Kinesis
Health Technologies

Kinesis Balance
Home Fall Risk Assessment Tool

Introduction

Kinesis Health Technologies Ltd have developed a home falls risk assessment tool (Kinesis Balance) to allow an older adult to objectively assess and monitor their risk of falls risk in their own home, using a smartphone.

The product uses the inertial sensors embedded in the smartphone along with simple questionnaires to provide an evidence-based falls risk score using validated, patent-protected algorithms, based on a dataset of 290 community dwelling older adults and supported by a number of peer-reviewed scientific publications[1-3].

The product provides an objective means to allow an older person to assess and track their falls risk, frailty and balance in the home or community environment through statistical analysis of the clinical fall risk factors and quantitative balance measures obtained as part of a simple balance test conducted in their own home or a clinical environment.

Features:

- Reliable profiling of fall risk
- Comprehensive quantitative analysis of patient balance
- Trending of patient balance and fall risk
- Advice on staying healthy, maintaining balance and avoiding falls
- User prompting to perform test on a periodic basis
- Secure backup of patient data to the cloud
- Accessible and exportable data

Kinesis Balance employed sensors embedded in common smartphones and runs as an Android application.

The application can be used by the older adult unsupervised or supervised by their carer, and has been designed for ease of use by this cohort.

References

1 B.R. Greene, E.P. Doheny, R.A. Kenny, and B. Caulfield, 'Classification of Frailty and Falls History Using a Combination of Sensor-Based Mobility Assessments', *Physiol. Meas. ,* 35 (2014), 2053-66.

2 Barry R Greene, Killian McManus, and Brian Caulfield, 'Automatic Fusion of Inertial Sensors and Clinical Risk Factors for Accurate Fall Risk Assessment During Balance Assessment', in *IEEE Biomed. Health Inform. Conf* (Las Vegas, NV: 2018).

3 Barry R. Greene, Denise McGrath, Lorcan Walsh, Emer P. Doheny, David McKeown, Chiara Garattini, Clodagh Cunningham, Lisa Crosby, Brian Caulfield, and Rose A. Kenny, 'Quantitative Falls Risk Estimation through Multi-Sensor Assessment of Standing Balance', *Phys Meas,* 33 (2012), 2049-63.