



NAME OF LABORATORY: Center for the Study of Movement, Cognition and Mobility

PI: Prof. Jeff Hausdorff PhD

Director of Division: Prof. Nir Giladi MD

Research Objectives:

- Gain new insights into the physiology and patho-physiology of gait, motor function, cognition and motor-cognitive interactions, leveraging expertise in signal processing, machine learning, and biomedical engineering.
- Develop new tools and technologies for early detection and monitoring of motor and cognitive decline in aging and neurodegeneration using wearable sensors.
- Develop novel treatments to enhance gait, and cognition, to reduce the risk of falls and other disabling conditions, and to enhance health-related quality of life

Main Research topics:

- Gait, postural control, falls
- Motor-cognitive interactions
- Body-fixed sensors
- Non-invasive brain stimulation for gait
- Virtual reality to promote motor and cognitive function

Staff: Anat Mirelman, Talia Herman, Inbal Maidan, Eran Gazit, Shirley Shema, Yoav Beck, Marina Brozgol, Pablo Bezalel, Moria Dagan, Nimrod Geffen, Inbar Hillel, Shiran Shustak

Active Grants:

- The Clinical Profile of Parkinson's disease Pathology, **Rush / NIH**
- Virtual reality for improving motor–cognitive function in multiple sclerosis, **NMSS**
- Non-invasive brain stimulation for freezing of gait in Parkinson's disease; **MJFF**
- Non-invasive brain stimulation for elderly fallers; **BSF**
- Multicenter Osteoarthritis Study: effects on gait, balance and activity; **BU / NIH**
- Racial differences in late-life cognitive decline and risk of Alzheimer's disease; **Rush / NIH**

Collaborations:

- Harvard Medical School
- Rush University
- Holon Institute of Technology
- University of Illinois at Urbana Champaign
- Tel Aviv University
- Columbia University
- Boston University
- UCSF School of Medicine

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