

ADDITIONAL FILE 1

Supplementary Table S1. Sequential binary partition sign matrix for time-use compositions expressed as isometric log-ratio (*ilr*) coordinates with a basis selected to evaluate bout duration (longer versus shorter) for each activity intensity

<i>ilr</i> coordinate	x1 SED (Long)	x2 SED (Short)	x3 LPA (Long)	x4 LPA (Short)	x5 MPA (Long)	x6 MPA (Short)	x7 VPA (Long)	x8 VPA (Short)	x9 “other time”	[Variable name] Interpretation ^a
z1	+1	+1	-1	-1	-1	-1	-1	-1	-1	[ilr 1] SED (long and short) vs LPA (long and short), MPA (long and short), VPA (long and short), and “other time”
z2	+1	-1	0	0	0	0	0	0	0	[ilr 2] Longer SED vs Shorter SED
z3	0	0	+1	+1	-1	-1	-1	-1	-1	[ilr 3] LPA (long and short) vs MPA (long and short), VPA (long and short), and “other time”
z4	0	0	+1	-1	0	0	0	0	0	[ilr 4] Longer LPA vs Shorter LPA
z5	0	0	0	0	+1	+1	-1	-1	-1	[ilr 5] MPA vs VPA (long and short) and “other time”
z6	0	0	0	0	+1	-1	0	0	0	[ilr 6] Longer MPA vs Shorter MPA

z_7	0	0	0	0	0	0	+1	+1	-1	[ilr 7] VPA (long and short) vs “other time”
z_8	0	0	0	0	0	0	+1	-1	0	[ilr 8] Longer VPA vs Shorter VPA

Longer bouts of SED were defined as ≥ 5 -min bouts. Shorter SED was defined as bouts of < 5 min. Similarly, longer PA bouts (i.e., LPA, MPA and VPA) were defined as ≥ 1 -min bouts and shorter PA bouts as the time accumulated in < 1 -min bouts. “Other time” consisted of sleep and non-wear time.

^A All *ilr* coordinates are on the natural log scale, and evaluate either time uses or geometric means for each individual of multiple time uses. For example, the first *ilr* coordinate refers to the geometric mean of time in longer and shorter bouts of SED relative to the geometric mean of longer and shorter LPA, MPA, and VPA, and “other time”, etc.