

Table 1. Characteristics of children

| | Boys (n=185) | | Girls (n=192) | | P-value |
|--|-----------------|------|------------------|------|---------------------------------|
| | Mean | SD | Mean | SD | for sex difference ^c |
| Age (years) | 7.7 | 0.4 | 7.6 | 0.4 | 0.149 |
| Peak height velocity (years) | -4.4 | 0.3 | -3.6 | 0.3 | <0.001 |
| Body height (cm) | 130 | 5.3 | 128 | 5.6 | <0.001 |
| Body weight (kg) | 27.5 | 5.0 | 26.2 | 4.8 | 0.003 |
| Body mass index standard deviation score ^a (kg/m ²) | -0.2 | 1.1 | -0.2 | 1.1 | 0.61 |
| Body fat content (%) | 17.4 | 8.0 | 21.9 | 7.5 | <0.001 |
| Overweight or obese ^b (N, %) | 22 (11.9) | | 24 (12.5) | | 0.857 |
| Waist circumference (cm) | 57.5 | 5.9 | 55.6 | 5.7 | <0.001 |
| Insulin (mU/L) | 4.2 | 2.6 | 4.7 | 2.4 | 0.008 |
| Glucose (mmol/L) | 4.9 | 0.3 | 4.7 | 0.4 | <0.001 |
| Triglycerides (mmol/L) | 0.58 | 0.25 | 0.62 | 0.25 | 0.034 |
| High-density lipoprotein cholesterol (mmol/L) | 1.63 | 0.31 | 1.58 | 0.29 | 0.084 |
| Systolic blood pressure (mm Hg) | 100.3 | 7.1 | 99.6 | 7.2 | 0.358 |
| Diastolic blood pressure (mm Hg) | 62.1 | 6.8 | 61.1 | 7.5 | 0.233 |
| Cardiometabolic risk score | 0.0 | 3.7 | -0.3 | 3.3 | 0.475 |
| <i>Heart rate variability variables</i> | | | | | |
| Mean heart rate (beats/min) | 83 | 10.0 | 85 | 9.7 | 0.043 |
| Mean of RR intervals (ms) | 739 | 89 | 720 | 85 | 0.034 |
| Standard deviation of all RR intervals (ms) | 62.0 | 28.8 | 58.5 | 27.9 | 0.291 |
| Root mean square of successive RR interval differences (ms) | 70.2 | 43.2 | 65.5 | 39.3 | 0.537 |
| Low frequency power (ms ²) | 1309 | 985 | 1134 | 961 | 0.050 |
| High frequency power (ms ²) | 53.1 | 16.9 | 55.3 | 15.7 | 0.313 |
| Ratio of low and high frequency power | 1.0 | 1.0 | 0.8 | 0.6 | 0.148 |
| <i>Sedentary time, physical activity, and cardiorespiratory fitness</i> | | | | | |
| Sleep time (hours/night) | 9.6 | 0.5 | 9.7 | 0.5 | 0.444 |

| | | | | | |
|--|-----|-----|-----|-----|------------------|
| Sedentary time (min/d) | 231 | 131 | 242 | 130 | 0.390 |
| Light physical activity (min/d) | 496 | 102 | 520 | 109 | 0.011 |
| Moderate physical activity (min/d) | 103 | 56 | 82 | 47 | <0.001 |
| Vigorous physical activity (min/d) | 30 | 26 | 16 | 16 | <0.001 |
| Moderate-to-vigorous physical activity (min/d) | 133 | 67 | 97 | 55 | <0.001 |
| Physical activity energy expenditure (kJ/kg/day) | 104 | 34 | 90 | 28 | <0.001 |
| Cardiorespiratory fitness (Watt/kg) | 3.8 | 0.5 | 3.6 | 0.5 | <0.001 |

P-values <0.05 indicating statistically significant differences are bolded. Abbreviations: SD, standard deviation. ^a According to Saari et al. (Saari et al. 2011), ^b According to Cole et al. (Cole et al. 2000), ^c T-test or Mann-Whitney U-test for continuous variables and chi-square test for being overweight or obese.

Table 2. Individual associations of sedentary time, physical activity, and cardiorespiratory fitness with heart rate variability variables in boys

| | SDNN | | | RMSSD | | | LF | | | HF | | | LF/HF | | |
|------|--------------|--------------------|------------------|--------------|--------------------|------------------|--------------|--------------------|-------------|--------------|---------------------|------------------|--------------|--------------------|-------------|
| | β | 95% CI | p | β | 95% CI | p | β | 95% CI | p | β | 95% CI | p | β | 95% CI | p |
| ST | -.166 | -.31 -.02 | .026 | -.185 | -.33 -.04 | .012 | -.156 | -.30 -.01 | .037 | -.146 | -.29 -.001 | .049 | .060 | -.09 .21 | .417 |
| LPA | .031 | -.12 .18 | .682 | .021 | -.13 .18 | .773 | .069 | -.08 .22 | .355 | .006 | -.14 .15 | .936 | .070 | -.08 .22 | .343 |
| MPA | .113 | -.03 .26 | .127 | .158 | .01 .30 | .032 | .067 | -.08 .21 | .369 | .111 | -.03 .26 | .133 | -.105 | -.25 .04 | .154 |
| MVPA | .208 | -.06 .35 | .005 | .252 | .11 .39 | .001 | .147 | .001 .29 | .048 | .210 | .07 .35 | .004 | -.175 | -.32 -.03 | .017 |
| VPA | .284 | .15 .42 | <0.001 | .301 | .16 .44 | <0.001 | .229 | .09 .37 | .002 | .294 | .16 .43 | <0.001 | -.219 | -.36 -.08 | .002 |
| PAEE | .246 | .10 .39 | .001 | .283 | .14 .43 | <0.001 | .201 | .06 .35 | .007 | .240 | .10 .38 | .001 | -.163 | -.31 -.02 | .027 |
| CRF | .279 | .14 .42 | <0.001 | .320 | .18 .46 | <0.001 | .214 | .07 .36 | .004 | .278 | .14 .42 | <0.001 | -.209 | -.35 -.07 | .005 |

Values are standardized regression coefficients (β), 95% confidence intervals (CI), and P- values from linear regression analyses in which each ST, PA, and CRF variable was entered individually with years from peak height velocity into the models. P-values <0.05 indicating statistically significant associations are in bold. Abbreviations: ST, sedentary time; PA, physical activity; CRF, cardiorespiratory fitness; SDNN, standard deviation of all RR intervals; RMSSD, root mean square of successive RR interval differences; LF, low frequency power; HF, high frequency power; LPA, light PA; MPA, moderate PA; VPA, vigorous PA; MVPA, moderate-to-vigorous PA; PAEE, physical activity energy expenditure.

Table 3. Individual associations of sedentary time, physical activity, and cardiorespiratory fitness with heart rate variability variables in girls

| | SDNN | | | RMSSD | | | LF | | | HF | | | LF/HF | | |
|------|-------------|--------------------|------------------|--------------|--------------------|------------------|--------------|--------------------|------------------|--------------|--------------------|------------------|--------------|--------------------|------------------|
| | β | 95% CI | p | β | 95% CI | p | β | 95% CI | p | β | 95% CI | p | β | 95% CI | p |
| ST | .370 | -.50 -.24 | <0.001 | -.382 | -.52 -.25 | <0.001 | -.294 | -.43 -.16 | <0.001 | -.363 | -.50 -.23 | <0.001 | .244 | .10 .38 | .001 |
| LPA | .292 | .16 .43 | <0.001 | .296 | .16 .43 | <0.001 | .245 | .11 .39 | .001 | .271 | .13 .41 | <0.001 | -.152 | -.29 -.01 | .036 |
| MPA | .210 | .070 .35 | .004 | .238 | .10 .38 | .001 | .144 | .001 .29 | .049 | .218 | .08 .36 | .003 | -.186 | -.33 -.04 | .011 |
| MVPA | .274 | .14 .41 | <0.001 | .301 | .16 .44 | <0.001 | .182 | .04 .32 | .012 | .284 | .15 .42 | <0.001 | -.249 | -.39 -.11 | .001 |
| VPA | .332 | .20 .47 | <0.001 | .346 | .21 .48 | <0.001 | .210 | .07 .35 | .003 | .348 | .21 .48 | <0.001 | -.320 | -.46 -.18 | <0.001 |
| PAEE | .343 | .21 .48 | <0.001 | .371 | .24 .51 | <0.001 | .240 | .10 .38 | .001 | .347 | .21 .48 | <0.001 | -.282 | -.42 -.13 | <0.001 |
| CRF | .080 | -.07 .23 | .277 | .132 | -.01 .28 | .073 | -.001 | -.15 .15 | .985 | .119 | -.03 .26 | .108 | -.195 | -.34 -.05 | .008 |

Values are standardized regression coefficients (β), 95% confidence intervals (CI), and P- values from linear regression analyses in which each ST, PA, and CRF variable was entered individually with years from peak height velocity into the models. P-values <0.05 indicating statistically significant associations are in bold. Abbreviations: ST, sedentary time; PA, physical activity; CRF, cardiorespiratory fitness; SDNN, standard deviation of all RR intervals; RMSSD, root mean square of successive RR interval differences; LF, low frequency power; HF, high frequency power; LPA, light PA; MPA, moderate PA; VPA, vigorous PA; MVPA, moderate-to-vigorous PA; PAEE, physical activity energy expenditure.

Table 4. Mutually adjusted associations of sedentary time, physical activity, and cardiorespiratory fitness with heart rate variability variables

| | SDNN | | | RMSSD | | | LF | | | HF | | | LF/H | | |
|--------------|--------------|--------------------|-------------|--------------|--------------------|-------------|--------------|--------------------|-------------|--------------|--------------------|-------------|--------------|--------------------|-------------|
| | β | 95% CI | p |
| Boys | | | | | | | | | | | | | | | |
| ST | .088 | -.16 .34 | .474 | .117 | -.12 .36 | .333 | .005 | -.25 .26 | .966 | .142 | -.10 .39 | .248 | -.227 | -.48 .02 | .066 |
| PAEE | .220 | -.04 .49 | .097 | .259 | .004 .52 | .046 | .153 | -.12 .43 | .261 | .232 | -.03 .50 | .078 | -.204 | -.47 .06 | .124 |
| CRF | .231 | .08 .38 | .004 | .270 | .12 .42 | .001 | .169 | .010 .33 | .038 | .232 | .08 .38 | .003 | -.184 | -.34 -.03 | .020 |
| Girls | | | | | | | | | | | | | | | |
| ST | -.301 | -.56 -.06 | .015 | -.279 | -.53 -.04 | .022 | -.338 | -.60 -.09 | .008 | -.269 | -.53 -.03 | .031 | .041 | -.21 .30 | .743 |
| PAEE | .101 | -.15 .36 | .420 | .120 | -.13 .37 | .334 | .011 | -.25 .27 | .930 | .112 | -.14 .37 | .376 | -.170 | -.43 .09 | .190 |
| CRF | .035 | -.12 .19 | .646 | .084 | -.07 .23 | .267 | -.018 | -.17 .14 | .815 | .072 | -.08 .22 | .348 | -.140 | -.29 .02 | .077 |

Values are standardized regression coefficients (β), 95% confidence intervals (CI), and P- values from linear regression analyses in which ST, PAEE, and CRF were entered simultaneously with years from peak height velocity, body fat percentage, and cardiometabolic risk score into the models. P-values <0.05 indicating statistically significant associations are in bold. Abbreviations: ST, sedentary time; PA, physical activity; CRF, cardiorespiratory fitness; SDNN, standard deviation of all RR intervals; RMSSD, root mean square of successive RR interval differences; LF, low frequency power; HF, high frequency power; PAEE, PA energy expenditure.