



Dianne ACM Commissaris
Marjolein Douwes
Ernst AP Koningsveld

Office workers on the move; measures to stimulate physical activity at work



Measures to stimulate physical activity at work (selected by employees)

- go for a walk during lunch break;
- get your own coffee/tea instead of one person fetching for everybody;
- have bilateral meetings while walking outside;
- cycle to clients on company bikes;
- exercise during short computer breaks;
- play table-tennis during breaks.

Expected health effects

Measure	Fulfilling recommendation:				Comments
	1a	1b	2a	2b	
Lunch walks	partly	yes	yes	yes	estimated half hour/week makes 1/5th of Recommendation 1a
Get your own coffee/tea	very little	yes	no	yes	walking duration too short and intensity too low; short interruption of static loading neck/shoulder muscles
Bilateral outdoor walks	partly	yes	yes	yes	walking duration okay, intensity questionable; interruption of static loading neck/shoulder muscles
Cycle to clients	partly	yes	?	?	cycling duration unknown; actual use unknown; unfeasible if raining; effect on neck/shoulder muscle loading unknown
Active computer breaks	no	yes	maybe	yes	interruption of static loading neck/ shoulder muscles; duration and participation unknown
Play table-tennis	partly	yes	yes	yes	playing duration and intensity okay; interruption of static loading neck/ shoulder muscles; outside location troublesome

Context

Seated office work is characterised by little or no physical activity, and thus associated with 1) chronic diseases like cardiovascular disorders and type II diabetes, and 2) musculo-skeletal disorders in the neck/shoulder area. To prevent these health risks, measures should be taken that: 1) increase physical activity of the whole body, and 2) restrict the duration of low-intensity static loading of neck/shoulder muscles. We promote this to be done **at work itself!**

Pilot study

TNO and Achmea, a Dutch insurance company, conducted a pilot study. A division of 15 employees was involved and a participatory ergonomics approach was applied:

session 1) identify division specific problems; 2) come up with measures; 3) identify expected effects, costs and benefits of selected measures.

Expected benefits:

- slight sick-leave reduction (should drop from 5% to 4,4% to save € 3.497);
- positive effect on recruitment and preservation of clients; slight positive effect on internal cooperation and external communication; very limited effect on annual turnover (should increase with 0,35% to gain € 3.497);
- positive effect on employee satisfaction; effect on employee turnover (costs circa € 12.000/case) cannot be estimated validly.

Although benefits could not be quantified, the combined effect on sick-leave, company performance and employee satisfaction is expected to balance the annual costs.

The measures may also contribute to some relief of mental workload, to a somewhat more effective communication with clients, and to improved employee satisfaction. Given the limited effect of each separate measure, implementation of the whole set is recommended.

Follow-up

This study did not involve a follow-up, nor an evaluation of the implementation of measures. We know the division manager has implemented 'lunch walks', 'get your own coffee/tea', 'bilateral outdoor walks' and 'cycle to clients'.

TNO Recommendations for sufficient physical activity at work

1. Be physically active, at your work and on your way to work

- a .. ≥ 30 minutes of moderate-intensive physical activity .. during work, lunch break or commuting
- b .. <1h continuous standing
<2h continuous sitting
<4h total standing (restricted walking)

2. Take time-outs to recover

- a .. ≥ 7½ minutes time-out after a maximum of 1½ hours of work
.. morning: ≥ 7½ minutes
.. afternoon: ≥ 10 minutes
- b .. ≥ 30 seconds time-out after a maximum of 20 minutes of work

(Commissaris et al., 2006, Proceedings IEA2006 Congress 'Meeting Diversity in Ergonomics')

Expected costs

Measure	Investment (once-only)	Annual costs (incl. interest, depreciation, maintenance)
Lunch walks	0	€ 2.160
Get your own coffee/tea	0	0
Bilateral outdoor walks	0	0
Cycle to clients	€ 1.500	€ 404
Active computer breaks	0	€ 650
Play table-tennis	€ 1.200	€ 283
TOTAL	€ 2.700	€ 3.497
		= 0,75% of annual sum of wages



References

Commissaris DACM, Douwes M, Schoenmaker N, Korte EM de. Recommendations for sufficient physical activity at work. In: Pikaar RN, Koningsveld EAP, Settels PJM, Eds. Meeting Diversity in Ergonomics. Proceedings IEA2006 Congress. Oxford: Elsevier, 2006. CD-rom: art0693.

More examples

www.tno.nl → markets → work and employment → cases → page 4: "more exercise in production line"
www.tno.nl → markets → work and employment → products → Design for Human Performance

Acknowledgments

The authors thank the manager and members of the Achmea Vitale division in Tilburg for their cooperation, and acknowledge the financial support of Achmea HR Policies.