

Fall Risk Evaluation & Management

Jenny Roraback-Carson, MD

Gerontology & Geriatric Medicine
University of Washington

Last Updated: July 14, 2021



Disclosures

No conflicts of interest or relationships to disclose



Learning Objectives / Outline

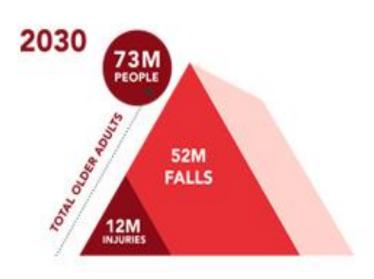
- Understand the prevalence and financial burden of falls and fall-related injuries.
- Appreciate the comorbidities and factors that raise the fall risk among those aging with HIV.
- Learn how fall risk is assessed and managed in a Fall Prevention Clinic and how to apply those elements to your practice.
- Drop the idea that a "mechanical ground level fall" is "non-medical" or not worthy of further evaluation or preventative efforts.
- Identify the common extrinsic and intrinsic factors that cause falls and how to address those that are modifiable.



Falls: Magnitude of the Problem







Approximately 1 in 4 older adults (>65yo) report falling each year.

Older Adult Falls Data (cdc.gov)



Falls: Magnitude of the Problem

 1 out of 5 falls causes a serious injury (broken bones or head injury).

3 million older people are treated in ERs for fall injuries annually.

 >800,000 patients per year are hospitalized because of a fall injury, most often head injury or hip fracture.



Financial Burden of Falls

- \$50 billion per year is spent on medical costs related to non-fatal fall injuries
- \$754 million is spent related to fatal falls
- Medicare and Medicaid shoulder 75% of these costs



Aging with HIV Increases Fall Risk

- Persons aging with HIV manifest "accelerated aging" with an earlier than expected occurrence of many diseases of aging.
- Patients with HIV have a high prevalence of several comorbidities and physical impairments associated with an elevated fall risk:
 - Frailty

- Neuropathy

- Sarcopenia

- Cognitive Impairment

- Low BMI
- Approx 75% of patients with HIV take at least 1 other Rx in addition to ART, and the most common of these are in the high fall risk category (cardiovascular and psychoactive meds).



Guidelines for Fall Prevention

- All persons aged 65+ should be screened for falls and fall risk at least once a year.
 - $\cdot \rightarrow$ 50+ for those with HIV:
 - "Assessment of mobility and frailty is recommended for patients aged 50 years or older..."
 - 2020 Recommendations of the International Antiviral Society—USA Panel

• Anyone with **gait or balance difficulty**, **2 or more falls** in prior 12 months, or **history of seeking medical attention** for a fall needs further assessment.



Fall Prevention in Clinical Practice

History of falls rarely elicited

Fall risk factors not identified

 Most elders seen in ED for falls had no recommendation or appointment for follow-up beyond acute injury



Why do people fall?

- Interaction between an individual's risk factors and the environment
 - A combination of intrinsic & extrinsic factors

Intrinsic Factors

- Age-related changes
- Chronic conditions
- Leg weakness
- Balance impairment

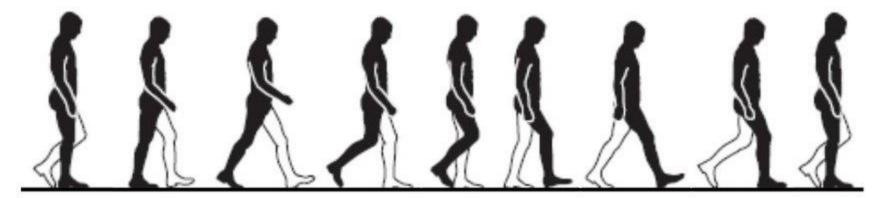
Extrinsic Factors

- Medications, Alcohol
- Footwear
- Environmental Factors
- Assistive device



Intrinsic Factors: Age-Related Changes

- Gait & balance
 - Decreased step height
 - Decreased proprioception
 - Slowed righting reflexes
- Vision
 - Reduced pupillary response to light variation
 - Thickening and loss of elasticity of lens





Intrinsic Factors: Chronic Conditions

- Diseases of the eye (cataracts, macular degeneration, glaucoma)
- Cardiovascular (orthostasis, aortic stenosis, bradyarrhythmias)
- Musculoskeletal (arthritis, foot deformities, chronic pain, spinal stenosis)
- Urological (incontinence, nocturia)
- Insomnia, sleep deprivation
- Neurological (CVA, dementia, peripheral neuropathy, Parkinson's disease*)



Orthostasis and Postural Dizziness

- Affects 30% of community-dwelling elders
- Causes can be intrinsic or extrinsic:
 - Neurogenic (Parkinson's disease, autonomic neuropathy)
 - Non-neurogenic (aortic stenosis, volume depletion, vasodilation,

deconditioning, postprandial)

- Common med classes:
 - Diuretics
 - Antihypertensives
 - · Alpha blockers: doxazosin, prazosin
 - · Antidepressants: paxil, effexor, trazodone
 - Antipsychotics: seroquel





Extrinsic factors: Polypharmacy, High-Risk Meds

- ≥4 meds = fall risk
- Certain classes of meds:
 - Psychoactive meds (benzos, high-dose SSRIs, sedative-hypnotics, Trazodone, TCAs)
 - BP meds (esp vasodilators, any BP med in high dose)
 - Anticonvulsants (esp Gabapentin)
 - Anticholinergics (Meclizine, Oxybutynin, ...and ask about OTCs Benadryl, Tylenol PM, & Dramamine)
 - Muscle relaxants
 - Opioids (in high doses), Tramadol aka "Trama-don't"



Extrinsic factors: Footwear



- The enemies:
 - Sandals
 - Bare feet
 - High Heels
 - Open-backed slippers
 - Smashed heels

- Open-backed shoes (mules/slides)
- Stocking Feet
- Flip-Flops
- Big shoes

- The allies:
 - Shoes with good sole contact area, closed-toe, covered heel are best
 - Athletic/canvas shoes associated with lowest risk.



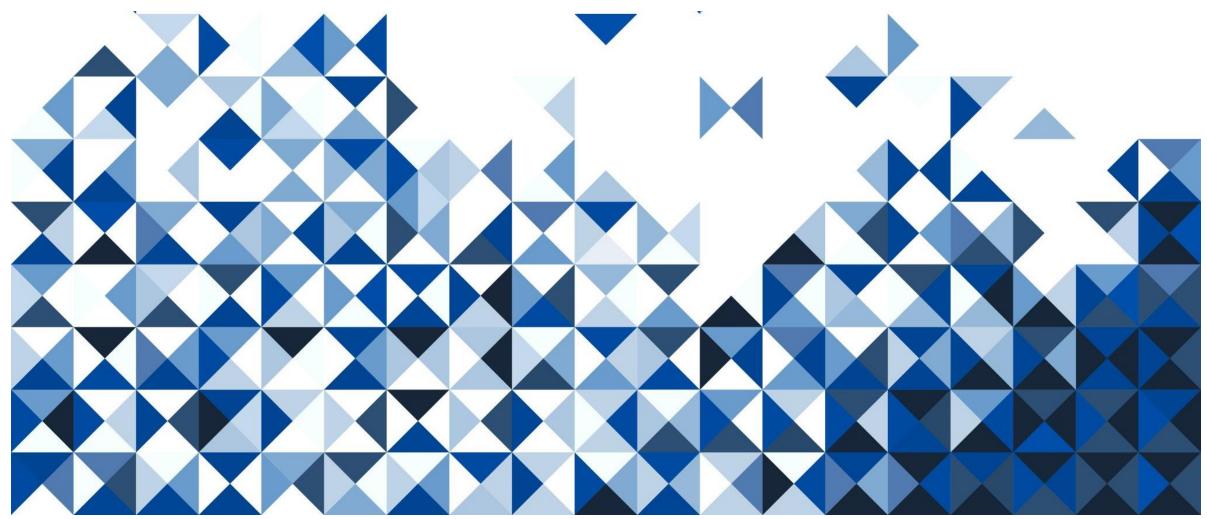
Extrinsic factors: Environmental Factors

- Inadequate lighting
- Loose objects on floor (throw rugs, cords, junk, etc.)
- Unsafe steps (broken, no railings)
- Items in hard to reach places
- Slippery tub/shower, lack of grab bars by toilet/shower
- Step stools, ladders
- Pets underfoot





Putting this all together...





Harborview Fall Prevention Clinic

- Comprehensive fall risk assessment and management for those who have fallen or have gait and balance problems
 - Aged 65+ and <65 with referral review
 - Outpatients (or nearing SNF discharge)
- Interdisciplinary approach
 - Physical therapy
 - Geriatric medicine
 - Social work
 - Pharmacy
 - Nutrition
- Dedicated medical assistant
- In-person or telephonic interpreter services





Harborview Fall Prevention Clinic

- Comprehensive identification of fall risk factors
- Gait and balance assessments
- Assistive device assessment, fitting, and recommendations
- Medication adjustment recommendations
- Patient/caregiver education, including written materials
- Targeted laboratory tests and imaging
- ...MOST of these elements can be done in the office of any PCP



After the Fall: A Practical Approach

History: Think SPLAT!

- (S) <u>Symptoms</u> preceding the fall
 - Dizziness, lightheadedness, vertigo, knee laxity, etc.
- (P) Previous falls or near falls
 - How frequent, in what setting, do they have a fear of falling



- At home or in community, on what surface, lighting, tripping hazards, on stairs, etc.
- (A) Activity at the time
- Multitasking? Hurrying? Turning? Reaching? Just stood up? Using walker/cane?
- (T) <u>Time</u> of fall
 - Time of day, ?cocktail hour, relationship to meds taken, meal eaten, etc.
 - How much time needed to get up from fall? >5min or required assistance → risk of long lie





After the Fall: A Practical Approach

- Key Physical Exam Components:
 - Orthostatics (can abbreviate to lying→standing, note postural dizziness regardless of BP)
 - Gait & balance evaluation:
 - Width of base
 - Step height, foot dorsiflexion, stride length
 - Truncal rotation, arm swing
 - Observe balance with turning
 - · Assistive device: proper fit, proper use, adequate support
 - LE strength ("Can you stand up from this chair without pushing off with your arms?" – don't worry about the TUG)
 - Feet sensation, proprioception, deformities
 - Look for tremor, rigidity, Parkinsonism (especially for backwards falls)



After the Fall: A Practical Approach

- Additional Physical Exam Components:
 - Visual acuity check if not done w/in 1yr
 - 20/40 or worse = fall risk
 - Bifocals/multifocal/transition lenses are a fall risk
 - Cardiac exam
 - Static balance testing
- Common lab studies, imaging:
 - B12 level, Vit D level, CK, TSH, Hct, BUN/Cr, DEXA





Go After the Modifiable Fall Risk Factors

Gait abnormality

Lower extremity weakness

Impaired balance

Medications

Orthostatic hypotension

Vision

Feet / footwear

Assistive device

Home environment



Treatment Plan – Frequent Components

- Exercise strength and balance
- Medication reduction ("de-prescribing")
 - Stop, taper with goal to stop, lower dose
- Home / environmental modifications (clutter, rugs, lighting, adaptive equipment)
- Behavioral modifications (avoid hurrying to answer phone / doorbell, no more step stools, arranging caregiver assistance for some tasks)
- Self-management of postural hypotension
- Footwear modification
- Vitamin D supplementation



Treatment Plan – Referrals

- Other healthcare providers:
 - Physical therapy
 - Cardiology
 - Memory and Brain Wellness Clinic

- Ophthalmology
- Neurology
- Geriatric Medicine / SeniorCare

- Community-based programs:
 - Exercise:
 - Enhance Fitness[®]
 - Tai Chi Tai Ji Quan: Moving for Better Balance®
 - Adult Day Health
 - Home Safety Evaluation:
 - One Step Ahead (King County) other programs available via AAA
 - Home Health



Thank you

- Thank you to Elizabeth Phelan, MD for slide sharing ©
- Questions? jenny5@uw.edu





Acknowledgment

The Mountain West AIDS Education and Training (MWAETC) program is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) as part of an award totaling \$2,886,754 with 0% financed with non-governmental sources.

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