

**Figure S2.** Path diagram of the conditional bivariate linear growth model fitted to PD and PAL adjusted for sex and age

Physiological dysregulation (PD) and physical activity level (PAL) both were considered as time-varying variable.

PD-i and PD-s represent the intercept and slope of physiological dysregulation which calculated globally and by system, whereas PAL-i and PAL-s represent the intercept and slope of physical activity level measured at T1 (baseline) and after 1-year follow-up (T2), 2-year follow-up (T3) and 3-year follow-up (T4).