

Economic evaluation of a randomized controlled trial of an intervention to reduce office workers' sitting time: the "Stand Up Victoria" trial ¹

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1. Supplementary Tables
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Supplementary Table 1- Cost of intervention delivery

Activity	Identification of costs	units of measure	no. of units	unit cost (AU\$)	source of unit costs	total intervention cost (AU\$)	cost per participant (AU\$)
Recruitment of organisation	facilitator time	hours/minutes	10.00	59.30	salary costs from project records ^a	593.05	4.36
	management time	hours/minutes	2.00	80.42	wage rates, public sector executives, Executive Level 2 ^b	160.85	1.18
Unit reps consultation	facilitator time	hours/minutes	2.00	59.30	salary costs ^a	118.61	0.87
	unit management time	hours/minutes	2.00	66.92	wage rates, public sector executives, Executive Level 1 ^c	133.84	0.98
Information session – unit reps & employees	facilitator time	hours/minutes	7.00	59.30	salary costs ^a	415.13	3.05
	preparation of email	hours/minutes	0.25	59.30	salary costs ^a	14.83	0.11

	employee time	hours/minutes	7.00	49.71	wages rates from Australian Bureau of Statistics (ABS) ^d	347.96	2.56
Workstation set up*	sit-to-stand workstation	unit cost	136.00	185.70	Ergotron market price inclusive of delivery annuitized over 5 years ^e	25,255.71	185.70
	tradesman installation time	unit cost	136.00	110.00	Ergonomics retail installation market price ^e	14,960.00	110.00
Individual consultation	facilitator time	hours/minutes	68.00	59.30	salary costs ^a	4,032.71	29.65
	employee time	hours/minutes	68.00	49.71	wages rates from ABS ^d	3,380.14	24.85
	preparation of email summary	hours/minutes	44.88	59.30	salary costs ^a	2,661.59	19.57
	office reminder sheets	unit cost	136.00	1.50	printing costs including laminating (based on Officeworks prices) ^f	204.00	1.50
Telephone check- up over 4 sessions (weeks 1, 3, 5, 12)	facilitator time (phone call and to develop email summary)	hours/minutes	79.20	59.30	salary costs ^a	4,696.92	34.54
	employee time	hours/minutes	21.76	49.71	wages rates from ABS ^d	1,081.64	7.95
	telephone calls	per month unit cost for unlimited calls	3.00	130.00	Telstra, Australia Business rates ^g	390.00	2.87
Weekly emails untailored tip	facilitator time	hours/minutes	2.08	59.30	salary costs ^a	123.35	0.91
Total-						58,570.33	430.66

Sources- salary costs- ^a facilitator- Monash University pay scale 2014, Level B, step 3 including 30% oncosts (<http://adm.monash.edu.au/enterprise-agreements/academic-professional-2014/s1-academic-salary-rates.html>); ^b management- Victorian Public Sector award agreement 2011-2014, Department of Human Services, Mid-point Executive

Level 2 (EL2) including 30% oncosts (<http://www.humanservices.gov.au/spw/corporate/publications-and-resources/resources/dhs-final-draft-agreement-with-signatures-4752.pdf>); ^c unit management- Victorian Public Sector award agreement 2011-2014, Department of Human Services, Mid-point Executive Level 1 (EL1) including 30% oncosts (<http://www.humanservices.gov.au/spw/corporate/publications-and-resources/resources/dhs-final-draft-agreement-with-signatures-4752.pdf>); ^d employee time- Average weekly earnings (6302.0, ABS) including 30% oncosts, May 2014 (<http://www.abs.gov.au/ausstats/abs@.nsf/mf/6302.0>).

^eSit-to-stand workstation- average market value for ergotron S dual screen, valued in September 2014; tradesman installation time- average market value for installation, valued in September 2014; ^foffice reminder sheets- market price (<http://www.officeworks.com.au/shop/officeworks/Print-And-Copy/Document-Prints>); ^gtelephone calls- business charges for unlimited phone calls packages to landline/mobile (<http://www.telstra.com.au/small-business/office-phones/business-line-plans/#tab-max>);

* this cost item was varied in the sensitivity analysis

Supplementary Table 2- Healthcare usage related to adverse events (in intervention group)

Resource used	Unit measure	n units	Unit cost (AU\$)	Source of unit cost	Total cost (AU\$)	Mean cost /participant (AU\$)
General Practitioner	per consultation	15	37.05	MBS item23	555.75	4.09
Massage Therapist	per consultation	9	58.00	Comcare - allied health rates - massage therapy-standard consultation ^a	522.00	3.84
Occupational Therapist	per consultation	1	62.25	MBS item 10958	62.25	0.46
Optometrist	per consultation	1	71.00	MBS item 10900	71.00	0.52
Physiotherapist	per consultation	32	62.25	MBS item 10960	1,992.00	14.65
Osteopath	per consultation	8	62.25	MBS item 10966	498.00	3.66
Acupuncturist	per consultation	6	63.55	Comcare rates up to 30 minute consultation ^a	381.30	2.80
Medical Specialist (initial)	per consultation	1	150.90	MBS item 110	150.90	1.11
Medical Specialist (follow up)	per consultation	1	43.00	MBS item 119	43.00	0.32
Low back X-ray	per scan	2	77.00	MBS item 58106	154.00	1.13
Cervical spine X-ray	per scan	1	33.60	MBS item 58102	33.60	0.25
Cervical spine CT scan	per scan	1	240.00	MBS item 56220	240.00	1.76
Total					4,703.80	34.59

MBS- Medicare Benefits Schedule (accessed from- <http://www.mbsonline.gov.au/internet/mbsonline/publishing.nsf/Content/Home>); ^asources-http://www.comcare.gov.au/claims_and_benefits/benefits_and_entitlements/rates_and_reimbursements/allied_health_rates; http://www.comcare.gov.au/claims_and_benefits/benefits_and_entitlements/rates_and_reimbursements/allied_health_rates#acupuncture

Supplementary Table 3- Incremental effects at 12 months, adjusting for baseline values of outcome and confounders ^a (ITT analysis)

Outcome	Intervention (n=136)	Control (n=95)	Intervention – Control	
	Changes in mean (95% CI)		Difference (95% CI)	
Primary outcome				
Workplace sitting time (min/8h)	-59.4 (-77.5– -41.3)**	-12.6 (-27.9– 2.7)	-46.8 (-69.9– -23.7)	<0.001
Secondary outcomes				
Overall sitting time (min/16h)	-43.1 (-64.7– -21.5)**	-8.4 (-32.6– 15.9)	-34.8 (-66.5– -3.1)	0.032
Workplace standing (min/8h)	53.7 (38.3– 69.1)**	11.5 (0.5– 22.5)*	42.2 (23.8– 60.6)	<0.001
Workplace stepping (min/8h)	-0.0 (-3.1– 3.1)	0.3 (-3.3– 3.9)	-0.3 (-5.0– 4.4)	0.882
Overall stepping (min/16h)	-6.6 (-12.5– -0.6)	0.6 (-6.2– 7.4)	-7.2 (-16.2– 1.8)	0.118
BMI (kg/m ²)	0.361 (-0.629– 1.351)	0.213 (-0.973– 1.399)	0.148 (-1.407– 1.703)	0.852
AQoL-8D (0 to 1)	0.064 (-0.031– 0.159)	0.077 (-0.036– 0.189)	-0.006 (-0.074– 0.063)	0.867
Work days lost ^b (sick leave) (days/year)	0.84 (-4.25– 2.58)	2.96 (-5.18– 0.74)	-2.12 (-2.01– 6.26)	0.311

^adifference between groups in terms of activity outcomes were adjusted for confounders specified in the main outcome paper (Healy 2016); BMI, AQoL-8D and day lost were adjusted for age, gender and baseline workplace sitting time; multiple imputation (n=20) was used to replace the missing values. ^b changes in day lost were calculated as days lost over the 12 months of the intervention (period 2) minus the days lost for one year prior to the intervention (period 1). The organisation's human resource database only held records for 213 of the total 231 participants as 18 participants were not employed by this organisation during period 1.

*p<0.05 change from baseline; **p<0.001 change from baseline;

Supplementary Table 4- Results of sensitivity analyses of cost-efficacy analysis

Sensitivity analysis	Incremental cost (AU\$)		Incremental cost per reduction in workplace sitting time (AU\$/min)	Incremental cost per reduction in overall sitting time (AU\$/min)	Incremental cost per increase in workplace standing time (AU\$/min)	
Sit–stand desk not annuitized (\$804)	1093.48 ^a		23.36 (15.64–45.15)	31.42 (16.44–352.74)	35.91 (18.04–45.94)	
	1128.06 ^b		24.10 (16.14–47.60)	32.42 (16.96–363.89)	26.73 (18.61–47.40)	
Varying facilitator/co unsellor’s unit cost (\$55.17–\$65.51)	Lower bound	430.36 ^a	9.20 (6.16–18.16)	12.37 (6.47–138.83)	10.20 (7.10–18.08)	
		464.95 ^b	9.93 (6.65–19.62)	13.36 (6.99–149.98)	11.02 (7.67–19.54)	
	Upper bound	–431.12 ^a	9.21 (6.17–18.19)	12.39 (6.48–139.07)	10.22 (7.11–18.11)	
		465.71 ^b	9.95 (6.66–19.65)	13.38 (7.00–150.23)	11.04 (7.68–19.57)	
Varying the unit cost of sit– stand workstation set up	Varying the cost of workstation (743.90–881.00)	Lower bound	416.78 ^a	8.91 (5.96–17.59)	11.98 (6.27–134.45)	9.88 (6.88–17.51)
			451.37 ^b	9.64 (6.46–19.05)	12.97 (6.79–145.60)	10.70 (7.45–18.97)
		Upper bound	448.45 ^a	9.58 (6.42–18.92)	12.89 (6.74–144.66)	10.63 (7.40–18.84)
			483.04 ^b	10.32 (6.91–20.38)	13.88 (7.26–155.82)	11.45 (7.97–20.30)

	Varying the cost of installati on (100– 120) ^c	Lower bound	420.66 ^a	8.99 (6.02– 17.75)	12.09 (6.33– 135.70)	9.97 (6.94– 17.67)
			455.25 ^b	9.73 (6.51– 19.21)	13.08 (6.85– 146.85)	1079 (7.51– 19.13)
		Upper bound	440.66 ^a	9.42 (6.30– 18.59)	12.66 (6.63– 142.15)	10.44 (7.27– 18.52)
			475.25 ^b	10.15 (6.80– 20.05)	13.66 (7.15– 153.31)	11.26 (7.84– 19.97)

^a excluding cost of adverse events; ^b including cost of adverse events; ^c sources- accessed from <http://www.workflowcomputing.com.au/Ergotron-Workfit-Range-s/147.htm> & <http://www.assembly.com.au/furnitureassemblers/>

Supplementary Table 5- Incremental effects at 12 months, adjusting for baseline values of outcome and confounders^a (Completers analysis)

Outcome	Intervention	Control	Intervention- Control
	Changes in mean (95%CI)		Difference (95%CI)
Primary outcome			
Workplace sitting time (min/8h)	-58.3 (-72.9– -43.7)**	-13.0 (-25.3– -0.63)	-45.4 (-64.6– -26.2)
Secondary outcomes			
Overall sitting time (min/16h)	-40.1 (-56.9– -23.2)**	-3.8 (-23.9– 16.4)	-36.3 (-62.6– -10.0)
Workplace Stepping (min/8h)	-0.3 (-3.3– 2.7)	-0.1 (-3.5– 3.3)	-0.2 (-4.8– 4.3)
Overall stepping (min/16h)	-6.6 (-12.0– -1.1)	-0.6 (-6.7– 5.5)	-6.0 (-14.2– 2.2)
BMI (kg/m ²)	0.79 (0.43– 1.15)**	0.67 (0.22-1.11)*	0.13 (-0.45– 0.70)
AQoL-8D (0-1)	-0.003 (-0.029– 0.023)	0.005 (-0.027– 0.037)	0.008 (-0.034– 0.049)
Work days lost (sick leave) (days/year)	1.18 (-2.43– 4.78)	-2.81 (-4.75– -0.86)	3.98 (-0.08– 8.04)

^a difference between groups in terms of activity outcomes were adjusted for confounders specified in the main outcome paper (Healy 2016); BMI, body fat, AQoL-8D and day lost were adjusted for age, gender and baseline workplace sitting and standing time.

*p<0.001 change from baseline; **p<0.0001 change from baseline.

Supplementary Table 6- Results of one-way sensitivity analysis of cost-effectiveness analysis

	Cost offset (AU\$)		Life year gains		ICER/LY (AU\$)	HALY gains		ICER/HALY (AU\$)
	National population	Trial population (per capita)	National population	Trial population (per capita)		National population	Trial population (per capita)	
Varying the intervention decay rate								
100%	-28194193.05 (-32333420.24 – -23873913.69)	-45.16 (-51.79 – -38.24)	3184 (2872 – 3559)	0.0051 (0.0046 – 0.0057)	75767 (66628 – 85507)	3871 (3434 – 4308)	0.0062 (0.0055 – 0.0069)	62324 (55041 – 71515)
50%	-35224011.78 (-40318445.25 – -29717528.55)	-56.42 (-64.58 – -47.60)	4058 (3621 – 4433)	0.0065 (0.0058 – 0.0071)	57715 (51689 – 66202)	4807 (4308 – 5432)	0.0077 (0.0069 – 0.0087)	48721 (42183 – 55648)
10%	-84170529.39 (-96138702.13 – -72002574.95)	-134.82 (-153.99 – -115.33)	9739 (8740 – 10,676)	0.0156 (0.0140 – 0.0171)	19022 (16234 – 22589)	11612 (10301 – 12986)	0.0186 (0.0165 – 0.0208)	15954 (13345 – 19166)
0% ^a	-225965594.19 (-256269981.50 – -194574893.87)	-361.94 (-410.48 – -311.66)	26409 (23911 – 28843)	0.0423 (0.0383 – 0.0462)	1646 (457 – 3131)	31341 (28032 – 34899)	0.0502 (0.0449 – 0.0559)	1387 (377 – 2671)
Varying the discount rate								
Zero discount	-49882994.35 (-57543374.09 – -42191398.73)	-79.90 (-92.17 – -67.58)	8928 (8116 – 9802)	0.0143 (0.0130 – 0.0157)	24592 (21618 – 27999)	9490 (8428 – 10551)	0.0152 (0.0135 – 0.0169)	23136 (20071 – 26962)
6% discount	-26577209.88 (-30354332.73 – -22650250.75)	-42.57 (-48.62 – -36.28)	2123 (1873 – 2310)	0.0034 (0.0030 – 0.0037)	114412 (103500 – 131763)	2872 (2497 – 3309)	0.0046 (0.0040 – 0.0053)	84565 (72254 – 98823)

^aAssumes intervention effect is maintained for 20 years

AUD = Australian dollars; ICER = incremental cost-effectiveness ratio; LY = life years; HALY = health-adjusted life years