

Falls Research

SPECIALISTS IN NEW TECHNOLOGIES FOR FALL PREVENTION

The Fall Research Centre at NeuRA is a world leading group in fall risk assessment and fall prevention in older people and clinical groups with balance disorders. It is using new technologies for the above aims: i.e. wearable sensors for reporting falls and gait stability, and i-PAD and exergame technologies for promoting evidence-based exercise for fall prevention.

SELECTED RECENT PROJECTS

We have successfully conducted three pilot trials:

1. Schoene DS, Lord SR, Delbaere K et al. A randomized controlled pilot study of home-based step training in older people using videogame technology. PLoS ONE 2013. 8(3): e57734.
2. Schoene DS, Delbaere K, Lord SR. Interactive cognitive-motor step training improves cognitive risk factors of falling in older adults - a randomized controlled trial. Plos One. 2015; 10(12): e0145161.
3. Hoang P, Schoene DS, Gandevia SC, Lord SR. Effects of a home-based step training program on balance, stepping, cognition and functional performance in people with multiple sclerosis – a randomized controlled trial. Multiple Sclerosis Journal 2016;22:94-103

TRACK RECORD

Partnerships with Phillips Research Eindhoven, McRoberts (sensor technology) and SENSING Tex.

Consultancies for Eli Lilly and Merck.

THE TOOLS OF OUR TRADE

We have developed a home-based exergame step training system that includes a stepping mat that can be blue-tooth connected to a TV, exergame software, and game use recording that is automatically uploaded to a central server. This prototype is being evaluated in two definitive randomised controlled trials.

COMPETITIVE ADVANTAGES OF OUR TECHNOLOGIES

- Current gold standards for exercise for fall prevention entail traditional exercise led by physiotherapists or Tai Chi instructors.
- The advantages and benefits of our technologies include lower cost (no need for trainers), ability for people to exercise at home, fun and engaging exercises to maximise adherence and health benefits.
- We now require commercialisation of our system and/or the sourcing and production of good quality low cost step mats.

OUR EXPERTS

Professor Stephen Lord

Associate Professor Kim Delbaere

Dr Daina Sturnieks

Please see:

<https://research.unsw.edu.au/people/professor-stephen-lord/publications>

<https://www.neura.edu.au/staff/prof-stephen-lord/>

<https://www.neura.edu.au/staff/dr-kim-delbaere/>

<https://www.neura.edu.au/staff/dr-daina-sturnieks/>