Table S5. Associations of the GPS1 with change in adiposity-related traits2 from adolescence into adulthood3 in different strata of physical activity at adolescence.

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| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  | Delta BMI2 |  | Delta WC2 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| GPS |  |  |  | Diff.DeltaZ | CI (95%)  | P-value  |  | Diff.DeltaZ |  CI (95%)  | P-value  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Physical activity | < 2 days/w |  |  | 0.008 | -0.032 to 0.048 | 0.686 |  | 0.008 | -0.038 to 0.053 | 0.741 |  |
|  | ≥ 2 days/w |  |  | -0.008 | -0.031 to 0.015 | 0.515 |  | -0.010 | -0.039 to 0.020 | 0.522 |  |
|  |  |  |  |  | P interaction | 0.475 |  |  | P interaction | 0.448 |  |

1 The genetic predisposition score (GPS) is the sum of effect alleles from each of the nine individual SNPs.

 2 Delta BMI and delta WC are differences between sex-specific z-scores in young adulthood and age-and-sex-specific z-scores in adolescence of BMI and WC respectively.

3 Number of participants: for GPS=1634 (those missing more than 3 SNPs excluded).

The linear regression models were adjusted for pubertal development and age-difference between adolescence and adulthood regarding change BMI and additionally also for height regarding change WC, assuming an additive effect. Pregnant participants were excluded.

≥2 days/w: physically activity in adolescence was doing exercise equal or more than 2 days per week until they got out of breath or sweat