Workplace stair climbing: Uncontrolled effects of pedestrian movement dwarf any effect of intervention.

Frank Eves, Anna Puig Ribera & Anna Señé Mir
Summarising effects for stair interventions

Heterogeneity in stair climbing studies, $I^2 = 97.5\%$
(Bauman et al., 2017)

Public access setting (+3.9%) vs. workplace (+4.3%)
‘a median absolute increase in stair use of approximately +4% in both settings’
(page 6, Bellicha et al., 2015)

Sample-size weighted average climbing at work +1.56%  
(total n = 379,491)
Effects of pedestrian traffic on climbing

Eves et al., 2008; Eves & Puig-Ribera (unpublished)
Interventions

UK: Nine buildings.
3-6 floors, 1-2 lifts.

Two main messages,
Heart health and weight.

Barcelona: 5 choice-points
3 floors, 2 lifts.
Heart health message

Complete days of data,
(7am to 6pm).
Stair climbing and descent.

Doctors have found that 7 minutes of stair climbing a day halves your risk of a heart attack over a 10 year period. There are 1440 minutes in a day. Can you spare 7 of them to live longer?

Subir escaleras protege tu corazón
Un día tiene 1.440 minutos. ¿Puedes dedicar 7 a vivir más?
Effects on stair climbing UK

Phase 1
(n=141,955)

Phase 2
(n=143,450)

- Time of day
- Lifts
- Floors
- Traffic down
- Traffic up
- Signage

OR (95% CI)
Standardised effects on stair usage UK

Phase 1 up

- Time of day
- Lifts
- Floors
- Traffic down
- Traffic up
- Signage

Phase 1 down

- Time of day
- Lifts
- Floors
- Traffic down
- Traffic up
- Signage

120 x

12 x
Effects on stair climbing in Barcelona

Time of day

Stairs down

Lift down

Lift up

Signage

Phase 1
(n=61,739)

Beta (95% CI)

0.2%

Phase 2
(n=83,873)

Beta (95% CI)

46.6%

41.5%

0.1%
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## Summary of effects of signage interventions

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It is easier to encourage stair descent.
Strengths

Heterogeneity $I^2 = 97.5\%$

Automated counting throughout working day.

Sample sizes: up n=368,996; down n=350,909 (c.f. up n=379,491 in Bellicha et al., 2015).

Pooled data so publication bias or file draw

Statistical control for pedestrian movement, with effects an order of magnitude greater than intervention.

Signage interventions can encourage stair descent.
Effects of stair climbing on CVD risk factors

- Fitness ($p < .001$)
- Triglycerides ($p < .001$)
- Body mass ($p < .001$)

Michael, White & Eves (in prep)
Any questions?