

Fall in elderly

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Outline:

- ✓ **Introductions of falls in elderly.**
- ✓ **Cause and risk factors of falls.**
- ✓ **Consequences of falls in elderly.**
- ✓ **Assessment of fall in elderly.**
- ✓ **Preventing falls in older people.**
- ✓ **Summary.**

Definition of Falls

A fall is defined as an event which results in a person coming to rest inadvertently on the ground or floor or other lower level.

Introduction

- ❑ Falls and fall-related injuries are a common & serious problem for older people.
- ❑ Fall potentially life-threatening events and may be simply the first signs of single problem.
- ❑ It lead to hospitalization and increase cost and burden on society and even lead to death.

OLDER ADULT FALLS

A Common Concern

IN 2014:



1 in 4 older adults reported a fall.



More than
7 MILLION

of those falls required medical treatment or restricted activity for at least a day.



More than
27,000

older adults died as a result of falls — that's 74 older adults every day.

OLDER ADULT FALLS

Startling Statistics



1 second

An older adult falls every second of every day.



1 in 4

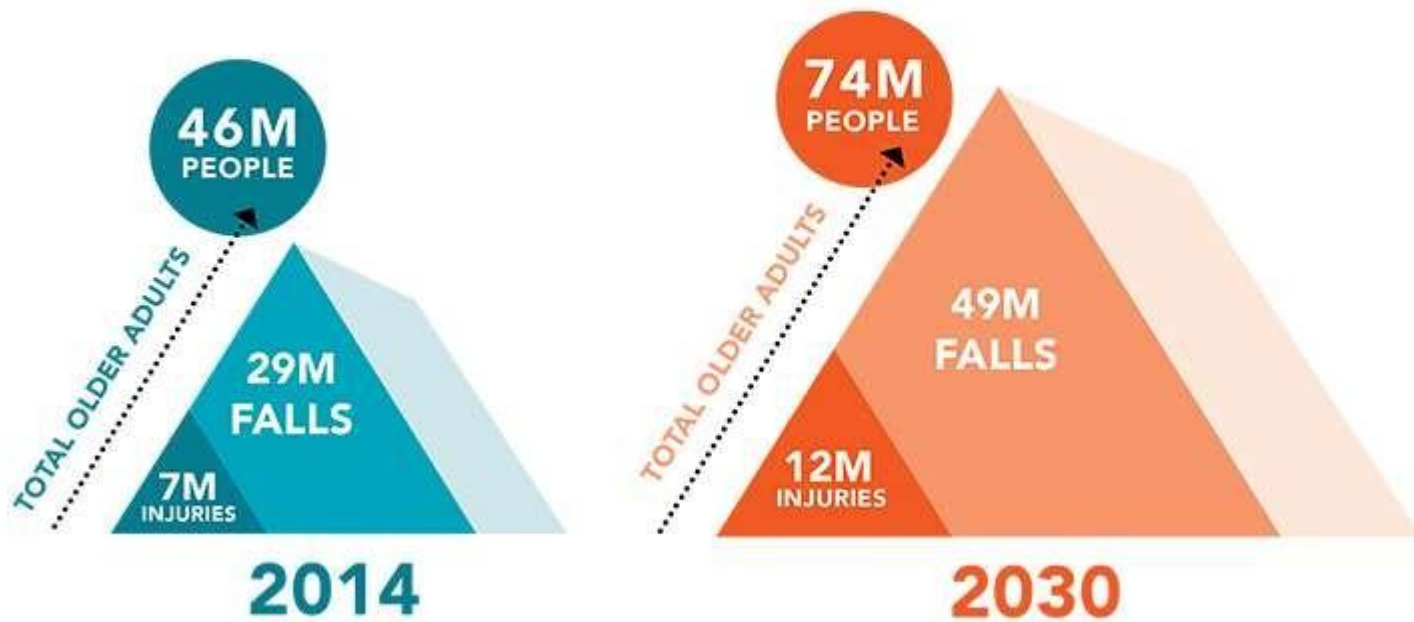
One in four older adults reported a fall in 2014.



#1 cause

Falls are the #1 cause of hip fractures.

OLDER ADULT FALLS A Growing Burden





Intrinsic risk factors:

Age Related changes
(Visual function
Neurological
function,
Musculoskeletal
function(
Diseases
Female sex

Extrinsic risk factors:

Drugs
Environmental
Improper
assistive
devices



Table 2. Risk Factors for Falls in Older Persons

Potentially modifiable

Cardiac

- Cardiac arrhythmias
- Congestive heart failure
- Hypertension

Environmental hazards

Medication use (see Table 3; risk is higher when four or more medications are used simultaneously)

Metabolic

- Diabetes mellitus
- Low body mass index
- Vitamin D deficiency

Musculoskeletal

- Balance impairment
- Foot problems
- Gait impairment
- Impaired activities of daily living
- Limited activity
- Lower extremity muscle weakness
- Musculoskeletal pain
- Use of an assistive device

Potentially modifiable *(continued)*

Neurologic

- Delirium
- Dizziness or vertigo
- Parkinson disease and other movement disorders
- Peripheral neuropathy

Psychological

- Depression
- Fear of falling

Sensory impairment

- Auditory impairment
- Multifocal lens
- Visual impairment

Other

- Acute illness
- Anemia
- Cancer
- Inappropriate footwear
- Nocturia
- Obstructive sleep apnea
- Postural hypotension
- Urinary incontinence

Nonmodifiable

- Age older than 80 years
- Arthritis
- Cognitive impairment/dementia
- Female sex
- History of cerebrovascular accident/transient ischemic attack
- History of falling
- History of fractures
- Recently discharged from the hospital (within one month)
- White race

(I HATE FALLING)

- I:** Inflammation of joints (or joint deformity)
- H:** Hypotension (orthostatic blood pressure changes)
- A:** Auditory and visual abnormalities
- T:** Tremor (Parkinson's disease or other causes of tremor)
- E:** Equilibrium (balance) problem
- F:** Foot problems
- A:** Arrhythmia, heart block or valvular disease
- L:** Leg-length discrepancy
- L:** Lack of conditioning (generalized weakness)
- I:** Illness
- N:** Nutrition (poor; weight loss)
- G:** Gait disturbance

Table 3. Medications Associated with Falls

Anticonvulsants*	Digoxin
Antidepressants (tricyclic antidepressants and selective serotonin reuptake inhibitors)*	Diuretics
Antihypertensives	Laxatives
Antiparkinsonian drugs	Opioids*
Antipsychotics (typical and atypical)*	Nonbenzodiazepine, benzodiazepine receptor agonist hypnotics*
Benzodiazepines (short- and long-acting)*	Nonsteroidal anti-inflammatory drugs
	Sedatives and hypnotics*

*—These medications are on the 2015 Beers Criteria list for potentially inappropriate medication use in older adults who have a history of falls or fractures.³¹

Consequence of falls

Physical:

Skin tear

internal bleeding

subdural hematoma

Hip fracture

**Immobilization/
disability**

Hospitalization

Psychological:

Fear of falling

increased dependency

Depression

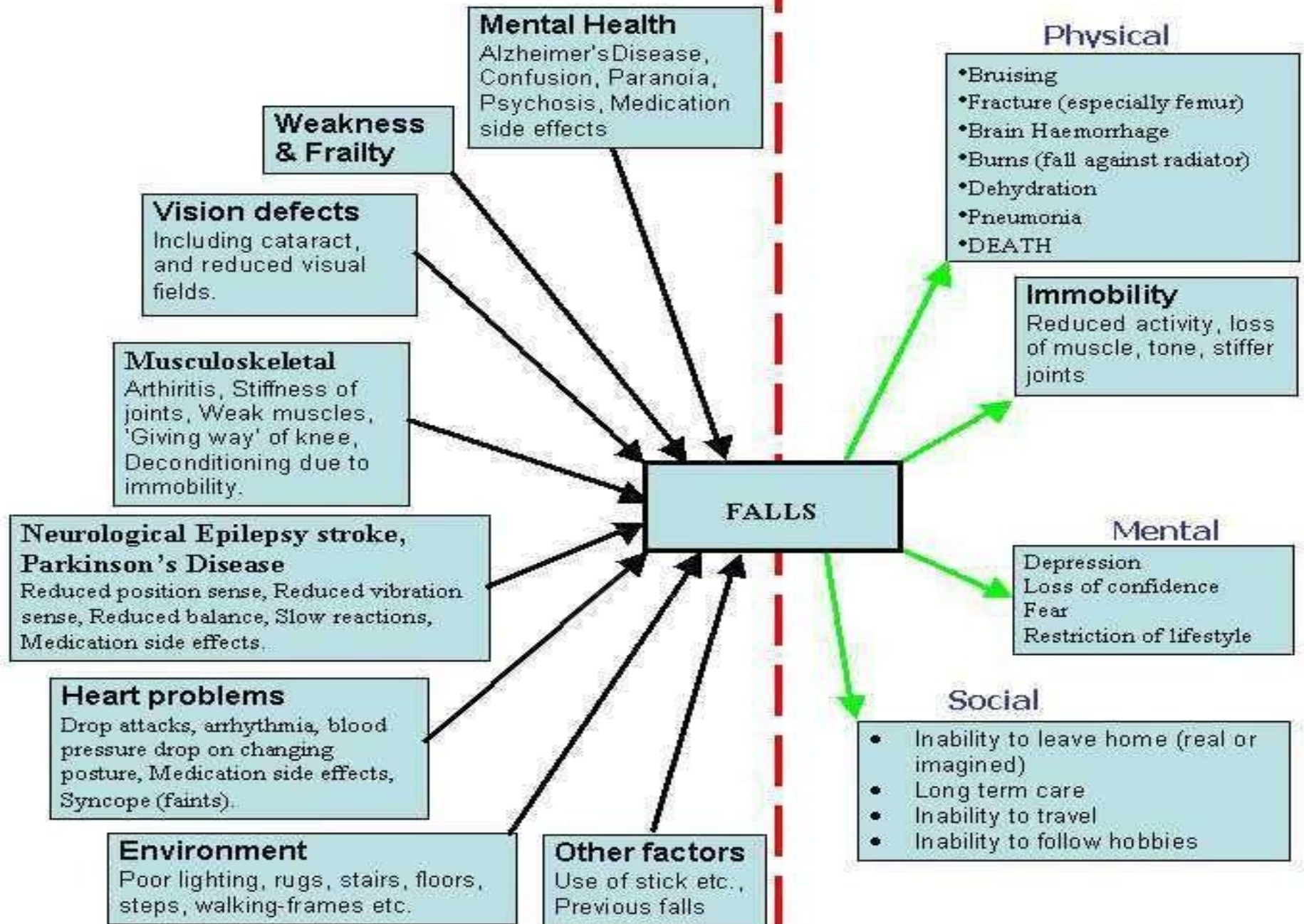
Anxiety

loss of confidence

social withdrawal

CAUSES

EFFECTS



ASSESSMENT OF FALL

How to approach elderly with fall



History

Examination

Investigations

History

A thorough history is essential to determine:

- Fall (mechanism of fall, Location, Activity, Injury related to the fall, witness/help(
- Associated symptoms concurrent with a fall (change in level of or loss of consciousness, chest pain, palpitations, dizziness, vertigo or lightheadedness, Symptoms related to a change in position ,headache, weakness/tingling/numbness or acute change in mental status(

- previous falls and whether the falls were the same or different in character.
- medical history
- Medications
- Functional history
- Social history

Physical Examination

General looking

Hydration status

postural changes

Vital signs(orthostatic hypotension)

Visual & Hearing abnormalities

Cardiovascular: murmur ,presence of arrhythmias & carotid bruits

Neurologic and mental evaluation:

looking for focal deficits, assessment of lower extremity peripheral nerves, proprioception, vibration sense, and tests for cortical, cerebellar, and extrapyramidal functions is important.

Musculoskeletal: lower-extremity weakness, presence of contractures, limitations or pain in range of motion

Gait and balance: abnormalities, lower extremity strength, and joint function.

Environmental assessment:

Lighting, walking surface, furniture, clothing, and equipment

Testing and imaging

- Complete blood count, Electrolyte, Blood urea nitrogen , Creatinine , Glucose , Thyroid function, Vitamin B₁₂ levels
- X-ray
- ECG, ECHO, EEG
- Brain imaging(CT/MRI)
- DEXA(dual-energy x-ray absorptiometry)

The American Geriatrics Society and British Geriatrics Society recommend that all adults older than 65 years be screened annually for a history of falls or balance impairment.

Screen



Identify patients
at risk for a fall

Assess



Identify modifiable
risk factors

Intervene



Use effective clinical and
community strategies

www.cdc.gov

STEADI Stopping Elderly
Accidents, Deaths & Injuries

OLDER ADULT FALLS

A Preventable Problem



CDC, healthcare providers, and older adults and their caretakers can work together to prevent falls.

1.

SCREEN

Screen for fall risk using these 3 questions:

- Have you fallen in the past year?
- Do you feel unsteady when standing or walking?
- Do you worry about falling?

2.

REVIEW

Review and manage medications linked to falls.

3.

RECOMMEND

Recommend vitamin D for improved bone, muscle, and nerve health.

Check Your Risk for Falling

Circle "Yes" or "No" for each statement below			Why it matters
Yes (2)	No (0)	I have fallen in the past year.	People who have fallen once are likely to fall again.
Yes (2)	No (0)	I use or have been advised to use a cane or walker to get around safely.	People who have been advised to use a cane or walker may already be more likely to fall.
Yes (1)	No (0)	Sometimes I feel unsteady when I am walking.	Unsteadiness or needing support while walking are signs of poor balance.
Yes (1)	No (0)	I steady myself by holding onto furniture when walking at home.	This is also a sign of poor balance.
Yes (1)	No (0)	I am worried about falling.	People who are worried about falling are more likely to fall.
Yes (1)	No (0)	I need to push with my hands to stand up from a chair.	This is a sign of weak leg muscles, a major reason for falling.
Yes (1)	No (0)	I have some trouble stepping up onto a curb.	This is also a sign of weak leg muscles.
Yes (1)	No (0)	I often have to rush to the toilet.	Rushing to the bathroom, especially at night, increases your chance of falling.
Yes (1)	No (0)	I have lost some feeling in my feet.	Numbness in your feet can cause stumbles and lead to falls.
Yes (1)	No (0)	I take medicine that sometimes makes me feel light-headed or more tired than usual.	Side effects from medicines can sometimes increase your chance of falling.
Yes (1)	No (0)	I take medicine to help me sleep or improve my mood.	These medicines can sometimes increase your chance of falling.
Yes (1)	No (0)	I often feel sad or depressed.	Symptoms of depression, such as not feeling well or feeling slowed down, are linked to falls.

Total _____

Add up the number of points for each "yes" answer. If you scored 4 points or more, you may be at risk for falling. Discuss this brochure with your doctor.

Evaluate gait, strength, and balance

- Recommended test:

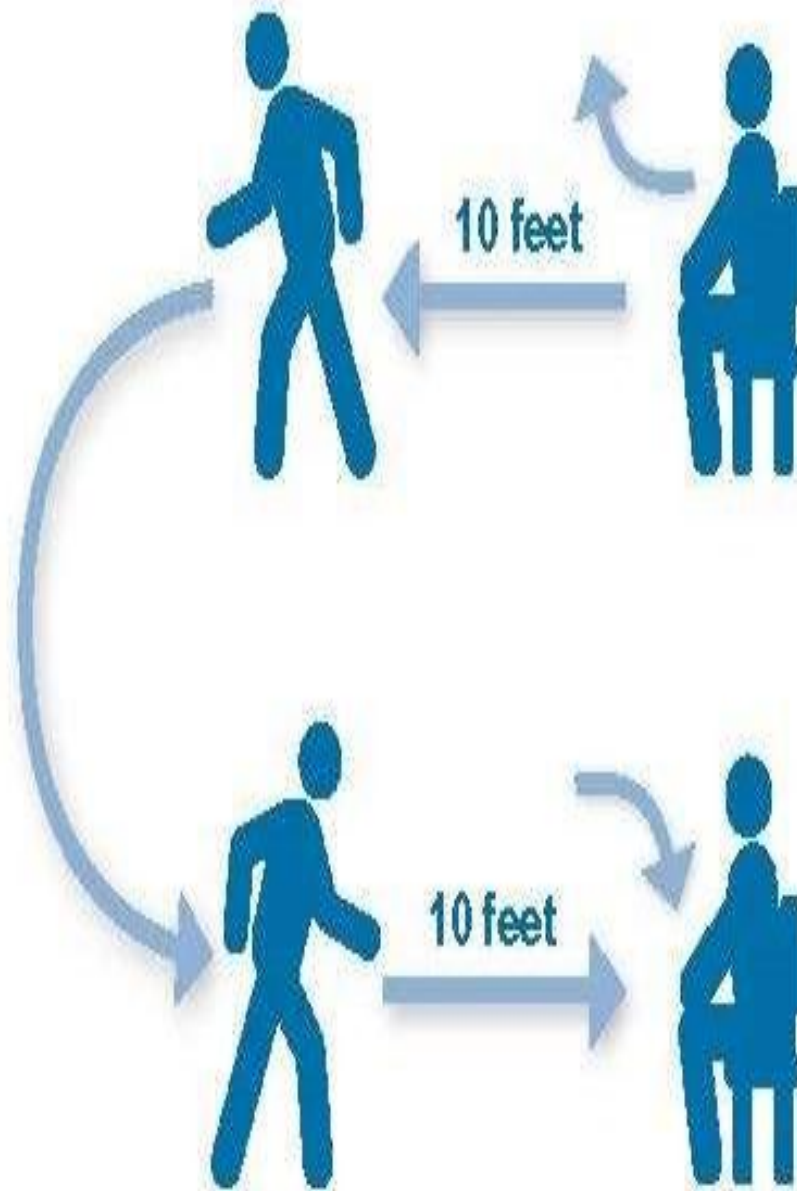
Timed Up and Go

- Optional tests:

-30Second Chair

Stand 4-Stage

Balance tests



The 4-Stage Balance Test





Patient _____

Date _____

Time _____ AM PM

Instructions to the patient:

- I'm going to show you four positions.
- Try to stand in each position for 10 seconds.
- You can hold your arms out, or move your body to help keep your balance, but don't move your feet.
- For each position I will say, "Ready, begin." Then, I will start timing. After 10 seconds, I will say, "Stop."

	① Stand with your feet side-by-side.	Time: _____ seconds
	② Place the instep of one foot so it is touching the big toe of the other foot.	Time: _____ seconds
	③ Tandem stand: Place one foot in front of the other, heel touching toe.	Time: _____ seconds
	④ Stand on one foot.	Time: _____ seconds

30-Second Chair Stand

Purpose: To test leg strength and endurance

Equipment: A chair with a straight back without arm rests (seat 17" high), and a stopwatch.

① Instruct the patient:

1. Sit in the middle of the chair.
2. Place your hands on the opposite shoulder crossed, at the wrists.
3. Keep your feet flat on the floor.
4. Keep your back straight, and keep your arms against your chest.
5. On "Go," rise to a full standing position, then sit back down again.
6. Repeat this for 30 seconds.

NOTE:
Stand next to the patient for safety.

② On the word "Go," begin timing.

If the patient must use his/her arms to stand, stop the test.
Record "0" for the number and score.

③ Count the number of times the patient comes to a full standing position in 30 seconds.

If the patient is over halfway to a standing position when 30 seconds have elapsed, count it as a stand.

④ Record the number of times the patient stands in 30 seconds.

Patient _____

Date _____

Time _____ AM PM



SCORING

Chair Stand Below Average Scores

AGE	MEN	WOMEN
60-64	< 14	< 12
65-69	< 12	< 11
70-74	< 12	< 10
75-79	< 11	< 10
80-84	< 10	< 9
85-89	< 8	< 8
90-94	< 7	< 4

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- <https://youtu.be/3HvMLLIGY6c>
- https://youtu.be/BA7Y_oLEIGY



PREVENTION OF FALL



Fall Prevention

Help Prevent and Reduce Falls



1 in 4 Americans
over the age of 65 **fall each year**



Every 11 seconds
an older adult is in the **emergency room**
being treated for a fall



Every 19 minutes
an elderly **patient dies**
from a fall

In 2015, medical costs for falls totaled more than \$50 billion

Common Causes for Falls



- Low blood pressure
- Poor balance and impaired mobility
- Limited physical-activity endurance and muscle weakness
- Foot problems that cause pain
- Impaired vision

5 Simple Steps to Help Prevent Falls



Stay Active

A good exercise program includes activities to improve balance, strength, and flexibility



Speak up

Talk to your doctor about taking supplements to improve bone, muscle, and nerve health



Eye Exam

Get your vision checked annually as poor vision can increase the likelihood of falling



Keep Your Home Safe

- Install handrails and grab bars
- Use non-slip mats
- Wear socks with a non-slip tread
- Wear slip resistant soles in the shower



Learn the Facts

In reality most falls can be prevented. Learn more about fall prevention and debunking the myths of falls among the elderly

AliMed is here to help with everything you need for fall management

To learn more about what products we offer, please visit alimed.com/patient-safety-fall-management/

Five Safe Steps to Prevent Falls Among Elderly

1. Participate in regular physical activity. Exercise makes you stronger, increases flexibility and improves balance and coordination. ...
2. Remove hazards in your home. ...
3. Review your medications regularly. ...
4. Have your vision and hearing checked once a year. ...
5. Talk to your family members and enlist their help.

5 STEPS
to prevent falls
among elderly adults



Multifactorial falls risk assessment

- ✓ identification of falls history
- ✓ assessment of visual impairment
- ✓ assessment of cognitive impairment and neurological examination
- ✓ cardiovascular examination and medication review.
- ✓ assessment of gait, balance and mobility, and muscle weakness
- ✓ assessment of osteoporosis risk
- ✓ assessment of the older person's perceived functional ability and fear relating to falling
- ✓ assessment of urinary incontinence
- ✓ assessment of home hazards

Multifactorial interventions

An intervention with multiple components that aims to address the risk factors for falling that are identified in a person's multifactorial assessment.

MULTIFACTORIAL INTERVENTIONS

Multifactorial interventions should include:

**Exercise, particularly balance, strength,
and gait training**

**Vitamin D supplementation with or without
calcium**

Management of medications

Home environment modification

**Management of postural hypotension, vision
problems, foot problems, and footwear.**

- ❖ Improve home supports.
- ❖ Provide opportunities for socialization and encouragement.
- ❖ Involve the family.
- ❖ Provide follow-up.

Rehabilitation

Adequate rehabilitation physically, socially, and psychologically of injured person is very important post fall.





SUMMARY

Elderly aged 65 or above

Healthcare professional should routinely ask about falls



Identify if being at risk of falling



Multifactorial risk assessment



Multifactorial risk intervention



Encourage participation in falls prevention programmes & provide information and education