

# Supplementary material:

## Outcome definitions:

### Mean absolute percentage error (MAPE)

$$\text{Mean absolute percentage error (MAPE)} = \frac{1}{n} \sum_{t=1}^n \left| \frac{A_t - F_t}{A_t} \right|$$

n = number of times the summation iteration happens

A<sub>t</sub> = actual value (measured with the reference standard)

F<sub>t</sub> = Forecast value (measured with the index test)

### Mean percentage error

$$\text{Mean percentage error} = \frac{1}{n} \sum_{t=1}^n \frac{A_t - F_t}{A_t}$$

n = number of times the summation iteration happens

A<sub>t</sub> = actual value (measured with the reference standard)

F<sub>t</sub> = Forecast value (measured with the index test)

### Mean difference

$$\text{Mean difference} = \frac{1}{n} \sum_{t=1}^n A_t - F_t$$

n = number of times the summation iteration happens

A<sub>t</sub> = actual value (measured with the reference standard)

F<sub>t</sub> = Forecast value (measured with the index test)

### Mean bias (Bland-Altman)

$$\text{Mean bias (Bland - Altman)} = \frac{1}{n} \sum_{t=1}^n \left( F_t - \frac{(A_t + F_t)}{2} \right)$$

n = number of times the summation iteration happens


A<sub>t</sub> = actual value (measured with the reference standard)

F<sub>t</sub> = Forecast value (measured with the index test)

**Supplementary Table 1: characteristics and results of all the studies included in the review (including the risk of bias assessment for each outcome).**

The table was added as an excel file to the supplementary material. The reader can use the filter function at their preference, for example to isolate the objective (accuracy versus acceptability) the outcome within the objective (step count, energy expenditure, ...), the device used as the index test, and the reference standard. An example is shown in **Supplementary figures 1 and 2.**

**Supplementary Figure 1: accessing the filter function**

F	G	H
Outcome Assessed	Outcome category	Device br
Data availability	 Sort Ascending	
Data availability		
MVPA		
Step count		
Step count		
Step count		
Energy expenditure		
Energy expenditure		
Energy expenditure		
Energy expenditure		

**Supplementary Figure 2: filters available for the variable “Outcome Assessed”**

Filter

×

Select item:

☒ (Select All)

☒ Active time

☒ Activity classification (sedentary, household, walking, and running)

☒ Activity count

☒ Daily mean activity

☒ Data availability

☒ Distance

☒ Ease of use and other characteristics

☒ Energy expenditure

☒ Heart rate

☒ Loading rate (BW/s)

☒ MVPA

☒ Physical activity intensity

☒ Speed

☒ Step count

OK

Cancel