**Table S2.** Bivariate linear growth model fitted to PD and PAL adjusted for sex and age

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **OT** | **LKF** | **Leukop** | **Micronut** | **Lipids** | **Global** |
| **Covariances** | β (SE) | β (SE) | β (SE) | β (SE) | β (SE) | β (SE) |
| Slope (PAL) – slope (PD) | 0.001 (0.001) | 0.001 (0.002) | 0.001 (0.001) | 0.001 (0.001) | 0.001 (0.001) | 0.001 (0.001) |
| OSR (PAL) – OSR (PD) | **-0.01 (0.004) \*** | **-0.01 (0.005) \*** | -0.006 (0.004) | -0.009 (0.006) | 0.005 (0.005) | **-0.01 (0.006) \*** |

Results are presented as regression coefficient estimate (β) and standard errors (SE). All models were adjusted for age and sex.

By modeling the correlation between slope physical activity level (PAL) and slope physiological dysregulation (PD), this permits us to assess if the change in PAL is related to the change in PD. By modeling the correlation between the occasion-specific residuals (OSR) of PAL and PD, this permits us to assess if individuals whose PAL measures deviate the most from the mean PAL also deviate the most from the mean PD at each occasion. OT: oxygen transport; LKF: liver/kidney function; Leukop: Leukopoiesis; Micronut: micronutrients.

\**P* < 0.05