

Supplementary Table 10: Relationship between isotemporal pairwise ILR coordinates and body fat percentage

	Women n = 6148				Men = 5320			
	coef	se	tstat	pval	coef	se	tstat	pval
Composition of intensity (Full ILR coordinate set)	-	-	-	0.00†	-	-	-	0.00†
Pairwise reallocation - SS to LPA								
$ilr_1 \propto \ln(\text{LPA} \& \text{SS}:\text{MPA} \& \text{VPA})$	2.04***	(0.11)	18.24	0.00	2.00***	(0.12)	16.43	0.00
$ilr_2 \propto \ln(\text{LPA}:\text{SS})$	-2.39***	(0.32)	-7.51	0.00	0.56*	(0.29)	1.92	0.05
$ilr_3 \propto \ln(\text{MPA}:\text{VPA})$	-0.47***	(0.10)	-4.67	0.00	-0.68***	(0.11)	-6.47	0.00
Pairwise reallocation - SS to MPA								
$ilr_1 \propto \ln(\text{MPA} \& \text{SS}:\text{LPA} \& \text{VPA})$	1.35***	(0.26)	5.25	0.00	-0.88***	(0.23)	-3.75	0.00
$ilr_2 \propto \ln(\text{MPA}:\text{SS})$	-2.87***	(0.16)	-17.91	0.00	-1.47***	(0.18)	-8.32	0.00
$ilr_3 \propto \ln(\text{LPA}:\text{VPA})$	0.01	(0.18)	0.05	0.96	1.35***	(0.16)	8.43	0.00
Pairwise reallocation - SS to VPA								
$ilr_1 \propto \ln(\text{VPA} \& \text{SS}:\text{MPA} \& \text{LPA})$	2.03***	(0.21)	9.56	0.00	0.08	(0.21)	0.41	0.68
$ilr_2 \propto \ln(\text{VPA}:\text{SS})$	-2.40***	(0.15)	-15.91	0.00	-0.79***	(0.15)	-5.34	0.00
$ilr_3 \propto \ln(\text{MPA}:\text{LPA})$	-0.48**	(0.24)	-2.03	0.04	-2.04***	(0.22)	-9.27	0.00
Pairwise reallocation - LPA to MPA								
$ilr_1 \propto \ln(\text{MPA} \& \text{LPA}:\text{SS} \& \text{VPA})$	-2.03***	(0.21)	-9.56	0.00	-0.08	(0.21)	-0.41	0.68
$ilr_2 \propto \ln(\text{MPA}:\text{LPA})$	-0.48**	(0.24)	-2.03	0.04	-2.04***	(0.22)	-9.27	0.00
$ilr_3 \propto \ln(\text{SS}:\text{VPA})$	2.40***	(0.15)	15.91	0.00	0.79***	(0.15)	5.34	0.00
Pairwise reallocation - LPA to VPA								
$ilr_1 \propto \ln(\text{VPA} \& \text{LPA}:\text{SS} \& \text{MPA})$	-1.35***	(0.26)	-5.25	0.00	0.88***	(0.23)	3.75	0.00
$ilr_2 \propto \ln(\text{VPA}:\text{LPA})$	-0.01	(0.18)	-0.05	0.96	-1.35***	(0.16)	-8.43	0.00
$ilr_3 \propto \ln(\text{SS}:\text{MPA})$	2.87***	(0.16)	17.91	0.00	1.47***	(0.18)	8.32	0.00
Pairwise reallocation - MPA to VPA								
$ilr_1 \propto \ln(\text{MPA} \& \text{VPA}:\text{SS} \& \text{LPA})$	-2.04***	(0.11)	-18.24	0.00	-2.00***	(0.12)	-16.43	0.00
$ilr_2 \propto \ln(\text{VPA}:\text{MPA})$	0.47***	(0.10)	4.67	0.00	0.68***	(0.11)	6.47	0.00
$ilr_3 \propto \ln(\text{SS}:\text{LPA})$	2.39***	(0.32)	7.51	0.00	-0.56*	(0.29)	-1.92	0.05

*** p<0.01, ** p<0.05, * p<0.1. SS = Sedentary or sleep, LPA = Light physical activity, MPA = Moderate physical activity, VPA = Vigorous physical activity.

† Likelihood ratio test for contribution of relative intensity composition