

The Many Facets of Fall Prevention

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Jan. 2014

Objectives


- Attendees will be able to:
- describe the scope of major systems and factors that contribute to fall risks among the elderly in different settings.
- be aware of the current evidence-based fall prevention and safety initiatives used in various settings to prevent falls.
- use the five most essential components in fall prevention to develop treatment plans for their patients.
- distinguish between current evidence-based screening measures used in fall prevention.
- identify significant training resources for fall prevention programs in various settings.

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A FEW FALLS STATISTICS.....

Our Aging World



- Population aging is **unprecedented**
- Population aging has **profound implications**
- Population aging will be **enduring**
- Population aging is **pervasive but unique**
 - UN World Population 1950-2050 report

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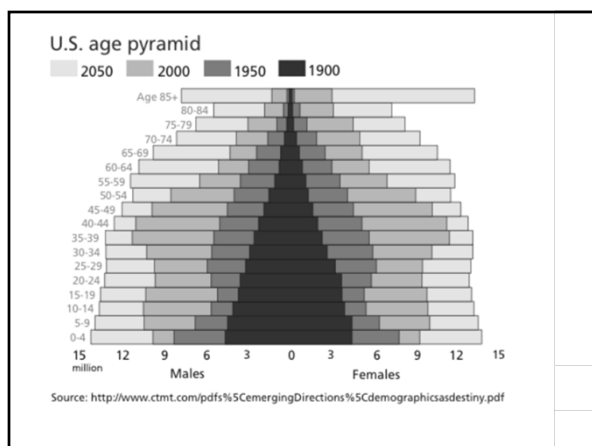
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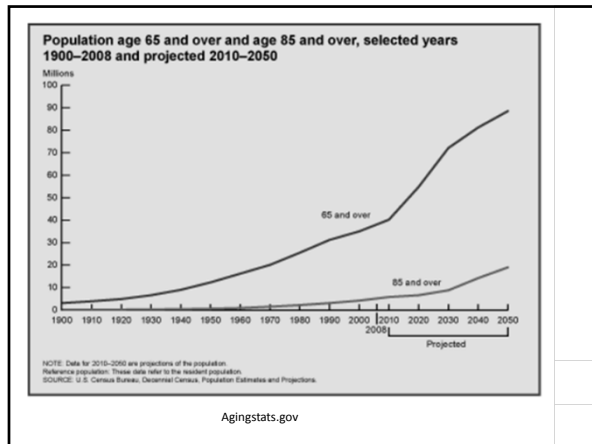
Our Aging World



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Aging America:

In the USA:


- **13%** > age 65

In the USA in 2050:

- **23%** > 65



Women in the USA:

- > 65 = **58%**
- > 85 = **70%**



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Aging Florida:

- In 2005: **17%** Floridians ≥ 65
- In 2010: **18.2%** Floridians ≥ 65
- By 2050: a **90%** increase in elderly over age 65....
 - Polivka, et al. 1996; US Census Data, 2010

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Falls-A Huge Problem



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Definition of a Fall

- “A fall is an event which results in a person coming to rest inadvertently on the ground or other lower level and other than as a consequence of a violent blow.” (Tideiksaar, 1997)



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What About Near Falls?

- Studies suggest that frequent near falls are as significant an indicator of overall risk as an actual fall. (Teno, Kiel et al., 1990)



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Who Falls?



- **30% of community dwellers >65 (1 out of 3)**
Tinetti, et al., 1988
- **50%+ of nursing home patients**
Rubenstein, et al., 1994
- **10-50% of fallers fall repeatedly**
• (Fletcher, et al. 2002; Wood, et al., 2007)
- **75% of slips/trips/falls unreported**
Quail, 1994

Who Are At Risk For Falls?

- **Women > men**
- **Advanced age**
- **Functionally more impaired**
- **Taking multiple medications**
- **Fallers of both sexes:**
 - take more steps to turn 360 degrees
 - can not stand up from a chair without pushing off
 - had a higher prevalence of antidepressant use
 - had impaired position sensation.
• Lipsitz, et al., 1991

Robbins Model of Fall Risk

(Robbins, Rubenstein, et al. 1989)

- Considered just these risks among both institutionalized and non-institutionalized elders:
 - A. Hip weakness
 - B. Decreased Balance
 - C. Use of 4 or more medications
- 12% one year fall risk if none of these risk factors present
- Similar results in both groups
- **100% one year fall risk if all 3 risk factors present**

The Five Highest Risks for Falls In the Typical Elderly PT Patient

- Muscle weakness
- History of falls
- Gait deficit
- Balance deficit
- Use of an assistive device

• Rubenstein & Josephson, 2001



Consequences for Falls

Injury
Pain
Fear
Altered quality of life
Expense
Mortality



Consequences for Falls

Injury---20-30% (Sterling, 2001)

Pain

Fear of falling--54% (Zijlstra, 2007)

Altered quality of life

Expense---averages \$19,440 (Rizzo, 1998)

Leading cause of injurious death

(Murphy, 2000)



A Few More Falls Stats

- 25-89% of hospital adverse events are falls
 - Medicare no longer wants to pay for adverse event related injuries
- 10-20% of fallers fall repeatedly

Fall Related Injuries Among Elderly

- Falls are most common cause of traumatic brain injuries (TBI). (Sterling, O'Connor, et al., 2001)
- In 2000, 46% of fatal falls among older adults were due to TBI. (Steven, JA, MMWR, 2006)
- Most fractures (fx) among older adults are caused by falls. (Iager, Weiss, et al., 2000)
 - The most common fx: spine, hip, forearm, leg, ankle, pelvis, upper arm, and hand. (Bell, Talbot-Stern, et al. 2000)

Cost of Falls

- In 2003: >13,700 people 65 yrs.+ died from falling
- In 2010: >21,700 people 65 yrs.+ died from falling
 - (Probably underestimated)
- 2.3 million ER visits for nonfatal injuries in 2010
 - 662,000+ of these patients required hospitalization (CDC, 2014)
- In 2010, the direct medical costs of falls, adjusted for inflation, was \$30 billion.
- By 2020 estimated direct cost is expected to reach \$43.8 billion.
 - www.cdc.gov/ncipc/duip/preventadultfalls.htm

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Fear of Falling

"A lack of self-efficacy that one may avoid falls while doing everyday activities."

Tinetti, 1990



Fear of Falling

- Can be protective



Are Elderly Fearful of Falling?

- Widely present in elderly:
 - Up to 54% community dwelling elderly
 - 30% have FoF without a hx of falls
 - 29-92% post falls or in nursing homes

(Howland, et al., 1993; Tinetti, et al., 1989; 1994; 1995; Lach, 2002)



Fear of Falling

- Self-fulfilling prophecy
- Independent risk factor for falls
(Vellas, Wayne, et al., 1997)



The Downward Spiral of Fear

- Scared of Falling
- Loss of Confidence (restricted activity)
- Weakness
- Injurious Fall(s)
- Bed Immobility
- Complications of Bed Rest
- Decubiti, weakness, pneumonia
- Death



Hip Fractures



- By 2030, US hip fx are projected to reach 289,000, an increase of 12%. (Stevens, Rudd, 2013)
- Fallers 75+ yrs. are 4x-5x more likely than those 65 to 74yrs. to be admitted to a LTC facility for a year or longer. (Scott, JC, 1990)

Many never return home again.....

- Approximately half of all fallers who fracture their hips are never functional walkers again
- 20% will die.



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TYPES OF FALLS

Fall Types

- Accidental falls
- Anticipated physiological falls
- Unanticipated physiological falls




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RISK FACTORS FOR FALLS

Risk Factors for Falls

- Extrinsic--37%
- Intrinsic--63%
- Falls are multifactorial
- Falls are synergistic




• (Tinetti, et al, 1988)

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Risks are synergistic



Complex, changing interaction

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A Few Intrinsic Risk Factors

- **Age > 65**
- Poor mobility
- Cognitive impairment
- Incontinence
- History of falls
- Medical conditions
 - DM
 - PD
 - CVA
 - OA
- Sensory deficits (vision, hearing, sensation)
- Poor nutritional status
- Emotional distress / depression
- Bereavement

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A Few Extrinsic Risk Factors

- Medications affecting balance/cognition
- Polypharmacy
- Inactivity
- Clutter
- Assistive devices
- Surface transitions
- Inability to provide appropriate nutrition
- Weather
- Assistive Devices

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<http://www.stoptheclot.org/article130.htm>



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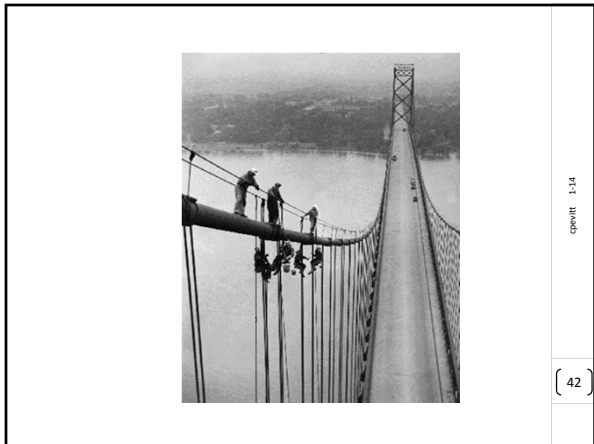


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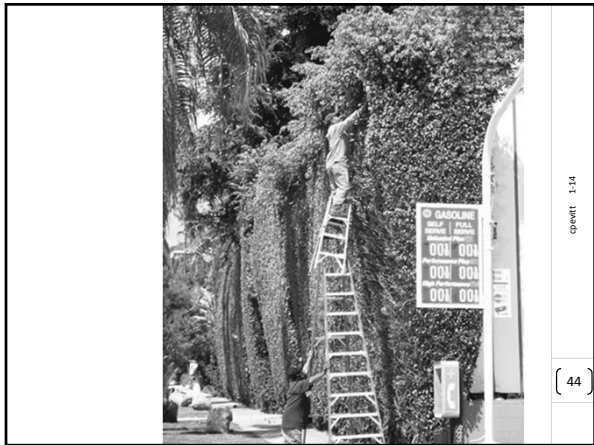
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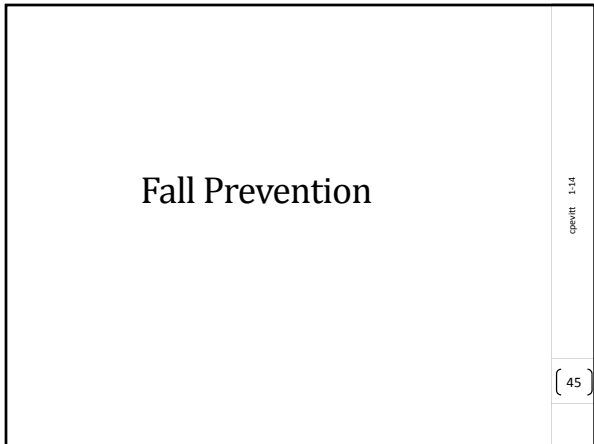












Major Initiatives

- Prevention and Screening for Fall Risk
- Interdisciplinary Team
- Post Fall Assessment
- Nutrition
- Exercise
- Injury Prevention

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The Ideal: Multidisciplinary Team

- Hx of fall circumstances
- Medication review
- Medical history review
- Mobility testing
- Vision testing
- Gait and balance testing
- Neurologic function
- Cardiovascular assessment
- Foot assessment
- Home assessment

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FALL RISK ASSESSMENT

American Geriatric Society Clinical Practice Guidelines

- All older people under the care of a **health professional** should be asked about occurrence of falls at least once a year.
- All older people who report a **single fall** should be observed performing the **"get up and go" test** AND any unsteadiness should lead to further fall risk assessment.
- All older people who report **recurrent falls should be referred for a fall risk assessment**
 - performed by a clinician with appropriate skills and experience

A Crisis of Limited Resources....

- The American Geriatric Society (AGS) and partners created evidence-based Fall Prevention Clinical Screening Guidelines:
 - The strategic approach to falls and fracture prevention has three stages:
 - 1. Identification of high-risk groups of older people.
 - 2. Detailed assessment of high-risk older people to identify individual risk factors for falls or fractures.
 - 3. Intervention to reduce the identified risk factors
- (AGS, 2012; Beattie, 2014)

What is Low Risk?

- **Low risk does NOT mean no risk.**
 - No history of falls
 - No gait or balance difficulties
 - Can be counseled to:
 - Maintain an active lifestyle
 - Monitor medications
 - Annual eye exam
 - Make timely home modifications
- (Beattie, 2014)



By Tony Overman, The Olympian, via AP
"Old" Turck, 82, left, of Kelowna, B.C., powers to the finish line July 28 in the men's 50-meter dash at the Washington State Senior Games track and field competition in Tumwater, Wash.

What is Moderate Risk?

- Reporting a single fall
- No difficulty or unsteadiness in eval. of gait and balance
- Counsel to adopt fall prevention strategies
 - Home modifications
 - Proper footwear
 - Proper balanced diet
 - Podiatry exam annually
 - Monitor medications
 - Eye exam annually
 - Referral to community based fall prevention and physical activity programs (example: Tai Chi)

(Beattie BL, 2014)

What is High Risk?

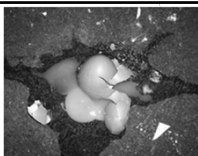
- Persons with high risk demonstrate the following:
 - Recurrent falls in the past year OR
 - Serious fall suggesting high risk of further falls
 - Needs medical care following a fall
 - Difficulties in walking or balance
 - Certain Diagnoses
 - (Beattie, 2014)
- Refer or perform further assessment



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FALL RISK ASSESSMENT

Post Fall Assessment



SPLATT:

- S=Symptoms at the time of the fall
- P=Previous falls?
- L=Location of fall
- A=Activity at the time of the fall
- T=Time of fall
- T=Trauma? (Physical and Psychological)

Tideiksaar, 1997

A Falls Assessment should include:

- A history of falls circumstances
- Clinical assessment and review (individual risk)
- Identification of comorbidities (including cardiovascular review)
- Annual Vision Checkup
- Medication review—"brown bag" visit for outpatients
- Physical conditioning and/or a history of rehabilitation or exercise programs
- Education: health professional and patient/ resident
- Sensory evaluation (vision, neurological, lower limb sensation)
- Environmental assessment and modification
- An assistive device/walking aid review
- Continence management.

How Can Older Adults Prevent Falls?

Reduce Fall Risks

- Exercise regularly
- Annual "Brown Bag" medication review (more often if needed)
- Annual Eye Exam
- Home Safety Assessment (CDC STEADI has a free checklist)

Lower Fracture Risk

- Adequate Calcium & Vitamin D
- Weight bearing exercise
- Osteoporosis screening and, if needed, treatment

Falls at Home



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Falls at Home

- Usually in daytime
- Only **5%** during risky activities
 - (Tinetti, et al., 1988)

- Folks fall during normal routines
 - walking, bending, changing positions, entering/exiting homes and vehicles, & using bathroom facilities

(Campbell, et al., 1989; Graafmans et al.1996).



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Risk Factors in the Home

- | | |
|--|---|
| <ul style="list-style-type: none"> • Intrinsic • Female gender • Age • Pain • Weakness • Impaired balance • Inebriation • Side effects of medications • Insomnia • Illness • Failing vision • Hurrying • Fear of Falling | <ul style="list-style-type: none"> • Extrinsic • Hx of falls • Improper footwear • Polypharmacy • Stairs • Bathrooms without handrails • Pets • Bending over • Assistive devices/ WC • Clutter • Items in poor repair: rugs • Loose cords • Inadequate lighting • Inadequate handrails • Wet, slippery floors |
|--|---|

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Home Fall Prevention Strategies

- Reduce environmental risks
- Provide adaptive equipment as needed
- Train/educate patient and family in fall prevention
- Improve function
- **GOAL: Enhance daily functional performance and falls self-efficacy**

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General Home Fall Safety

- Secure area rugs--carpeting lessens the severity of fall injuries
- Create clear pathways between rooms.
- Respect patient preferences--ex. cruising
- Eliminate wobbly chairs, ladders and tables.
- Install easy-access light switches at room entrances
- Keep electric cords out of pathways, but not under a rug.
- Have furniture high enough to make it easy to stand up.
- Repair loose flooring immediately.
- Wipe up spills immediately.

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Entrances

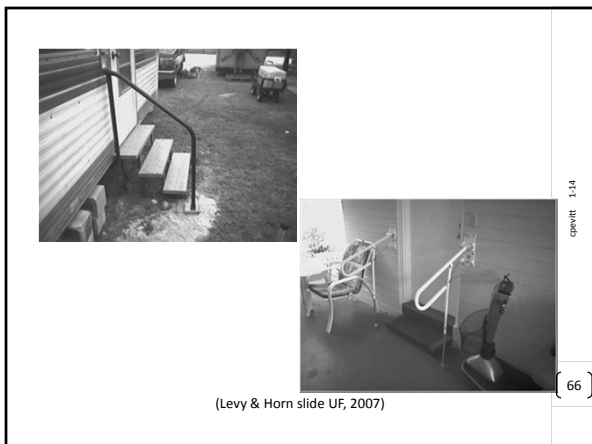


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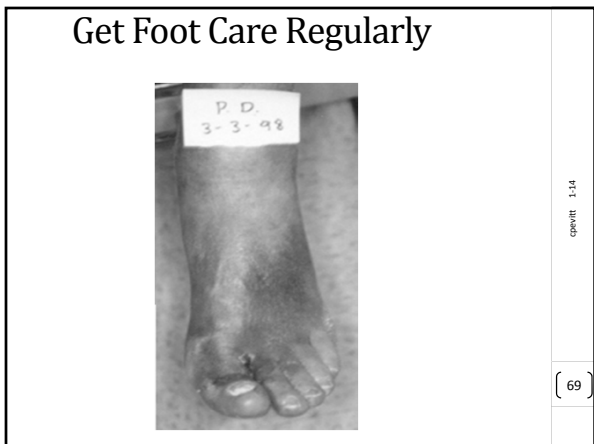
Shoe Beware



Better Shoes



Get Foot Care Regularly



















Kitchen Fall Prevention

- Repair loose flooring.
- Remove throw rugs.
- Use nonskid, low-glare floor wax.
- Clean up spills immediately
- Don't stand on chairs or boxes to reach upper cabinets. Instead rearrange the contents.....
- Store frequently used items at waist-high level.
- If you must climb, use only a step stool with an attached handrail so you are supported

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Use adequate illumination



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Bedroom Safety



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- Clear clutter from the floor.
- Keep a lamp/flashlight near the bed.
- Put secure carpet in the bed room.
- Install night-lights along the route between the bedroom and the bathroom.
- Sleep on a bed that is easy to get into and out of.
- Keep a telephone near your bed.

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Stair Safety

- Repair loose steps immediately-- keep free of debris.
- Light both the top and bottom of stairs
- Install and use handrails on both sides of the stairway.
- Put nonslip treads on each bare-wood step.
- Do not use patterned, dark or deep-pile carpeting.
- Solid colors show the edges of steps more clearly.
- Do not place loose area rugs at the bottom or top of stairs.

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AAOS, 2007

Stairs Fall Prevention Self-Efficacy

- Teach your patients:
- It is smart to have someone help you on the stairs!
 - They can carry your things
 - They can be a handrail
 - They can hold the door.....



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Bathroom Safety

- Adequate, well-installed grab bars in all needed places –shower, toilet, etc.
- Slip-resistant bathmat next to tub
- Liquid soap dispenser for bathtub/shower wall.
- Nonskid adhesive textured strips on the bathtub/shower floor.
- Sturdy, plastic seat on nonskid bathmat in the tub or shower if person is unsteady or cannot lower him/herself to the floor of the tub.
- Raised toilet seat or special toilet seat armrests.
- Replace glass shower enclosures with non-shattering material. AAOS, 2007

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More Safety At Home.....

- Reducing Intrinsic Risks:
- See Eye Dr. yearly
- Plentiful, reachable, low-glare lighting
- Non-slip grab bars, strips in bathroom
- Throw out all old medicine
- Do a Brown Bag Dr. visit annually
- Exercise or walk with a friend

- Reducing Extrinsic Risks:
- Mark the edge of first & last steps with contrasting color
- Install handrails on both sides of stairs, steps
- Light switches at head/foot of stairs
- Make sure slacks & dresses do not drag on the floor

- Reducing Extrinsic Risks (cont'd):
- Eliminate tripping hazards/clutter
- Place needed items within reach
- Multiple telephones, reachable from the floor
- Secure all carpeting
- Pets should contrast with floor covering
- Securely carpet slippery floors
- Wipe up spills promptly
- Shoes must fit and have no trailing laces
- Use sleep socks with tread on soles
- Install a chair glide for stairs
- Use bedside floor to ceiling poles

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Community Falls

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Fall Risks in the Community


- **Intrinsic**
- Female sex
- Hx falls
- Age
- Impaired gait/balance
- Weakness
- Fear of falling
- Pain
- Side effects of meds
- Failing vision
- Medical comorbidities
- Hurrying
- Wandering
- Poor executive decisions

- **Extrinsic**
- Stairs
- Escalators
- Bathrooms without handrails
- Curbs
- WC cutouts in sidewalks
- Improper footwear
- Use of assistive devices
- Traffic crossings
- Parking lots and car curbs
- Wind and weather
- Uneven surfaces
- Inadequate lighting
- Jostling crowds
- Slippery surfaces
- Polypharmacy
- Inappropriate alcohol use

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Use Common Sense.....



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Wear Protective Garments During Fall Prone Activities



President Bush and Gordon Ramsey



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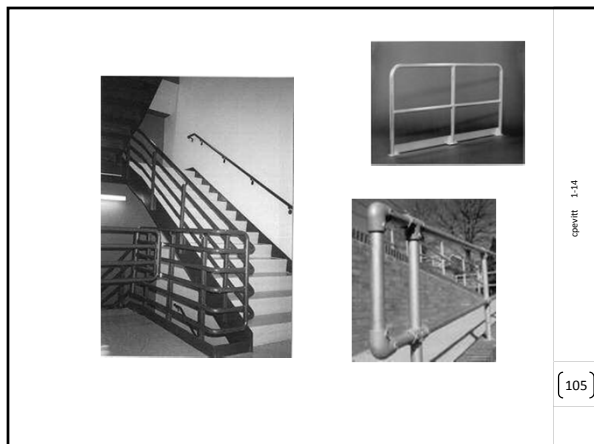


Use Handrails

45mm to 50mm for hand and ramp handrails
50mm
45mm

Handrails should be easy to grip and a contrasting color, with edge protection.

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Ramps

Necessary for the chairbound & very useful for disabled people and for the blind.

Keep dry and free of obstacles and hazards.



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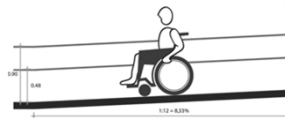
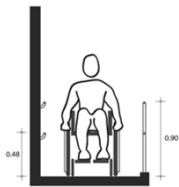
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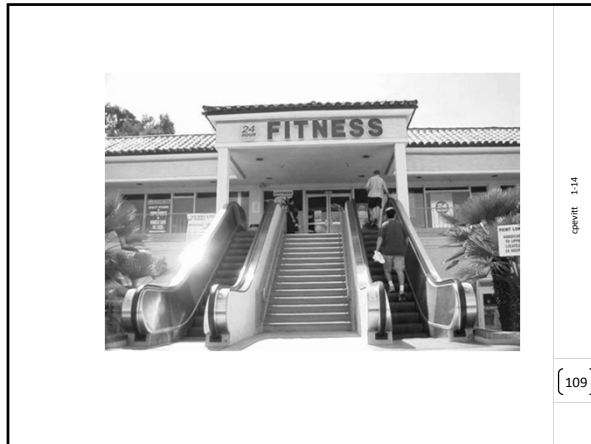
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www.xtec.es/.../barriers/imagenes/app



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Preventing Community Falls

- Elderly should wear a belt or suspenders as needed
- See an optician yearly
- Plentiful, low-glare lighting
- Provide automatic doors
- Highlight & repair broken pavement and uneven segments of sidewalks
- Highlight edges of steps, curbs, parking bolsters with bright paint or contrasting color
- Provide & maintain elevators & ramps
- Offer handrails on both sides of stairs & sloping walkways
- Time traffic lights for slower pedestrians
- Use non-glare, non-slip wax
- Handicapped accessible entrances and rails in bathrooms & corridors
- Handicapped seating in public venues
- Plentiful park benches with arms along main thoroughfares
- Slow elevator door closing speed
- Provide kneeling or low threshold buses

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Hospital Falls



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Risk Factors for Hospital Falls

<ul style="list-style-type: none"> • Illness • Multiple comorbidities • New surroundings • Understaffing • Pain • Anesthesia • Insomnia • Misjudgment • Physical weakness • Rapid fatigue 	<ul style="list-style-type: none"> • Medication side effects • Used to prompt help • Bed is different • Chair is different • Delirium/Dementia • Loss of control • Patient care devices • Slick floors • Siderails • Restraints
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High Risk Groups



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Fall Prone Diagnoses

- Parkinson's Disease-perhaps 100%
- CVA-50%
- Amputees-50%
- Fallers-50%
- Dementia-50%



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Health Care Facilities

Most falls occur during shift change
& during transfer activities.



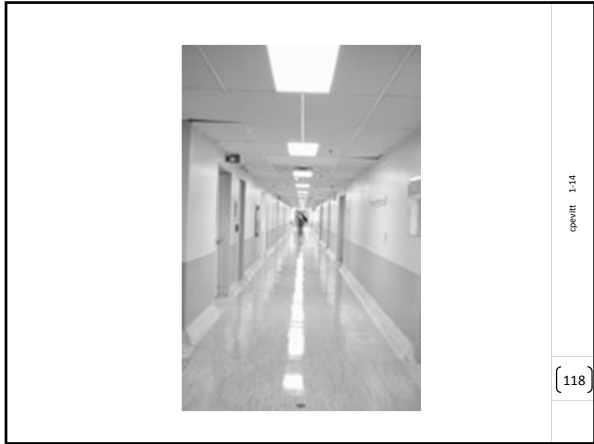
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Preventing Hospital Falls

- Teamwork
- Nightlights
- Comfort Rounds
- Adequate staffing
- Remove catheters asap
- Place fall prone pts. near nursing station
- Bedside mats
- Bed alarms
- Contrasting toilet seat color
- Remove uneven thresholds
- Bedside commodes
- Low Beds
- Sitters
- Restraints for life threatening events

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Black Ribbon Blog
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Nursing Home Falls



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Not Every Site Is The Same.....

- Lord et al.'s work suggests that those who can stand unaided but have many fall risk factors constitute the highest priority group for fall interventions (Lord, et al., 2003)
- Risk factors for falls for people living in residential care facilities who can and cannot stand unaided are somewhat different

Falls in Nursing Homes

- Fall rate is over 50% per year
- Admitted patients are sicker
- Understaffed and aging nursing force
- Inadequate coverage for physical therapy.



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Highest Risks for Falls

- Muscle weakness
- History of falls
- Gait deficit
- Balance deficit
- Use of an assistive device



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Falls Risk Factors in Nursing Homes

- | | |
|---|---|
| <ul style="list-style-type: none"> • Intrinsic risks: • Male sex • Age • Hx of falls • Co-morbid conditions • Pain • Weakness • Altered balance/gait • Impatience • Insomnia • Delirium or dementia • Infections especially UTI • Fear of falling • Drug intolerance or drug-drug interactions • Depression/Grieving • Terminal drop | <ul style="list-style-type: none"> • Extrinsic risks: • New admission • Clutter, cords • Incontinence • Wet or slippery floors • Time of day • Distance from nursing station • Inadequate staffing • Unfamiliar setting • Inadequate lighting at night • Improper footwear • Use of an assistive device • Loss of cruising cues • Loss of dependable kin |
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Strategies for Fall Reduction at Nursing Homes



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- Check for pyrexia



- Check supine AND standing blood pressure



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**Treat Pain Aggressively
Use Comfort Rounds**

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Clean Up All Spills Promptly



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Avoid total darkness.
Use red nightlights.



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Use modular wheelchairs for better fit, improved comfort, and to help prevent wheelchair falls.

Tips and falls can produce serious injuries & death.

(Chen, Jang, et al., 2011)

Keep WCs in good repair



Help Prevent Wheelchair Falls

- Individualized fit, and positioning for skin protection and comfort
- Reduce restraints
- Safer environment
- Regular attention to Comfort, hunger, thirst, bathroom needs.
- Close observation
- Strengthening program
- Staff awareness
- WC alarms
- Ambulation programs



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Avoid Restraints

- Routinely using restraints does not lower the risk of falls or fall injuries. They should not be used as a fall prevention strategy.

(Capezuti, Strumphf, 1996; Castle, Engberg, 2009)

- Restraints, if inappropriately used, can actually increase the risk of fall-related injuries and deaths.

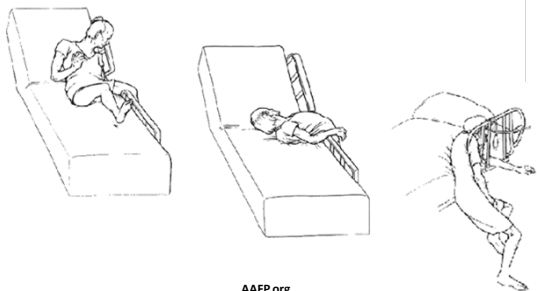
(Rubenstein 1997; Castle, Engberg, 2009)



Poseyvest.com



Use lower beds and avoid bedrails to avoid serious fall injuries.



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Hire Adequate Staff

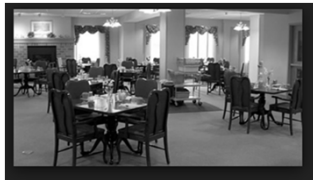
- So patients do not give up on asking for bathroom help
- Start comfort rounds every 2hrs.



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Assisted Living



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Hip Protectors




Best for high risk institutionalized individuals where follow-up for compliance is possible.




(Sawka, Boulos, et al., 2005)

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Weighted vests

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Use It or Lose It

- Transitional Movements
- Static Balance Activities
- Weight Shifting
- Walking
- Tai Chi
- Up From Floor
- Berg Balance Scale (Berg, et al., 1989)

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FALL Injury

- Recognize the danger
- Screen/ Assess further/Re-eval As warranted
- Reduce risk factors
 - Environment and behavioral
 - Improve what can be improved
- Increase the level of assistance
- Teach safe behaviors

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Useful Fall Risk Screening Tests

- Falls History
- Timed Single Leg Stance
- 30 second chair stand
- Timed Up and Go (TUG)
- Multidirectional Functional Reach
- Berg Balance Scale
- ABC (Activities Balance Confidence) Scale
- 4 Stage Balance Test
- See the STEADI Project materials at CDC


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Building Balance Skills


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Assess 3 Balance Systems

- Vestibular
- Proprioception
- Visual
- Evidence Based Measure:
- Modified CTSIB: Modified Clinical Test of Sensory Interaction and Balance
- Other useful measures focusing on Function:
- Berg Balance Scale
- Timed Up and Go
- Functional Reach in 3 Directions
- <http://youtu.be/TMJR-JvG4Os>

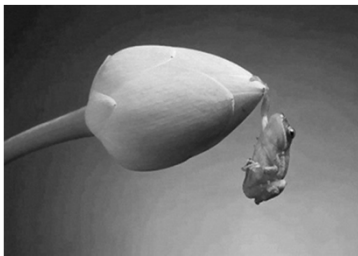
To Decrease Fear of Falling

- 1. Reduce risks
- 2. Teach falls self-efficacy
 - Getting up from the floor
 - Crossing a street
 - Carrying packages
- 3. Balance exercises such as Tai Chi
- 4. Increase strength
- 5. Role play

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Teach Your Patients How to Fall—



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AND How to Get Back Up!



AAOS, 2007

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Recent Studies on Up From Floor

- Weakness: Predominantly quads, upper thigh ms.
- Reduces Fear of Falling
- Assistance and practice: Focus on strength and balance in kneeling and transitional movements

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Chronical.northcoastnow.com

EVIDENCED BASED FALL PREVENTION PROGRAMS

Risk Levels

- Per the Falls Free Initiative from National Council on Aging: Assess the Risk
- Use the Risk Level to help determine the program that fits your patient

High Risk
Moderate Risk
Low Risk

(Beattie, 2014)

Evidence Based Low Fall Risk Reduction Programs

- **Tai Chi**
- **Enhance Fitness**
- **Fit and Strong**
- **Walk With Ease**
 - (Beattie, 2014)

Tai Chi: Moving for Better Balance

- Developed by Oregon Research Institute, Eugene, OR
- 2-3 times/wk for at least 3 months—relatively fit and aware elders
- Decreased falls, decreased fear of falling
- www.cdc.gov/HomeandRecreationalSafety/Falls/compendium/1.4_tai_chi.html



Senior-health.knoji.com

Enhance Fitness

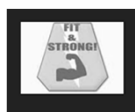
- Developed by University of Washington in collaboration with Senior Services
- Group exercise program for elders focusing on stretching, flexibility, balance, low impact aerobics, and strength-training
- Group meets 3x/wk led by a certified fitness instructor
- <http://www.projectenhance.org/EnhanceFitness.aspx>



www.projectenhance.org

Fit and Strong

- Developed by University of Chicago
- For elders with arthritis
- 3x/wk for 8 wks
- Each session: 60 min. exercise program, 30 min. education and a group problem-solving session to help participants learn how to incorporate exercise into their daily lives.



www.fitandstrong.org

Walk With Ease

- Community based program of the Arthritis Foundation to promote education about living with arthritis and other chronic health conditions.
- Multiple components: Walking, health education, stretching, strengthening, and motivational exercises
- Meets 3x/wk for 6 wks, led by trained leader.
- Results: Increased activity, walking, walking speed and distance, decreased pain and decreased depression.



Arthritis Foundation
Walk With Ease Program™



Arthritis.org

Evidence Based Moderate Fall Risk Reduction Programs

- **Matter of Balance**
- **Stepping On**
- **Otago Exercise Program**
 - (Beattie, 2014)

Stepping On

- Multifaceted evidence-based program for community dwelling elders to reduce falls (Beattie, 2014)
- Reversing inactivity that can lead to social isolation and loss of muscle strength and balance, increasing the risk of falling----Designed for OTs
- 31% fall reduction in the study (Clemson, Cumming, et al., 2004)
- Stepping On aims to break that cycle
- <http://www.ncoa.org/improve-health/center-for-healthy-aging/stepping-on>

Otago Exercise Program

- Developed at Otago University, New Zealand (Campbell, Robertson, 1997; Beattie, 2014)
- Program of progressive leg strengthening and balance exercises
- 5 visits: 4 in first two months and one booster at 6 months.
- PTs can deliver after reading the manual. Nurses trained during a 2-day training program and with ongoing supervision by a PT.
- Participants are expected to ex. 3x/wk (30min.) and walk outside 2x/wk.
- **35% reduction in falls & reduced fall related injuries for men and women.**
- www.acc.co.nz

A Matter of Balance

- A Matter of Balance is an evidence-based health promotion group program for older adults that uses cognitive-behavioral **techniques to reduce the fear of falling** (Howland & Lachman, 1998; Tennstedt et al., 1998).
- Orig. research by the Roybal Center for Enhancement of Late-Life Function at Boston University aimed at decreasing fear of falling and related inactivity
- Included Exercise, role playing, falls self efficacy, balance
- Significant improvements regarding confidence in performing everyday activities without falling and perceived ability to manage the risk of falling (Tennstedt et al., 1998).
- Please visit http://www.mainehealth.org/workfiles/mh_PFHA/FeesFlyer.pdf for the most recent Matter of Balance training

A Word About Patient Self Management

- Limited practitioners
- Limited allowable visits
- Increasingly complex comorbidities
- Stanford University's Chronic Disease Self-Management Program

- <http://patienteducation.stanford.edu/programs/cdsmp>
www.restartliving.org

Summary of Reducing Fracture Risk

- **Get adequate calcium and vitamin D—from food and/or from supplements.**
- **Get screened and, if needed, treated for osteoporosis.**
- **Follow up with physician for all falls---see a physical therapist for a tailored program of fall prevention exercises including:**
 - Do weight bearing exercise.
 - Learn balance activities, safely
 - Get follow-up boosters for your exercise program
 - Learn fall prevention self-efficacy

Summary of Hip Fx Prevention

- **Prevent Falls**
- **Protective padding during high risk periods**
- **Stay active**
 - Exercise regularly-- focusing on increasing leg strength and improving balance, and ex. that get more challenging over time. Tai Chi programs are especially good.
- **Review medicines—**
 - both prescription and over-the counter—to reduce interactions such as dizziness or drowsiness.
- **Make homes safer**
 - reducing tripping hazards, adding grab bars inside and outside the tub or shower and next to the toilet, adding railings on both sides of stairways, and improving the lighting in their homes.
- **Annual eye exam**
 - Consider single vision glasses for outside ambulation
- **Improve Balance**
- **Strengthen Bone**
 - Weight bearing exercises, nutrition, Ca+2, Vitamin D

Summary of Fall Prevention

- Reduce risks
- Remove clutter
- Improve nutrition esp. calcium & Vit. D
- Get regular checkups
- Ask about every fall
- Assess risk level
 - Use teamwork for complete clinical assessment if high risk
- Increase activity
- Use protection and common sense as needed

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Get out there and stop falls!!!



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Valuable Resources

- **STEADI (Stopping Elderly Accidents, Deaths and Injuries) Toolkit** available at: www.cdc.gov/injury/STEADI
- **National Council on Aging. (2005). *Falls free: Promoting a national falls prevention action plan*.** Washington, DC: Various Authors.
- **Cochrane Database Updates on Fall Prevention**
- **Also: Check out various fall prevention efforts by the CDC, VA, AGS, AAOS, BGS**

STEADI

- Stopping Elderly Accidents, Deaths, and Injuries
- www.cdc.gov/injury/STEADI
- The CDC's STEADI project incorporates a very large amount of evidence in assessment, prevention, teaching and treating fall prevention.
- And it is all on line for downloading and free.

Essential Reading

- American Geriatrics Society (AGS), British Geriatrics Society (BGS), and American Academy of Orthopedic Surgeons (AAOS) Panel on Falls Prevention. Guideline for the prevention of falls in older persons. *Journal of the American Geriatrics Society*. 2001; 49: 664-672.
- Patient Safety Center of Inquiry:
• <http://www.vish8.med.va.gov/patientsafetycenter/default.asp>
- National Patient Safety:
• <http://www.va.gov/NCPS/SafetyTopics/fallstoolkit/index.html>
- Tideiksaar, R. (1997) *Falling in Old Age*. Springer, New York.

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•The end.



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