

Compositional analysis of sedentary behavior and physical activity during work and leisure among male and female office workers

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Aim

To examine to which extent male and female office workers differ in their time-use composition of sedentary behaviors (SB) and physical activity (PA) during work and leisure.

Methods

SB and PA was measured using accelerometry in 77 male and 104 female office workers. Following compositional data analysis procedures, three isometric log-ratios (ilr) were calculated to express time in sedentary relative to non-sedentary, short relative to long sitting bouts, and standing relative to active behaviors. Differences between men and women and between work and leisure were examined using ANOVA.

Results

Men and women spent 70% and 68% time at work and 59% and 57% time during leisure in SB.

Time spent sedentary relative to non-sedentary differed significantly between work and leisure (ilr sed/nonsed, $\eta_p^2=0.08$, $p<0.01$). During leisure, men used proportionally more time than women in short sedentary bouts (ilr sed<30min/sed>30min, $\eta_p^2=0.06$, $p<0.01$) and spent more time in active behaviors relative to standing (ilr stand/active, $\eta_p^2=0.04$, $p<0.01$) (Figure 1). No significant sex differences were observed during work ($p>0.05$).

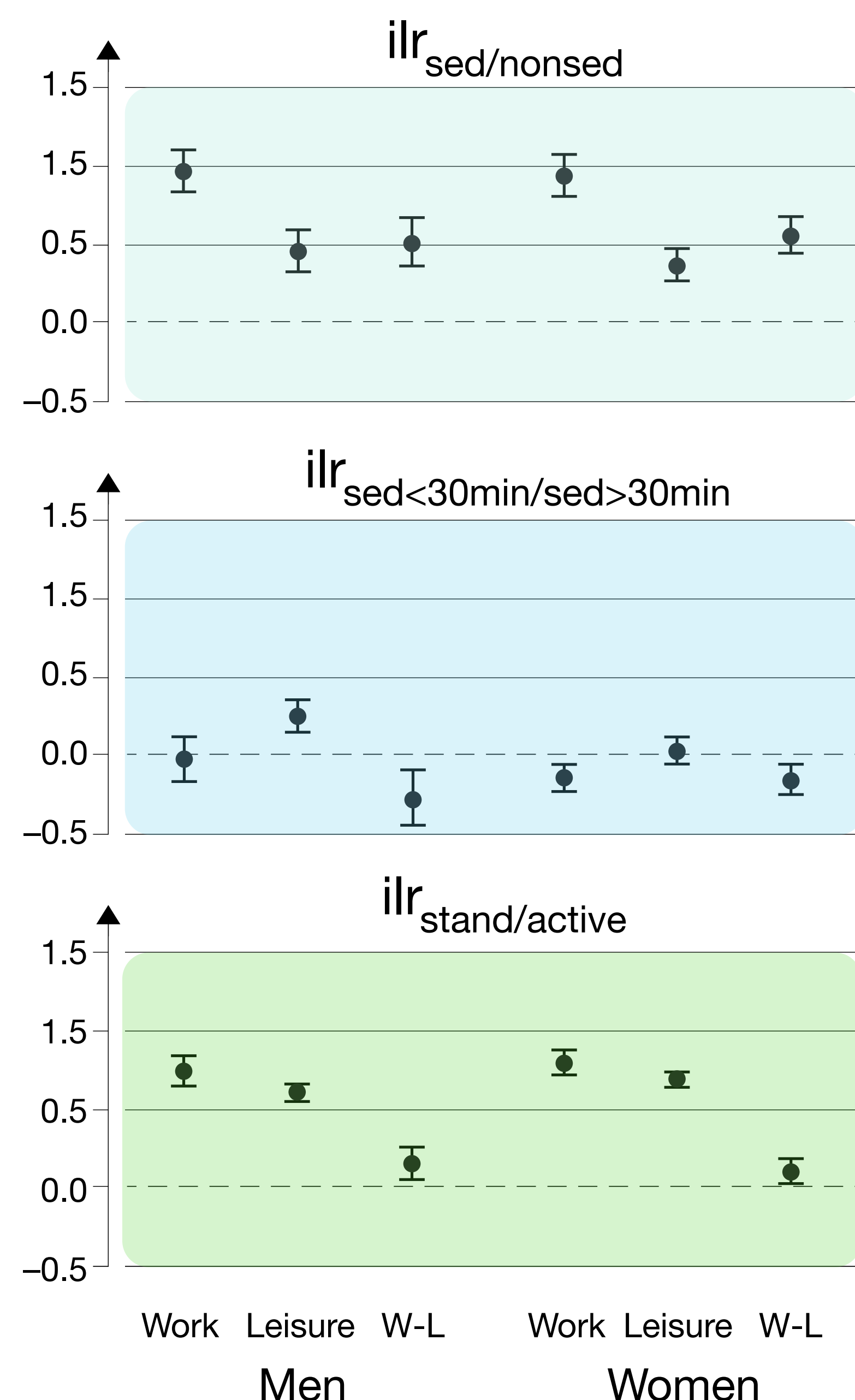


Figure 1. Mean ilr coordinates with 95% confidence intervals for work, leisure and the difference between work and leisure (W-L) among men and women for sedentary/non-sedentary; sedentary bouts <30 minutes/ \geq 30 minutes; and standing/active behavior.

Conclusions

The leisure behavior observed among men is probably more beneficial to health than that observed for women. However, men and women spent a major part of their time in SB, both at and outside their office work, and were in general only little active. Thus, both men and women could benefit from interventions to reduce SB and increase PA both at work and during leisure.