

# A comprehensive approach to assess walking ability and fall risk using the Interactive Walkway

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Interactive Walkway **Issue Date:** 2019-05-08

### **Abbreviations**

2D Two-dimensional

3D Three-dimensional

8MWT 8-meter walking test

10MWT 10-meter walking test

ADT Augmented dual-task walking (obstacle avoidance with dual

task)

AP Anterior-posterior

ARD Available response distance

ART Available response time

ASS Asymmetric stepping stones

C Control

CI Confidence interval

CWS Comfortable walking speed

EW Entire walkway

FMA Fugl-Meyer Assessment

FOG Freezing of gait

FT Full turns

FW Foot width

HT Half turns

 $ICC_{(A,1)}$  Intraclass correlation coefficient for absolute agreement

 $ICC_{(C,1)}$  Intraclass correlation coefficient for consistency

ISS Irregular stepping stones

IWW Interactive Walkway

L Left

MDS-UPDRS Movement Disorder Society version of the Unified Rating Scale

for Parkinson's disease

ML Mediolateral

MOCA Montreal Cognitive Assessment

mSAFFE Modified Survey of Activities of Fear of Falling in the Elderly

Scale

MWS Maximum walking speed

NFOGQ New Freezing of Gait Questionnaire

PD Parkinson's disease (patient)

PDT Plain dual-task walking (8-meter walking test with dual task)

R Right

S Stroke patient

SCOPA-COG Scales for Outcomes in Parkinson's Disease – Cognition

SD Slowing down

SL Step length

SN Sudden narrowing

SSS Symmetric stepping stones

SSWS Self-selected walking speed of unconstrained walking

SU Speeding up

SW Step width

SWOT Strengths, weaknesses, opportunities and threats

V Vertical

VSS Variable stepping stones

WW Walkway width

### **Videos**

Overview of the videos that were published with this thesis.

### Chapter 2 (Supplement 2.2)

Video of body point's time series obtained with the multi-Kinect v2 set-up and the Optotrak system of a single representative trial during the comfortable walking speed condition of the 10-meter walking test. This video is available at https://doi.org/10.1371/journal.pone.0139913.s004.

#### **Chapter 5 (Supplement 5.1)**

Video of Interactive Walkway tasks of unconstrained walking and walking adaptability in a patient with stroke. This video is available at https://youtu.be/nV9tGvlPogs.

#### Chapter 6 (Supplement 6.1)

Video of Interactive Walkway tasks of unconstrained walking, adaptive walking and dual-task walking in a person with Parkinson's disease with dyskinesia. The subject had consented to the making of the video for publication purposes. This video is available at https://youtu.be/p1a07lL9veM.

#### Chapter 7 (Supplement 7.2)

Video of assessments on the Interactive Walkway in a patient with stroke. This video is available at https://youtu.be/k702kc5R-K8.