



“Xsense” - Extra-sensory Enhancement of Vestibular Signals for the Elderly



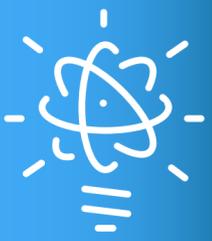
The Problem

Age-related vestibular loss puts older people at a significantly higher risk of falling - the leading cause of hospital admission and accidental death in the elderly. Older adults with a history of dizziness and imbalance are at a higher risk of falling. So far, there is not a proper solution to improve deterioration of vestibular function.



The Solution

Our biologically inspired sensory substitution algorithm and device augments/replaces lost vestibular signals. Providing these signals to the elderly will improve their sense of balance and orientation, and thereby reduce the incidence of falls, and improve their state of well-being.



The Commercial Benefit

- Medical: an improved sense of balance will help the elderly maintain balance and a better sense of orientation. This will reduce falls and counteract the major economic burden of impaired balance in the elderly.
- Military and recreational: additional (future) applications of our sensory enhancement will provide extra sensory information that is not normally available to humans.



Market Potential

The leading cause of hospital admission and accidental death in the elderly is falls - More than one-third of individuals 65 years of age or older fall each year, with medical costs totaling more than \$50 billion annually in the USA. 35% of US adults age 40 years and older have evidence of balance dysfunction. The odds of balance dysfunction increase significantly with age, such that 85% of individuals age 80 and above have evidence of balance dysfunction. Thus there is an urgent need and market for vestibular sensory substitution that will improve people’s sense of balance, orientation and well-being, and reduce falls in the elderly.



Target Markets/Industries

- Medical sector
- Military industry
- Sports and recreation industry



Intellectual Property

Patent Pending



Team: Primary Inventor

Dr. Adam Zaidel

- Received his BSc degree in Electrical Engineering from Tel Aviv University
- Received his MSc and PhD in computational neuroscience from the Hebrew University of Jerusalem
- Did his postdoctoral work on multisensory integration in the lab of Dr. Dora Angelaki (Washington University, St Louis MO and Baylor College of Medicine, Houston TX)
- Currently Senior Lecturer and Head of The Multisensory Processing Lab, Gonda Brain Research Center, Bar-Ilan University (<https://zaidel.wixsite.com/zaidel-lab>)



Future Research

Our future research will focus on how the brain encodes and learns extra sensory information (neural plasticity)



The Opportunity

Investors are kindly invited to license our patent through a licensing agreement with sponsored research.



Keywords

- Sensory substitution
- Perceptual enhancement
- Vestibular
- balance
- Dizziness
- Imbalance