

Falls, Balance Training, and Your Business

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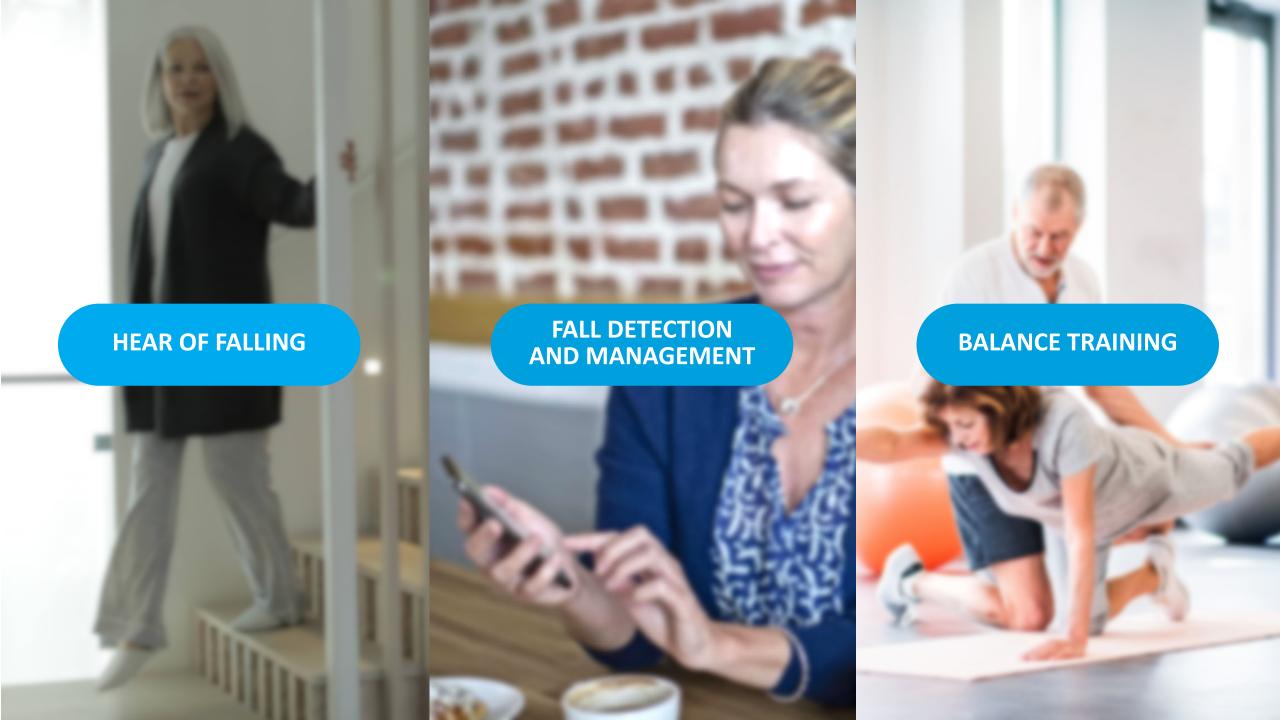
Falls Risk

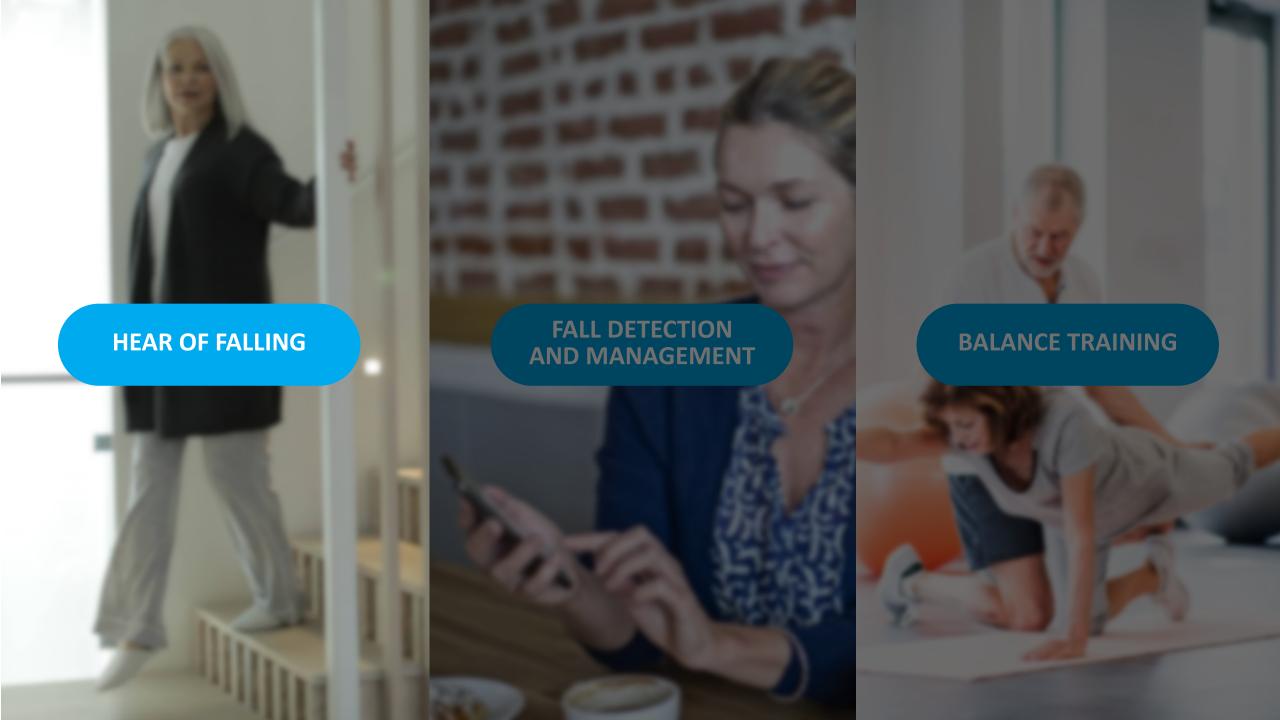
Approximately 28-35% of people aged of 65+ fall each year











HEARING LOSS AND FALL RISKS

1.4-Fold increase

incidence of falls for every 10 dB of measured hearing loss



Source: Johns Hopkins Medicin

Patients

in hearing clinics fall significantly more frequently than peers



Source: University of Nebraska Lincoln



Dementia

Seniors with hearing loss are significantly more likely to

develop dementia than those who retain their hearing.



Tinnitus

Up to 90% of people with tinnitus have some level of noise-induced hearing loss.



Hypertension

High blood pressure can be an accelerating factor of hearing loss in adults.



Smoking

Current smokers risk of having hearing loss than



Ototoxicity

200+ medications may be harmful to ears.



Hear Better. Live Better.

have a 70% higher nonsmokers.



Isolation

Untreated hearing loss can contribute to social isolation, anxiety, depression and cognitive decline.

Obesity

Higher body mass index (BMI) and larger waist circumference are associated with increased risk of hearing loss in women.



Safety/Balance

People with mild hearing loss are 3x more likely to have a history with falling.



Cardiovascular Disease

People with low-frequency hearing loss are considered at risk for cardiovascular events.

Diabetes

Hearing loss is twice as common in people with diabetes as their peers without. Cognitive load/decline,
Traumatic Brain Injury (TBI),
sedative medications

Cognitive capacity, sensory integration, executive functions, reaction speed

Spatial hearing, vision

Environmental awareness

Social isolation, depression, fear of falling

Activity / fitness, physical activity level, muscle tone

Balance disorders, sensory impairments, medication side effects, comorbid conditions

Sensory inputs, proprioception

LIFESTYLE

Social isolation
Depression
Fear of falling
Lifestyle
Muscle tone

SARCOPENIA

DEFINITION

An age-related, involuntary loss of skeletal muscle mass and strength

CONSEQUENCES

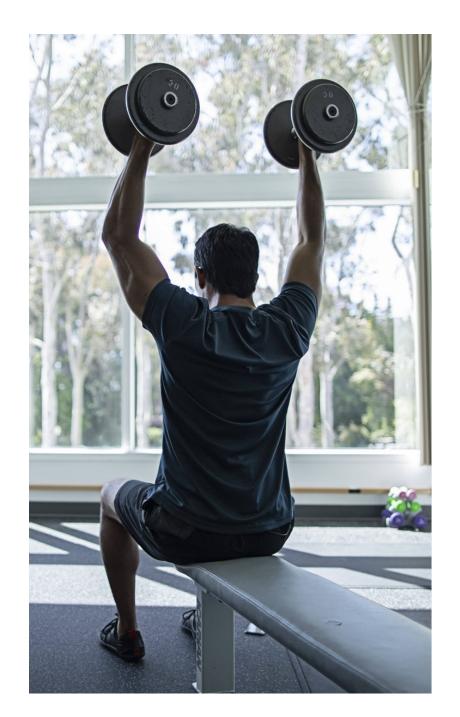
- Strength and functional declines
- Disability and frailty
- Insulin resistance
- Fatigue
- Falls
- Mortality

CAUSES

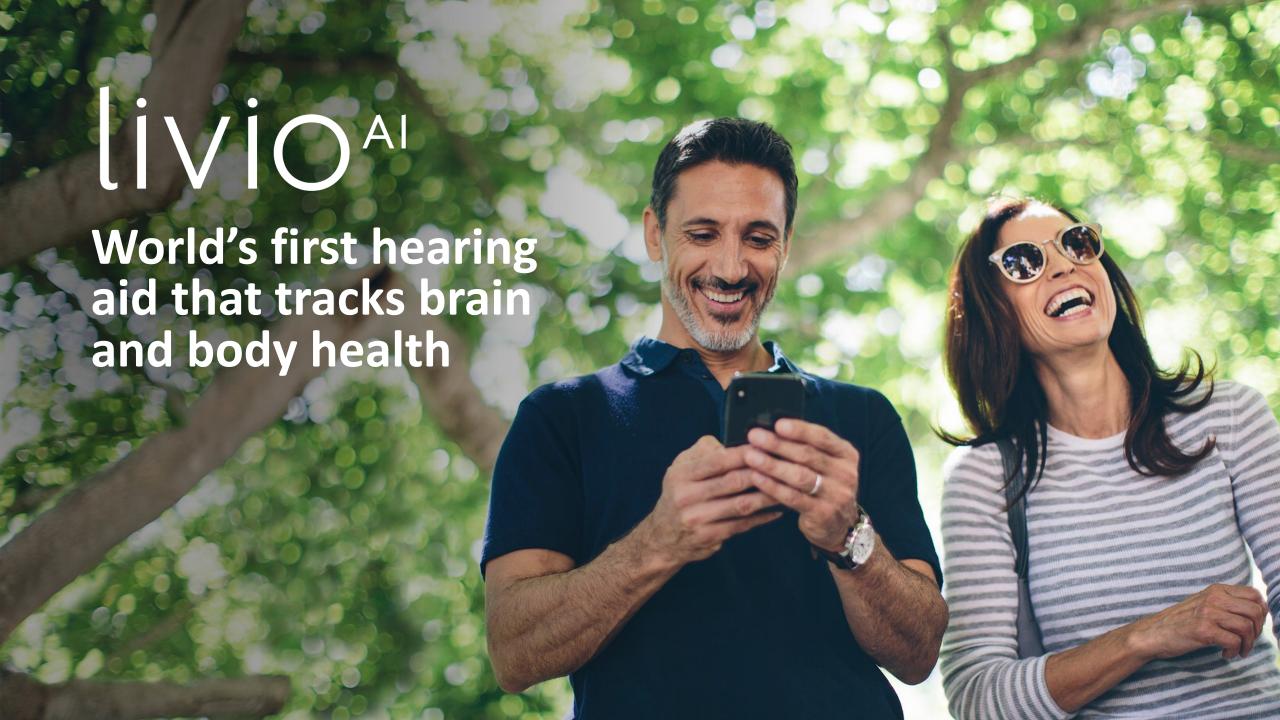
- Sedentary lifestyle
- Nutritional deficiencies
- Obesity and fat infiltration into skeletal muscle tissue

CLINICAL MARKERS

- Reduced muscle mass
- Loss of stamina
- Reduced grip strength
- Reduced gait speed







Adults 60+ spend 80% of life sitting down

Sedentary lifestyle is risk for falls due to impact on muscle function and mobility



Of physical activity per day at age 65 can reduce **35-40% of falls** when older







Steps

Steps per day



Exercise

Minutes of exercise — brisk, walking pace, or faster



Stand

Continuous movement for at least one minute in a one hour period





Use

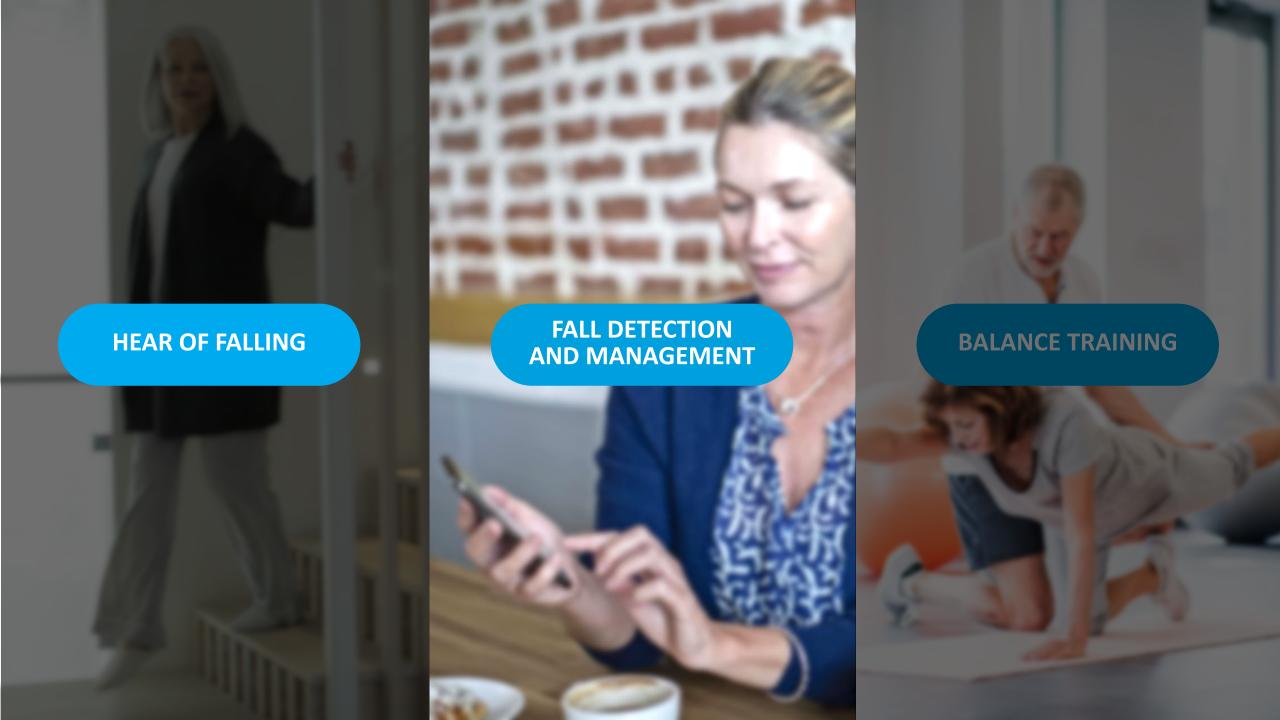
12 hour wear time per day

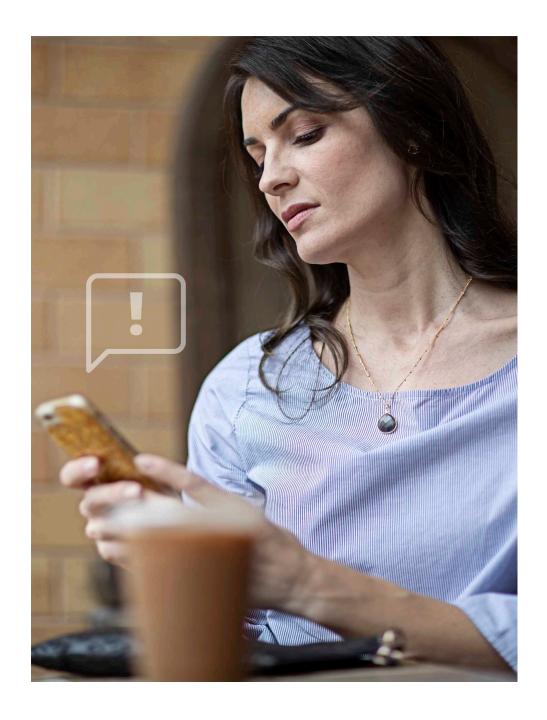
Engagement

Percentage of time in complex social listening situations, including streaming

Environment

How varied are the listening environments





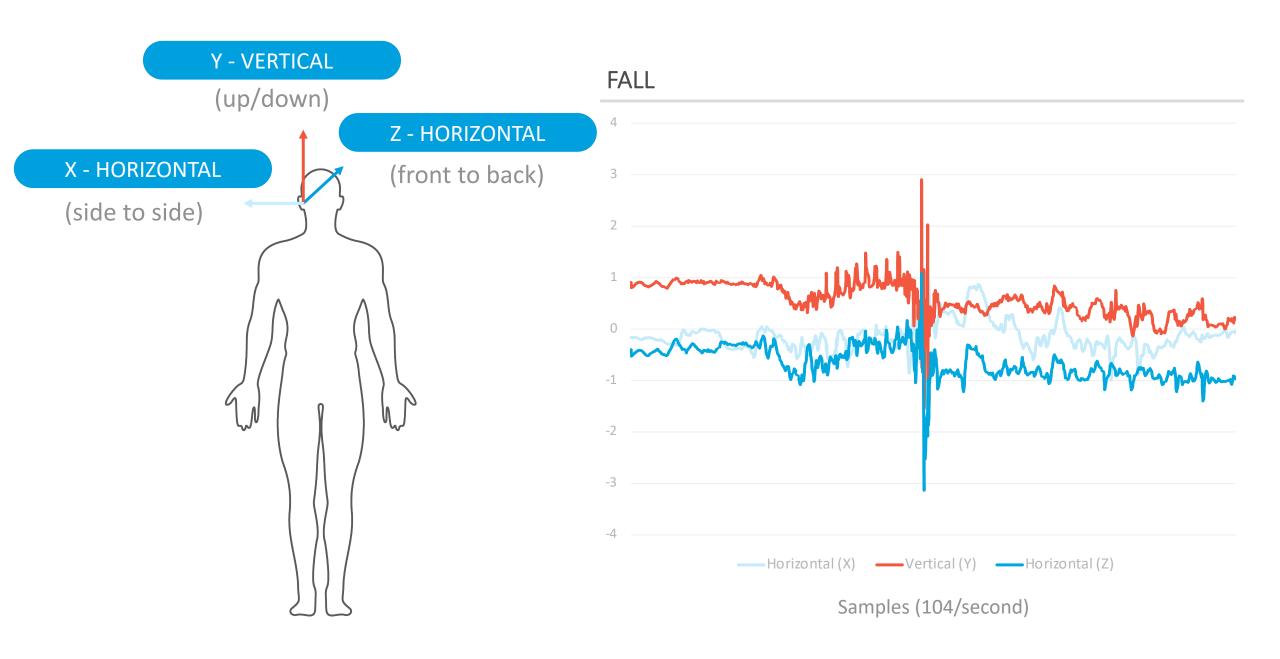
FIRST AND ONLY

Hearing aid with fall detection and alerts

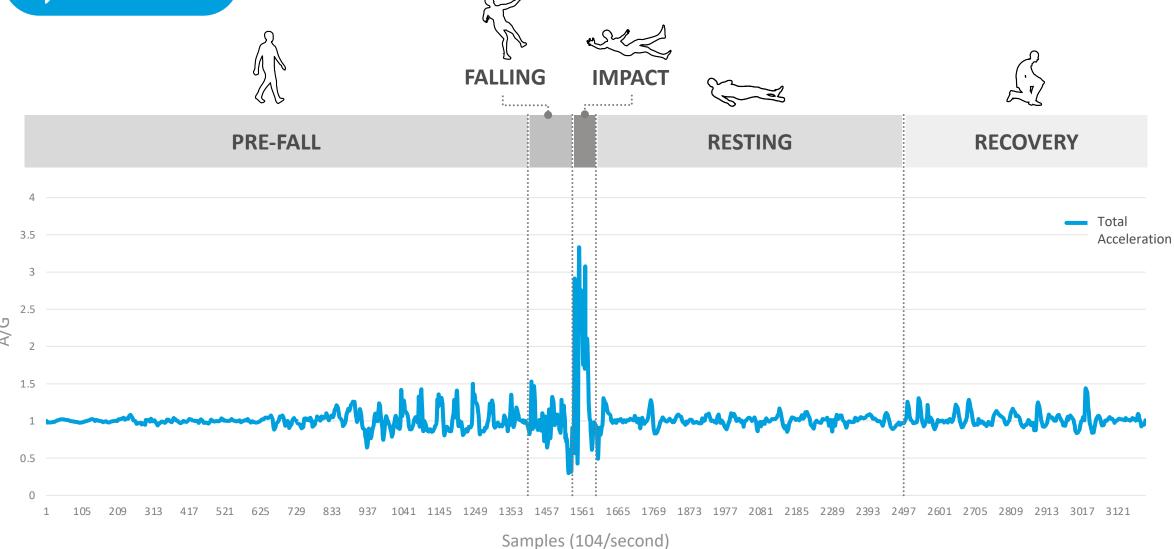
Detects falls and sends alerts to selected contacts

Peace of mind Easy to use

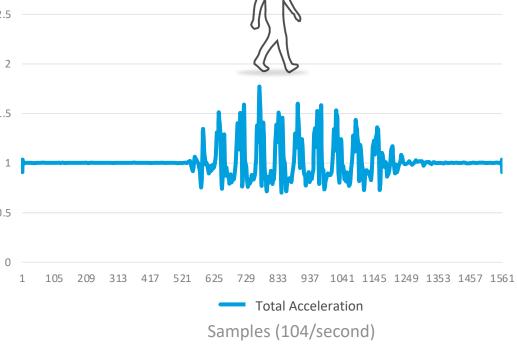




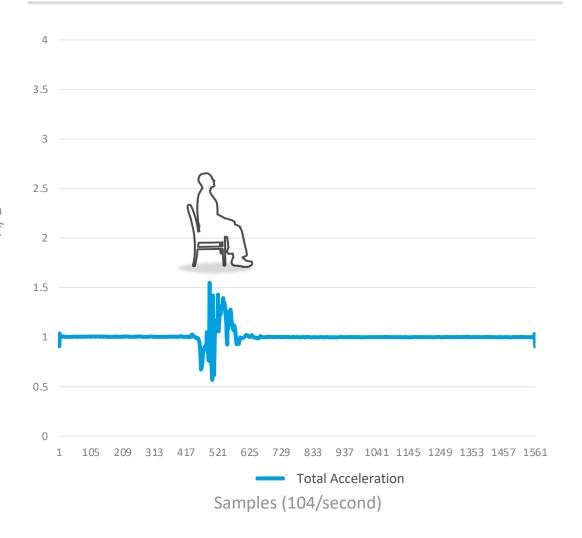


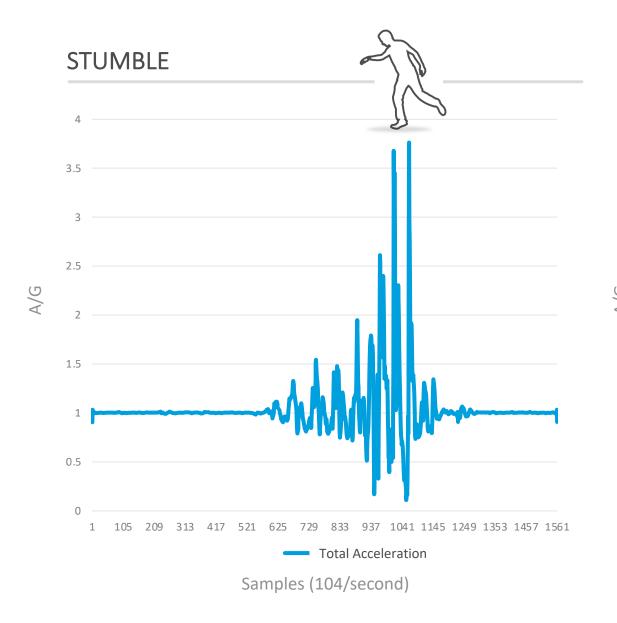


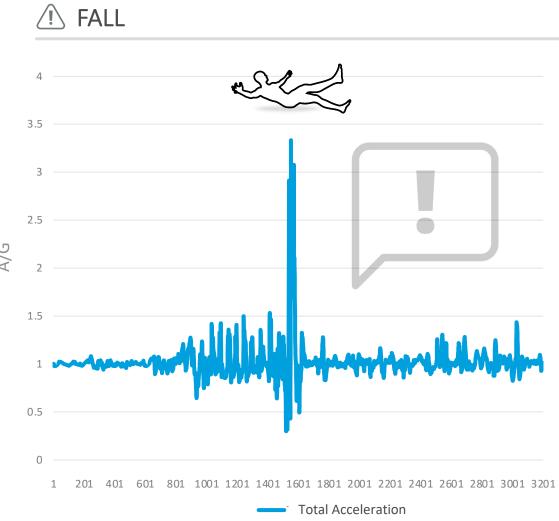
WALKING 4 3.5 2 1.5



SITTING DOWN







Samples (104/second)

CLINICAL VERIFICATION

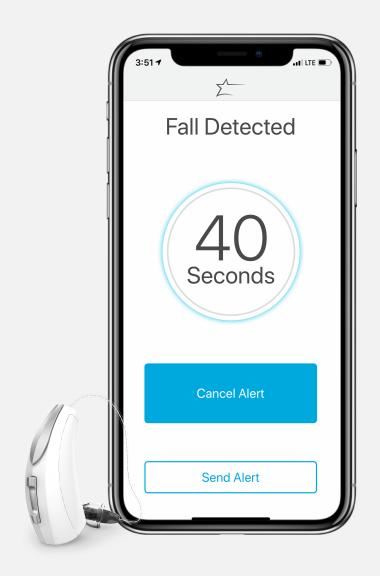


Injury Prevention and Mobility Laboratory at Simon Fraser University



Each participant (n=10) experienced 3 trials of: 8 Falls, 8 Near-Falls, 8 Activities of Daily Living

Livio Al Hearing Devices vs.
Philips Lifeline AutoAlert Pendant

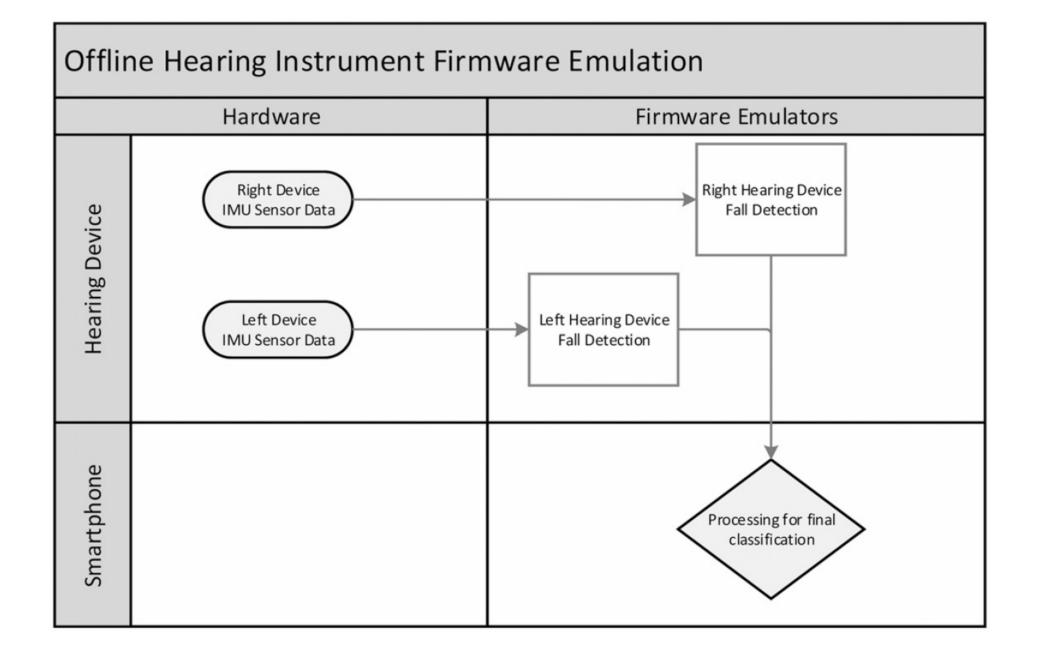


Falls	1	Slip forward on moving platform		
	2	Slip backward on moving platform		
	3	Trip by ankle tether		
	4	Incorrect weight transfers due to a misstep		
	5	Incorrect weight transfer while rising from sitting		
	6	Incorrect weight transfer while descending from standing		
	7	Hit or bumped by padded object		
	8	Loss of consciousness/Collapse		
Near-Falls	1-8	Same as fall conditions, but the participant was able to recover balance before reaching the ground		
Activities of Daily Living	1	Normal walking		
	2	Standing quietly		
	3	Descending from standing to sitting on a chair		
	4	Descending from standing to lying on the ground		
	5	Rising from sitting to standing		
	6	Picking an object up from the ground		
	7	Ascending stairs		
	8	Descending stairs		













Device	Accuracy (%)	Sensitivity (%)	Specificity (%)
AutoAlert Pendant	91.3	82.5	99.8
Livio AI (Normal Sensitivity)	90.0	80.0	99.8
Livio AI (High Sensitivity)	96.0*	92.1*	98.9

DEVICE COMPARISON

	Number of Trials	AutoAlert Pendant	Livio AI (High Sensitivity)	Livio AI (Normal Sensitivity)
True Positive Falls (Sensitivity Rate)	240	198 (82.5%)	221 (92.1%)*	192 (80%)
False-Positives (Specificity Rate)	480	1 (99.8%)*	6 (98.8%)	1 (99.8%)*
Activities of daily living	240	0 (100%)	0 (100%)	0 (100%)
Near-Falls	240	1 (99.6%)*	6 (97.5%)	1 (99.6%)*
Accuracy (Falls, ADLs)	480	438 (91.3%)	461 (96%)*	432 (90%)
Accuracy (Falls, Near-Falls, ADLs)	720	677 (94%)	695 (96.5%)*	671 (93.2%)

Search

Q

A-Z Index

STEADI - Older Adult Fall Prevention

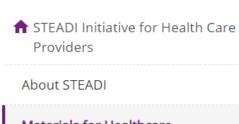
CDC > STEADI Initiative for Health Care Providers











Materials for Healthcare Providers

Coordinated Care Plan

Evaluation Guide

Materials for Your Older Patients

Training & Continuing Education

Success Stories



Materials for Healthcare Providers

As a healthcare provider, you are already aware that falls are a serious threat to the health and well-being of your older patients. You play an important role in caring for older adults, and you can help reduce these devastating injuries.

The CDC's STEADI initiative offers a coordinated approach to implementing the American and British Geriatrics Societies' clinical practice guideline for fall prevention. STEADI consists of three core elements: Screen, Assess, and Intervene to reduce fall risk by giving older adults tailored interventions.

Educational materials specifically designed for older adults, their friends, and family are also included. See the list of materials included in the STEADI Toolkit.

Download materials below, or order hard copies from CDC-INFO on Demand.



Get Email Updates

To receive email updates about this topic, enter your email address:

Email Address

STEADI Basics

Clinical Tools

Functional Assessments

Medication Review

Fact Sheets

Graphics

Stay Independent Brochure

Talking about Fall Prevention with **Your Patients**



Innovation in Aging
cite as: Innovation in Aging, 2017, Vol. 00, No. 00, 1–9
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Original Research Article

Implementing STEADI in Academic Primary Care to Address Older Adult Fall Risk

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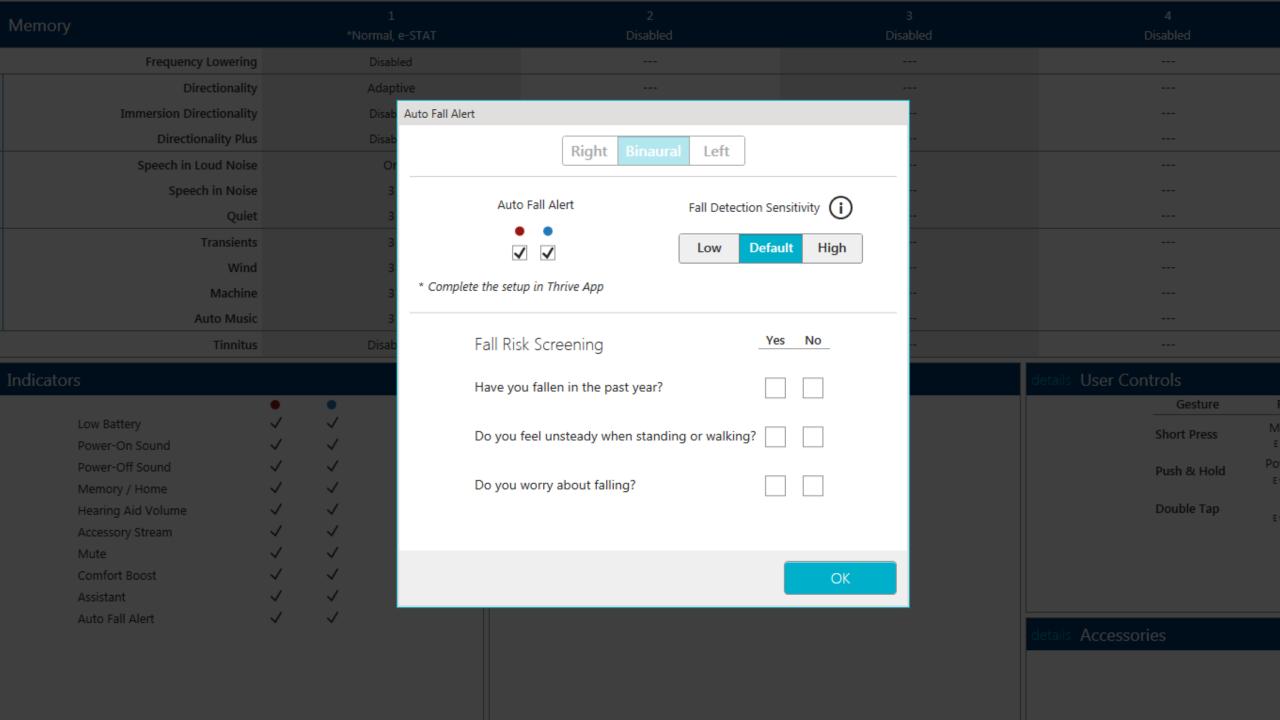
Simple Screening Questions

Have you fallen in the past year?

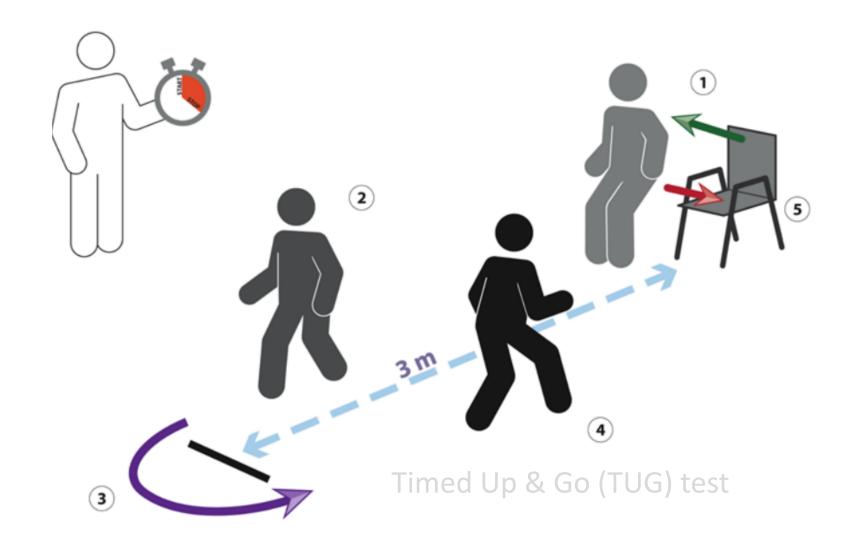
Do you feel unsteady when standing or walking?

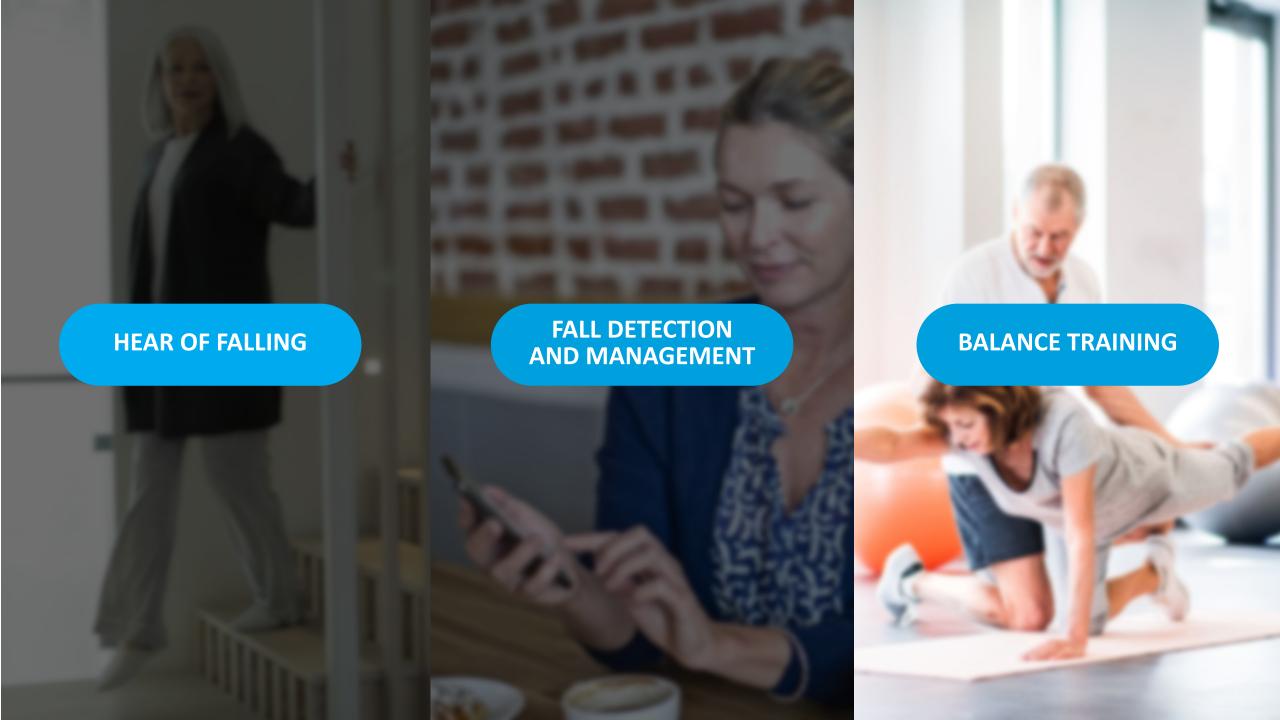
Do you worry about falling?

"Our analysis showed that using only the three key questions identified 95% of these high-risk patients, potentially reducing the time needed to screen patients."



Functional Screening





BALANCE

Balance disorders
Sensory impairments
Medication side effects
Comorbid conditions

BACKGROUND



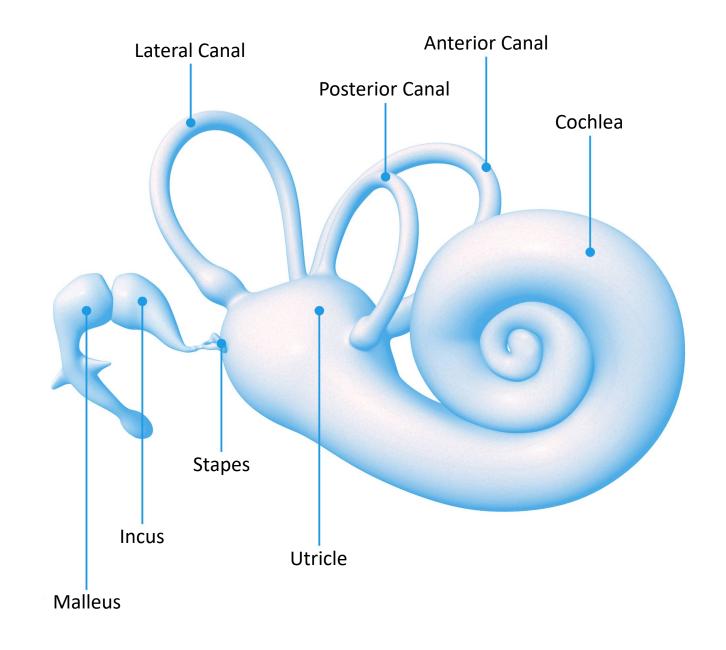
Hearing loss and vestibular deficits each **increase injury risk**



Balance deficits **are common** among hearing aid users



Balance habituation exercises can help alleviate vestibular deficits



Helping patients with balance

BARRIERS

Scope of Practice

Time

SOLUTIONS

Occupational and Physical therapy

Fall Prevention Programs



Search...

Q

a A



Economic Security

Healthy Living

Public Policy

Blog & News

Get Involved

Resources

Age+Action

Falls Prevention

Chronic Disease Management

100 Million Healthier Lives

Senior Hunger & Nutrition

Aging Mastery®

Find an Evidence-Based Falls Prevention Program in Your Area

Homepage > Healthy Living > Falls Prevention > Falls Prevention Awareness Week > How to Get Involved > Find an Evidence-Based Falls Prevention Program in Your Area

- · Area Agencies on Aging
- State Falls Prevention Coalitions
- ACL State and Tribal Evidence-Based
 Falls Prevention Program Grantees





Provide a structured, achievement-based workout plan

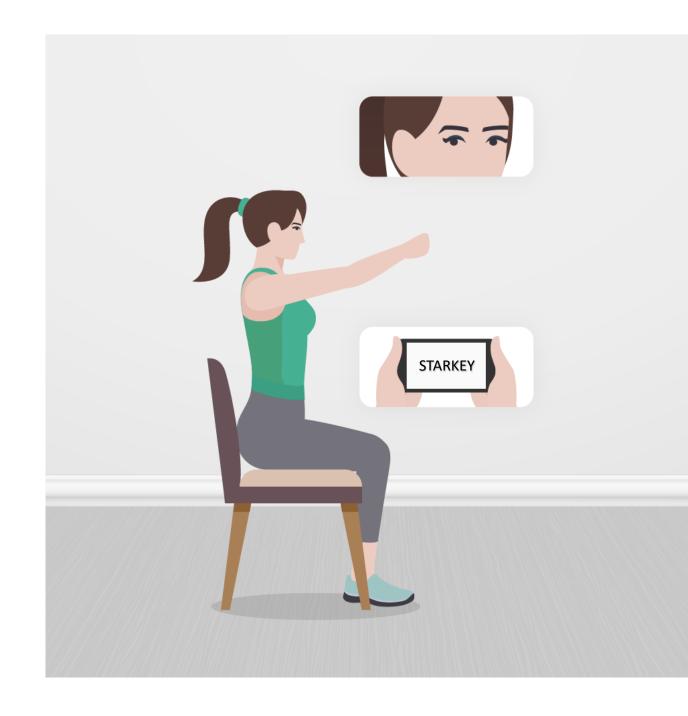
Track achievement and provide feedback

Exercises designed from evidence-based workout programs

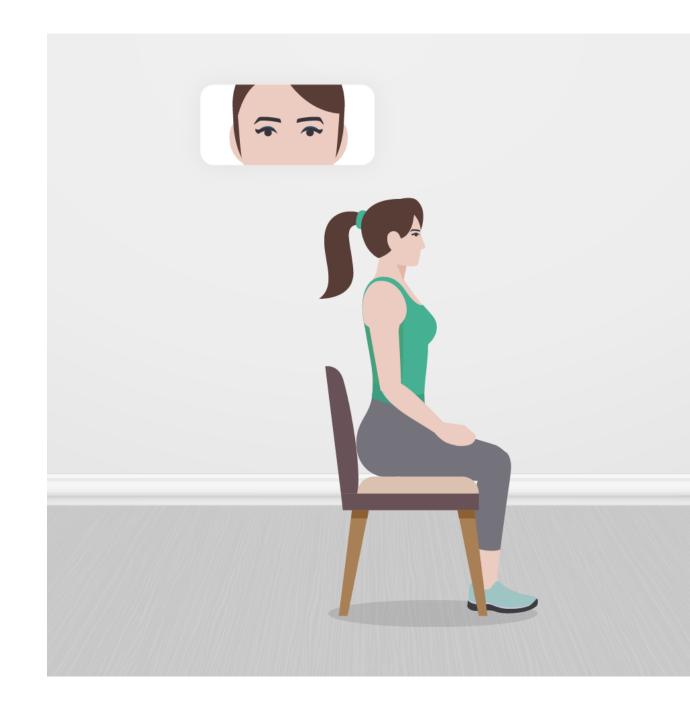
Designed to help improve balance, stability, strength, and gait



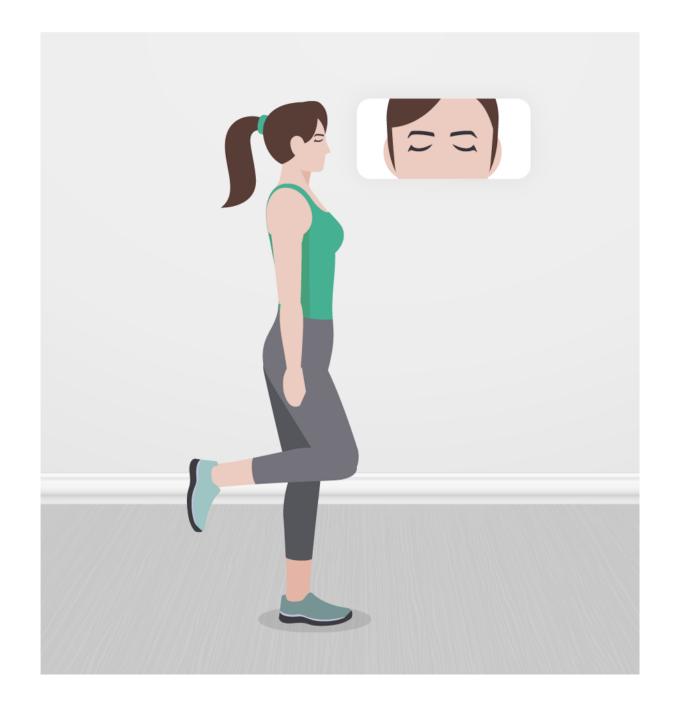
Guided Head Turns



Strengthening



Static Balance





HIGHER RISK

Of falling than the general population

FEAR OF FALLING

Can impact many facets of life

FALL ALERT SYSTEM

Restores confidence

BALANCE BUILDER

Designed to reduce risk of falling

Thank You

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