.0001) (see Table 1).
- The results were particularly significant for employees who were poor sleepers or had above average stress or high fatigue at baseline (see Table 2).