

Ontology of estimated within bout **walking** **speed**



CORE MEASURES *of*
PHYSICAL ACTIVITY



Digital Measures Development

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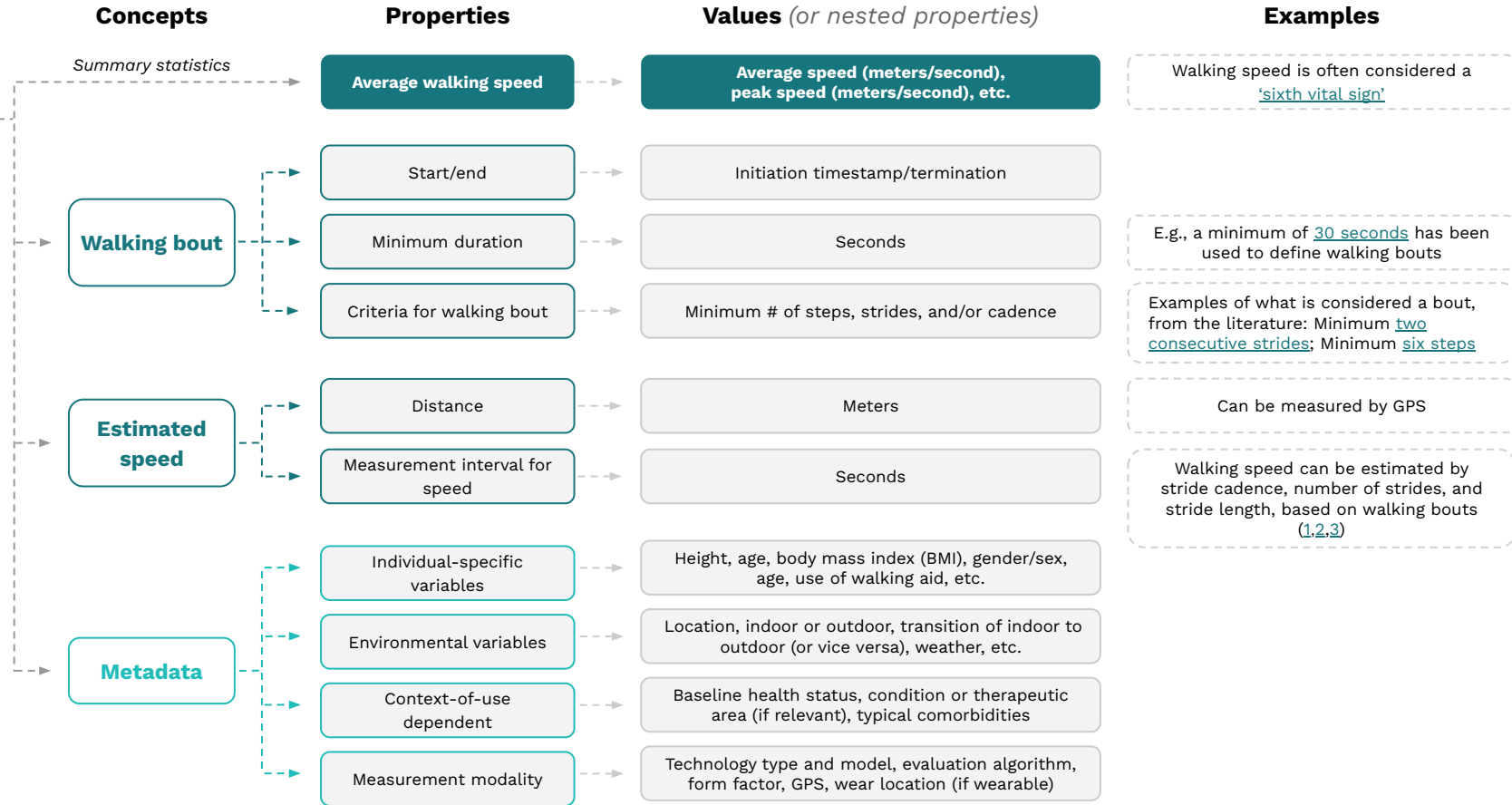
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Walking speed



Definition

Walking speed is the estimated “distance covered by the whole body within a certain time interval/per unit time of walking.” The units of the estimated measure are meters per second.



Estimated within bout walking speed



Measure considerations (assumptions & limitations):

- While stepping and walking are related concepts, there is a distinction. Stepping is a component of walking, related to the movement of the foot and its contact with the ground. Walking describes more continuous locomotion, composed of a series of steps, often resulting in a forward displacement of a person's center of mass. Walking is rhythmic and involves specific cadence, walking speed, stride length, and other kinematic properties. (1,2)
- If relying on GPS for distance measurement, this approach assumes accuracy in location measurement from consumer-based technologies (i.e., using GPS to measure actual meters traveled rather than an estimate of walking speed by estimation algorithms from inertial sensor data alone).
- Note that measures of cadence may also be informative and can be measured alongside estimated walking speed.