

**Supplementary Table S3.** Main findings of studies examining ActiGraph GT9X energy expenditure validity.

| Author,<br>year                 | Criterion measure  | Criterion validity<br>indices                        | Wearing position | Outcomes                            |
|---------------------------------|--|--|------------------|-------------------------------------|
| <b>Ho et al.,<br/>2019 [35]</b> | Indirect calorimetry<br><br>« Regarding the indirect calorimeter method, the Cardiopulmonary Exercise Testing System (Vmax Encore 29 System; VIASYS Healthcare Inc, Yorba Linda, CA) was adopted to conduct the metabolic criterion measure (CM).» (Ho et al., 2019, p. 3-4) | MAPE, Cohen's d,<br><br>Pearson's r, ICC<br><br>(NM) | Hip (right)      | <u>MAPE, %:</u>                     |
|                                 |  |  | Wrist (left)     | Wrist (left):                       |
|                                 |  |  |                  | <b>4.80 km/h: 21.43, p&lt;0.05</b>  |
|                                 |  |  |                  | <b>6.42 km/h: 41.44, p&lt;0.05</b>  |
|                                 |  |  |                  | <b>8.04 km/h: 52.03, p&lt;0.05</b>  |
|                                 |  |  |                  | <b>9.66 km/h: 58.14, p&lt;0.05</b>  |
|                                 |  |  |                  | <b>11.28 km/h: 63.86, p&lt;0.05</b> |
|                                 |  |  |                  | Hip (right):                        |
|                                 |  |  |                  | 4.80 km/h: 5.71 (p>0.05)            |
|                                 |  |  |                  | <b>6.42 km/h: 6.31, p≤0.05</b>      |
|                                 |  |  |                  | <b>8.04 km/h: 4.73, p≤0.05</b>      |
|                                 |  |  |                  | <b>9.66 km/h: 5.23, p≤0.05</b>      |

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**11.28 km/h: 10.40,  $p \leq 0.05$**

Cohen's d

Wrist (left):

4.80 km/h: 1.58

6.42 km/h: 4.03

8.04 km/h: 9.74

9.66 km/h: 10.88

11.28 km/h: 11.54

Hip (right):

4.80 km/h: 0.36

6.42 km/h: 0.39

8.04 km/h: 0.36

9.66 km/h: 0.49

11.28 km/h: 1.08

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Pearson's r

Wrist (left):

4.80 km/h: 0.105, (p>0.05)

6.42 km/h: 0.030, (p>0.05)

8.04 km/h: -0.169, (p>0.05)

9.66 km/h: -0.165, (p>0.05)

11.28 km/h: -0.130, (p>0.05)

Hip (right):

**4.80 km/h: 0.529, p<0.001**

**6.42 km/h: 0.428, p<0.001**

8.04 km/h: 0.110, (p>0.05)

**9.66 km/h: 0.210, p<0.001**

11.28 km/h: 0.162, (p>0.05)

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ICC

Wrist (left):

0.073

Hip (right):

0.868

MPE, % (calculated with group  
values)

Wrist (left):

4.80 km/h: -21,4

6.42 km/h: -41,4

8.04 km/h: -52,0

9.66 km/h: -58,1

11.28 km/h: -63,9

Hip (right):

4.80 km/h: -5,7

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6.42 km/h: -6,3

8.04 km/h: -4,7

9.66 km/h: -5,2

11.28 km/h: -10,4

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Statistical significance was bolded. ICC: intraclass correlation; MAPE: mean absolute percentage of error; MPE: mean percentage of error.