Ontology of **step count**

CORE MEASURES *of*
PHYSICAL ACTIVITY

Digital Measures Development

DATACC by DiMe

Access more resources: DATAcc's Core Measures of Physical Activity

Ontology of **step count**

Definition

The number of steps (with steps defined as the "initial contacts of the ipsi- and contralateral foot and corresponding to the displacement of the foot together with a displacement of the trunk") taken during a defined interval

Concepts	Properties	Values *(or nested properties)*	Examples
Step count			
Summary statistics	**Total step count**	**Average steps/hour, steps/day, steps/week over a period of time**	The Physical Activity Guidelines Advisory Committee (PAGAC) published findings regarding the health benefits related to average steps/day
Step	Count	Number of steps	
Measurement interval	Measurement interval of steps	Hour, day, week	HL7 Physical Activity IG and in practice, industry (1, 2, 3, 4) summarizes in steps/day
	Start/end	Initiation timestamp/termination	
Metadata	Individual-specific variables	Height, age, body mass index (BMI), gender/sex, age, use of walking aid, etc.	
	Environmental variables	Location, indoor or outdoor, transition of indoor to outdoor (or vice versa), weather, etc.	
	Context-of-use dependent	Baseline health status, condition or therapeutic area (if relevant), typical comorbidities	
	Measurement modality	Technology type & model, evaluation algorithm, form factor, GPS, wear location (if wearable)	

Step count

Measure considerations (assumptions & limitations):

- Context is key; step count can be influenced by factors such as patient gait patterns, use of walking aids, cadence, walking speed, variability of stride length, etc.
- Wear locations for wearables can drive the biggest differences in measurement (where standing would be represented as the initial movement) and step count prediction algorithms.
- If a patient uses a walker or cane, but their condition improves and the walking aid is no longer needed, further analysis may be required to account for this change.