Supplementary Material

Comparison of top and bottom tertiles for determinants

# Supplementary methods

The boys and girls were ranked by TT3min performance. The top- and bottom-ranked tertiles (top and bottom third of the ranking) were compared using two-tailed, independent samples *t* tests for the determinants. The Holm-Šídák method was used for multiple comparisons. A level of *P* ≤ 0.05 was considered significant. Statistical analyses were performed using Graphpad Prizm 9 (GraphPad Software, San Diego, CA).

Age was calculated in weeks from the date of birth to the day of testing and converted back to years. V̇O2peak and ΣO2def were calculated from the TT3min, leg-press and pull-down were measured from a one-repetition maximum test, and gross efficiency was calculated from steady state exercise. Strength was tested separately for each arm and leg to determine whether there was a difference in strength between the right and left side. As there was no difference between right and left side, the mean between the sides is presented.

# Supplementary Tables

Table 1. Comparison of top- and bottom-ranked tertiles in boys.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Determinants | Top tertile Mean ± SD | Bottom tertile Mean ± SD | Difference (absolute values) | *P*-value |
| TT3min performance (m) | 518 ± 23 | 402 ± 28 | 116 | < 0.01 |
| Age (years) | 15.1 ± 0.4 | 14.3 ± 0.6 | 0.8 | < 0.01 |
| Body weight (kg) | 62.4 ± 7.7 | 53.3 ± 5.3 | 9.1 | 0.01 |
| Body height (cm) | 174 ± 7 | 168 ± 4 | 6 | 0.05 |
| BMI (kg·min2) | 20.4 ± 1.5 | 18.8 ± 1.3 | 1.6 | 0.02 |
| V̇O2peak (ml·kg-1·min-1) | 66.3 ± 3.6 | 57.7 ± 5.6 | 8.6 | < 0.01 |
| ΣO2def (ml·kg-1) | 73 ± 10 | 51 ± 16 | 22 | < 0.01 |
| ΣO2def of tot. req. (%) | 47 ± 10 | 35 ± 12 | 12 | 0.04 |
| Leg-press (kg·BW-1) | 1.76 ± 0.3 | 1.54 ± 0.3 | 0.22 | 0.16 |
| Pull-down (kg·BW-1) | 0.25 ± 0.06 | 0.22 ± 0.0 | 0.03 | < 0.01 |
| Gross efficiency (%) | 17.2 ± 0.9 | 15.9 ± 1.2 | 1.3 | 0.03 |

BMI = Body mass index; ΣO2def = accumulated oxygen deficit; ΣO2def of tot. req. = accumulated oxygen deficit as a percentage of total energy requirements; BW = body weight

Table2. Comparison of top- and bottom-ranked tertiles in girls.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Determinants | Top tertile Mean ± SD | Bottom tertile Mean ± SD | Difference (absolute values) | *P*-value |
| TT3min performance (m) | 434 ± 24 | 354 ± 20 | 80 | < 0.01 |
| Age (years) | 14.6 ± 0.6 | 14.8 ± 0.5 | -0.2 | 0.57 |
| Body weight (kg) | 53.9 ± 5.7 | 61.0 ± 8.3 | -7.1 | 0.05 |
| Body height (cm) | 166 ± 6 | 170 ± 6 | -4 | 0.21 |
| BMI (kg·min2) | 19.6 ± 1.7 | 21.2 ± 2.6 | -1.6 | 0.13 |
| V̇O2peak (ml·kg-1·min-1) | 59 ± 5 | 51 ± 6 | 8 | <0.01 |
| ΣO2def (ml·kg-1) | 58 ± 12 | 34 ± 14 | 24 | <0.01 |
| ΣO2def of tot. req. (%) | 40 ± 11 | 27 ± 12 | 13 | 0.03 |
| Leg-press (kg·BW-1) | 1.76 ± 0.4 | 1.50 ± 0.3 | 0.26 | 0.12 |
| Pull-down (kg·BW-1) | 0.22 ± 0.0 | 0.20 ± 0.0 | 0.02 | 0.28 |
| Gross efficiency (%) | 16.7 ± 1.4 | 16.7 ± 1.3 | -0.0 | 0.96 |

BMI = Body mass index; ΣO2def = accumulated oxygen deficit; ΣO2def of tot. req. = accumulated oxygen deficit as a percentage of total energy requirements; BW = body weight