Supplemental Digital Content 2. Measured (Cosmed) and predicted (ActiGraph hip: Crouter vertical axis (VA) 2-regression model and Crouter vector magnitude (VM) 2-regression model; ActiGraph wrist: VA single regression model and VM single regression model) child-METs and time spent in sedentary behaviors (SB), light physical activity (LPA), moderate PA (MPA), vigorous PA (VPA) and moderate and vigorous PA (MVPA) during approximately two hours of unstructured PA.

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|  |  | **Hip** | | **Wrist** | |
|  | **Cosmed** | **VA 2-Regression Model** | **VM 2-Regression Model** | **VA Single Regression Model** | **VM Single Regression Model** |
| Child-MET | 3.3±2.1 | 2.4±0.9\* | 2.5±1.0\* | 3.3±1.5@# | 3.2±1.3@# |
| SB | 30.6±32.6 | 29.6±27.7@ | 23.5±24.7 | 27.6±23.8 | 27.3±23.6 |
| LPA | 27.0±25.1 | 31.6±21.8@ | 37.9±27.0\* | 28.3±18.5@ | 28.6±18.9@ |
| MPA | 21.9±23.3 | 31.6±32.8 | 31.2±32.7 | 20.8±12.8 | 23.1±14.1 |
| VPA | 14.6±28.6 | 1.4±4.0\* | 2.4±5.0\* | 16.0±21.9@# | 13.6±19.1@# |
| MVPA | 36.6±38.1 | 33.0±34.7 | 33.6±36.0 | 36.7±32.1 | 36.7±30.7 |

Values are reported as mean ± SD. child-MET, metabolic equivalents (measured VO2 for the activity divided by measured lying rest VO2). \*Significantly different from Cosmed K4b2, P<0.05; @ significantly different from hip vector magnitude 2-regression model, P < 0.05; # significantly different from hip vertical axis 2-regression model, P < 0.05.