Fall Prevention

Fall Prevention

Getting Up From A Fall

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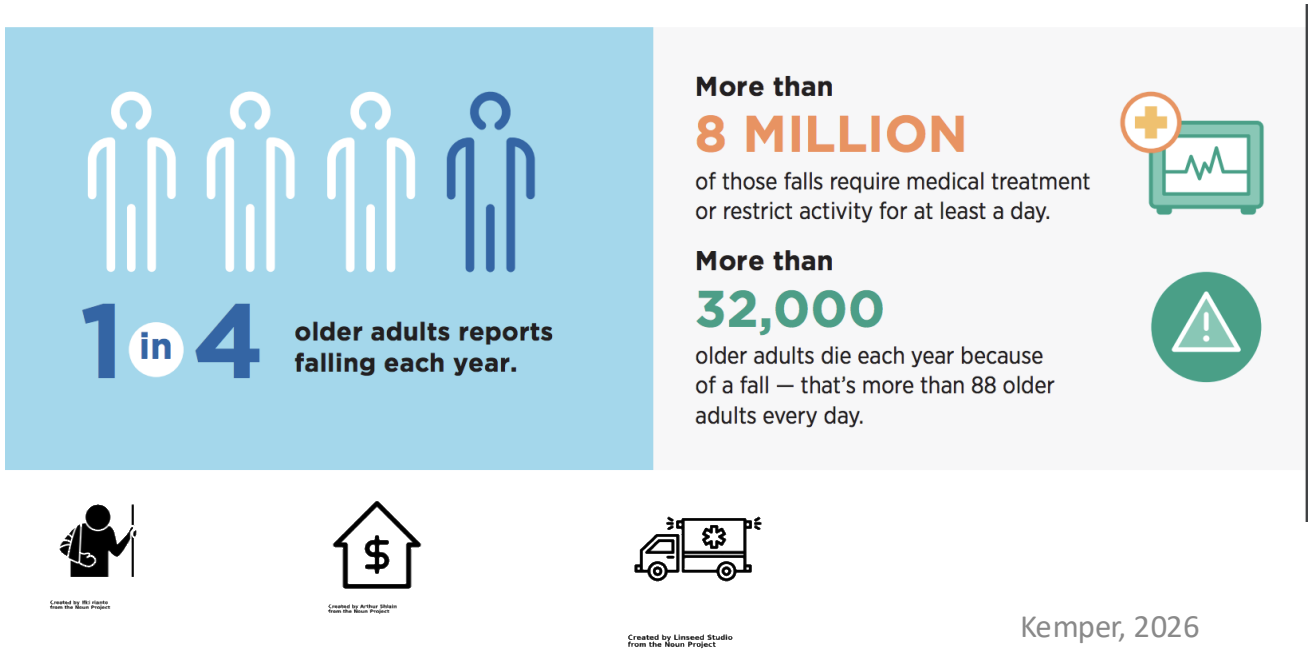
Goals for Today

- Aging, Balance, and Fall Risk
- Strategies to protect your independence
- What to do if you fall

Do YOU worry about falls? Why? Why Not?

Why falls are worth your “attention”.

- Falls are a serious public health problem.
- Injuries from falls can rob you of your independence, and rob you of your life.



A fall is an **unintentional change in position,** coming to rest on the ground, floor, or onto the next lower surface (e.g. onto a bed, chair or bedside mat).

Includes falling from a seated, standing or reclined starting point.

SC Department of Health

Get the Facts

- More than 1 out of 4 adults aged 65 and older fall each year.[1]
- More than 80% of hip fractures are caused by falling.[1]
- Falls are the most common cause of traumatic brain injuries.[1]
- From 2019-2023, falls were the leading cause of unintentional injury deaths among South Carolina residents 65 and older.[2]
- In 2023, 725 South Carolinians 65 and older died as a result of an unintentional fall.[2]
- In 2023, nonfatal unintentional fall-related injuries among South Carolinians 65 and older accounted for almost 12,300 hospitalizations and 59,700 emergency department visits.[3]

Leading Cause of Injury Deaths in Greenville County, by Age Group

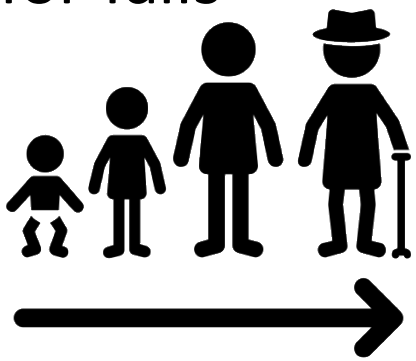
Age Group	Leading Cause of Injury Death	Number of Total Deaths Due to Injury
0-9 Years	Other and unspecified accidents and their resulting complications	**27**
10-17 Years	Motor vehicle crashes	**19**
18-24 Years	Motor vehicle crashes	**63**
25-34 Years	Accidental poisoning and exposure to noxious substances	**153**
35-44 Years	Accidental poisoning and exposure to noxious substances	**170**
45-54 Years	Accidental poisoning and exposure to noxious substances	**124**
55-64 Years	Accidental poisoning and exposure to noxious substances	**104**
65-74 Years	Falls	**56**
75-84 Years	Falls	**105**
85+ Years	Falls	**194**
All Ages	Accidental poisoning and exposure to noxious substances	**630**

Source: SC DHEC Vital Statistics, 2016-2020

What we know:

Our risk for falls increases with age

- Physiological and Cognitive changes occur as we age.
  - We are **more susceptible** to losing our balance
  - We are **more likely** to be injured if we fall
- How we **think** about falls can make us more vulnerable to falling
- **Lifestyle changes** associated with aging can increase risk for falls



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What we know:

STEADI Stopping Elderly Accidents, Deaths & Injuries

There are different types of fall risk factors

Internal

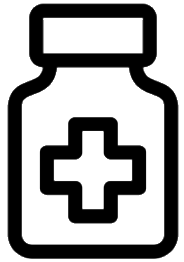
- A past fall
- Fear of falling
- Muscle weakness
- Joint dysfunction
- Changes in how you walk
- Changes in ability to balance
- Changes in vision
- Changes in blood pressure
- Chronic illness duration
  - Rheumatic diseases
  - Osteoporosis
  - Pulmonary disease

External

- Lack of stair handrails
- Poor stair design
- Lack of bathroom grab bars
- Dim lighting, glare
- Obstacles, trip/fall hazards
- Slippery, uneven surfaces
- Medications
- Improper use of assistive devices
- Pets

What we know:

Medications can increase your risk



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Certain medications increase the risk of falls among adults aged 65 and older.

Psychoactive medications may cause side effects that increase the risk of falls by causing vision disturbances, orthostatic hypotension, confusion, and sleepiness.

In 2013, over 50% of Medicare beneficiaries used a psychoactive medication. During the year,

30% used one psychoactive medication class

15% used two psychoactive medication classes

9% used three or more psychoactive medication classes

Fall Risk Increasing Drugs (FRIDs)

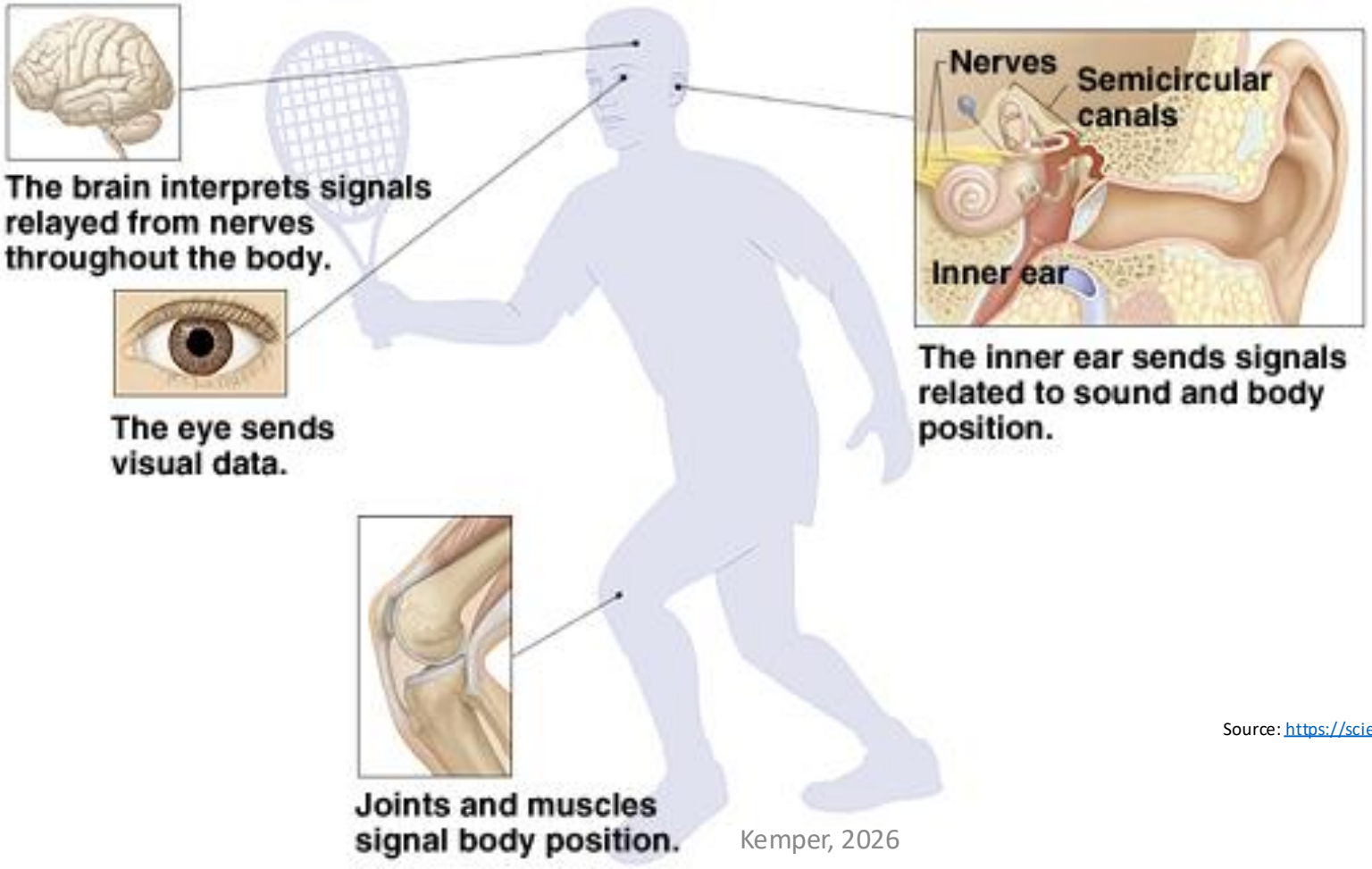
- 14 medication classes identified as higher risk for falls according to STOPPFALL screening tool.
  - alpha-blockers for prostate hyperplasia,
  - alpha-blockers used as antihypertensives,
  - anticholinergics,
  - antidepressants,
  - antiepileptics,
  - antihistamines,
  - antipsychotics,
  - benzodiazepines (BDZ),
  - benzodiazepine-related drugs (Z-drugs),
  - centrally acting antihypertensive drugs,
  - diuretics,
  - opioids,
  - overactive bladder (OAB) and urge incontinence (UI) medications
  - and vasodilators used in cardiac disease
- Individuals using FRIDs have a fall rate 1.5 times higher than that of non-users
- More research is needed to determine if deprescribing FRIDs will have a significant impact on decreasing fall risk.

Balance

- Components
  - Center of gravity
  - Line of gravity
  - Base of Support
- Systems
  - Visual – provides 10% of information sent to your brain to help you keep your balance
  - Proprioceptive (somatosensory) – 70%
  - Vestibular – 20%
- Balance perturbation recovery (movement strategies)
  - Ankle, Hip, Step

What we know

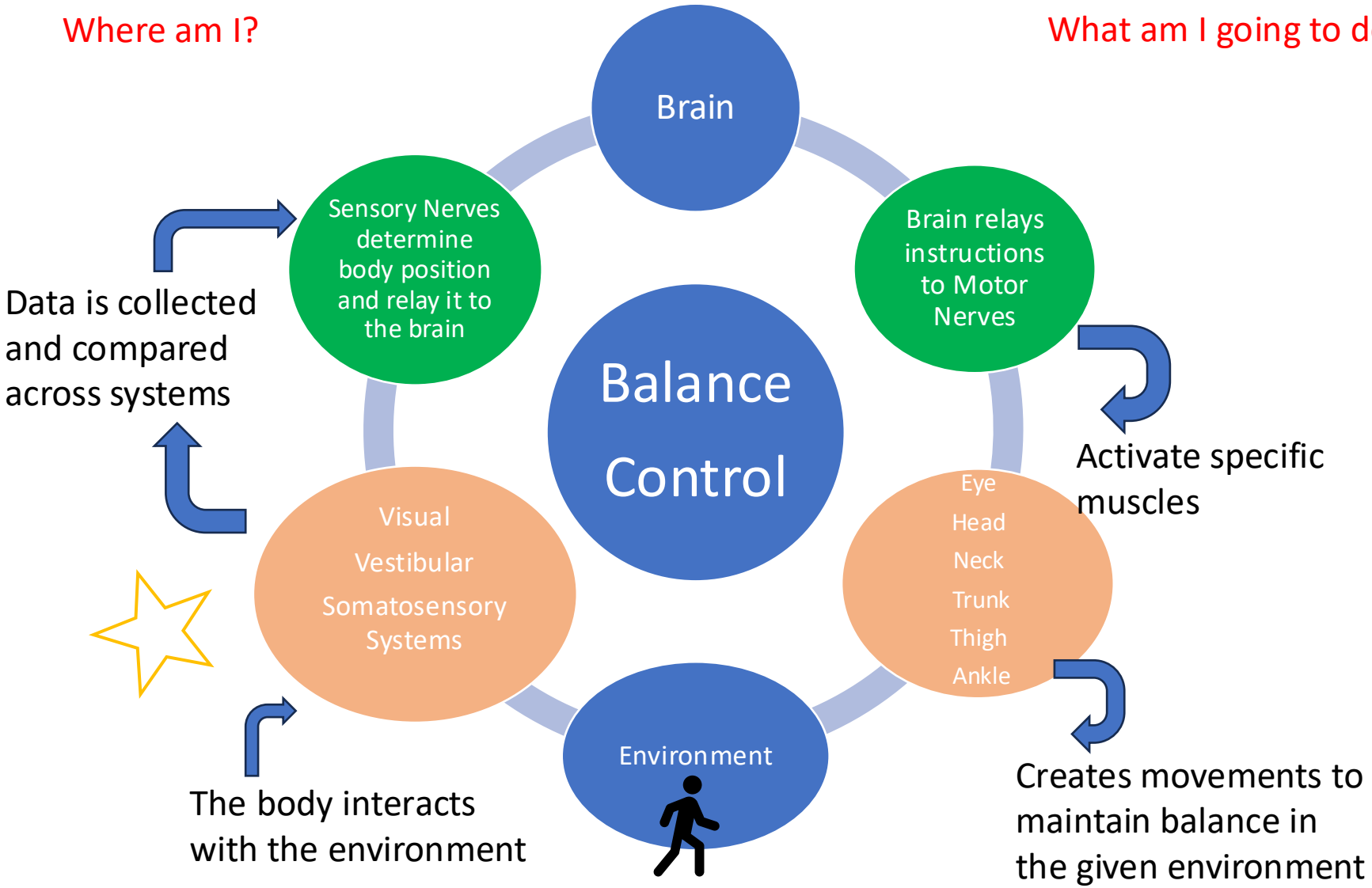
Our balance system is amazing



- Hearing may also play a supportive role with vision, vestibular and proprioceptive systems.

Source: https://scienceoffalling.com/articles/the-three-bodily-balance-systems

Constant communication between body and environment – Postural control



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Different Types of Balance – ACE blog J. Schroeder 2019

Table 1: Definition of Types of Balance

Term	Definition	Example
Static steady-state balance	Maintaining a steady position while stationary	Maintaining balance while sitting or standing
Dynamic steady-state balance	Maintaining a steady position while moving	Maintaining balance while walking
Proactive balance	Anticipation of a predicted postural disturbance	Maintaining balance while reaching up to a shelf
Reactive balance	Compensation of unpredicted postural disturbance	Maintaining balance after slipping on a wet floor

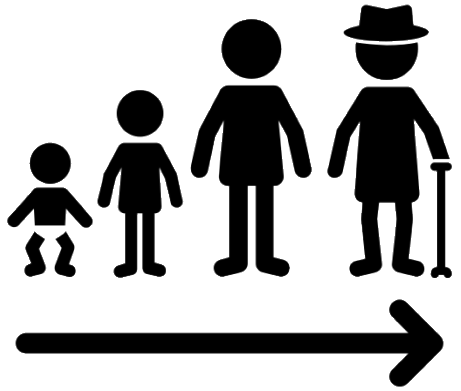
Table 2: Sample Activities for Different Types of Balance

Balance Component	Sample Activities
Static steady-state balance	Standing with changes in base of support (feet shoulder-width apart; narrow stance; staggered stance; single-leg stance)
Dynamic steady-state balance	Walking with changes in base of support (feet shoulder-width apart; semi-tandem; heel to toe); lateral stepping
Proactive balance	Ball catch with changes in base of support; obstacle courses
Reactive balance	Unanticipated nudge; use of foam pads

What we know:

Age-related changes influence our balance system

- Loss of muscle strength and muscle fiber types
- Change in neuromuscular information
- Loss of flexibility
- Cognitive processing changes
- Proprioceptive changes
- Vestibular changes
- Vision changes
- Hearing changes
- Sympathetic nervous system activation



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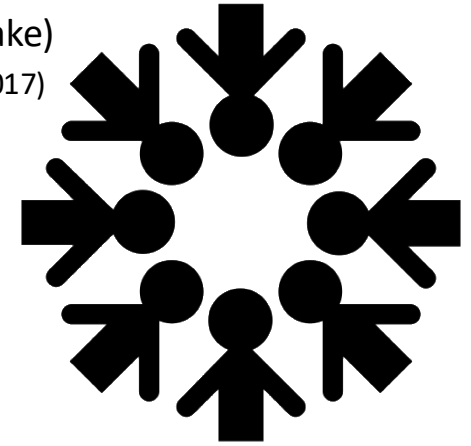
What we know

Interventions Help

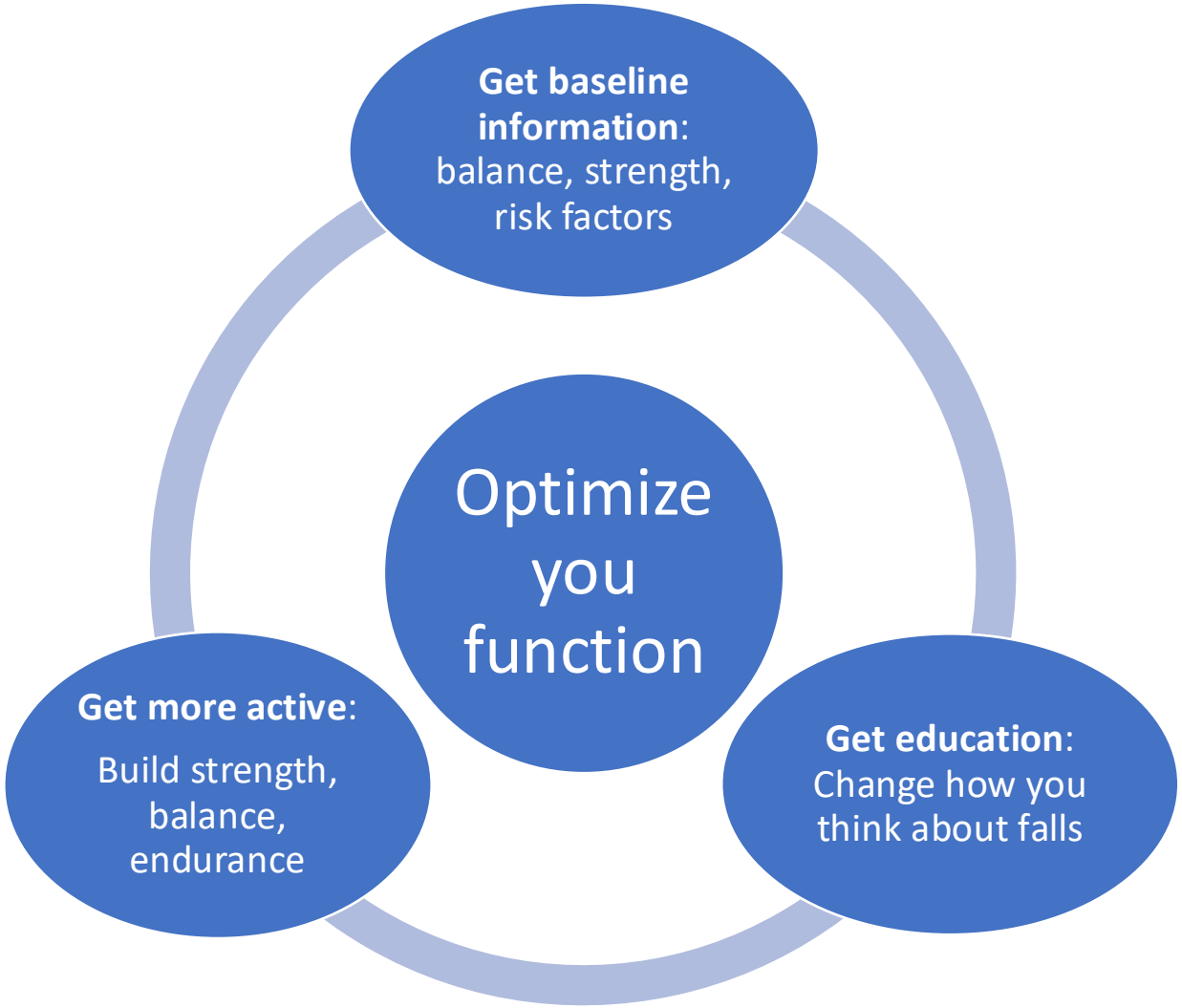
- Falls prevention programs
- Vestibular disorders/poor balance rehabilitation
- Diet assessment and correction (Vitamin D +calcium insufficiency, protein intake)
  - **Diet Intervention in pilot study of malnourished SSc pts** reduced sarcopenia prevalence from 54% to 39% (Doerfler 2017)
- Medication reviews
- Postural hypotension management
- Vision and hearing correction
- Foot or ankle disorder rehabilitation
- Home hazard reduction
- Physical activity programs
  - **Tai Chi for SSc patients** made significant improvements in endurance, balance, sleep quality, fatigue, anxiety and depression (Cetin 2020)



What we know:

Falls are not inevitable

What can you do?



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What you can do

Evaluate your circumstances

STEADI Stopping Elderly Accidents, Deaths & Injuries

"Stay Independent" Survey

Find it online at:
https://www.ncoa.org/tools/falls-free-checkup/

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.	

This checklist was developed by the Greater Los Angeles VA Geriatric Research Education Clinical Center and affiliates and is a validated fall risk self-assessment tool (Rubenstein et al. J Safety Res; 2011: 42(6)493-499). Adapted with permission of the authors.

What you can do?

Assess Your Balance and Strength

- 4-Stage Balance Test
- 30-second Chair-Stand
- Timed-Up-And-Go Test
- Grip Strength Measure

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

What you can do?

<u>Assess additional risk factors</u>

- Nutrition status
- Body Composition
- Vision
- Hearing
- Foot health
- Flexibility

Created by Mohammed R

What can you do?

Change your thinking

- Build your knowledge
- Consider how fear puts you at risk
- Focus on problem solving to preserve independence
- Engage in mindfulness practices

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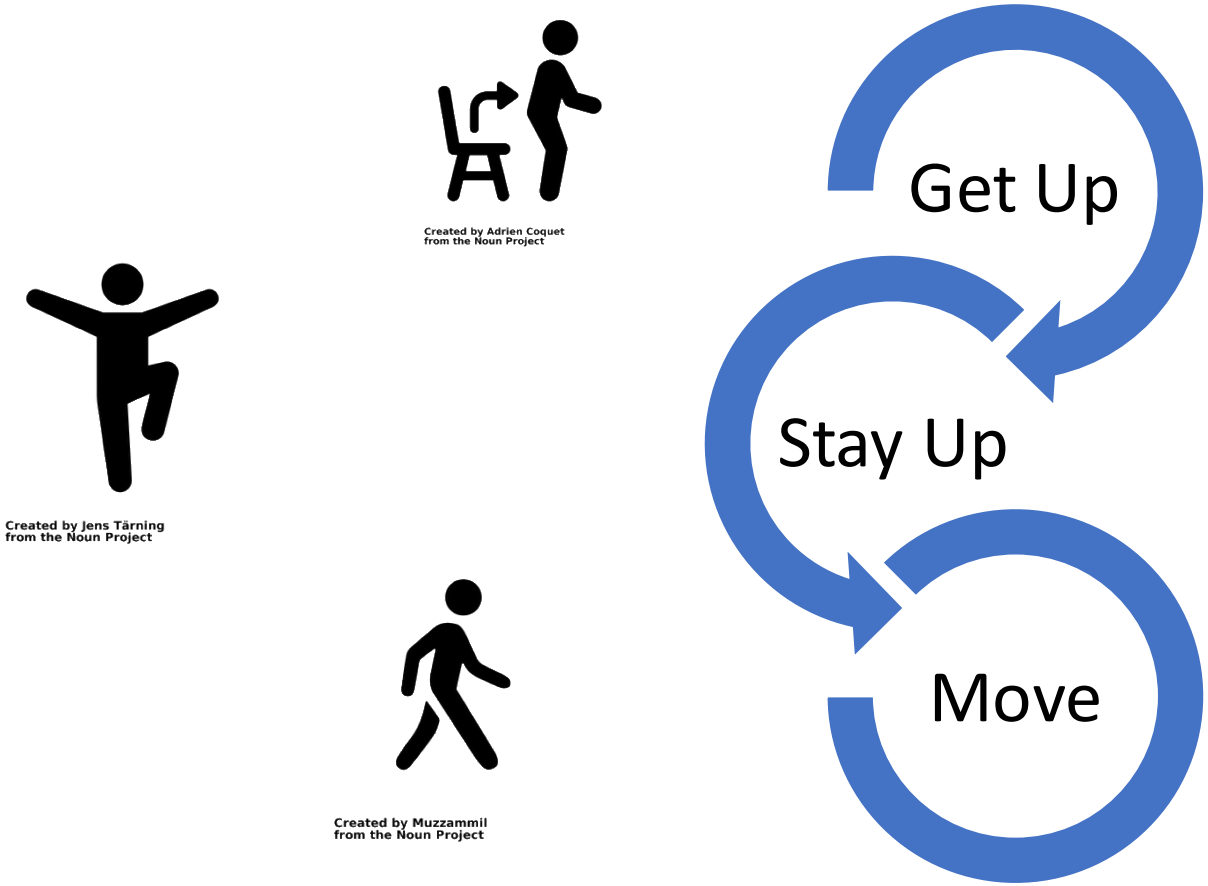
- CDC LIFE Fall Prevention Planning Tool (9 Online Modules)

https://lifefallprevention.com

What can you do? (if you are not physically active now)

Get Up – Stay Up - Move



Strength: leg and arm muscles

Balance: Core and hip muscles

Cardiovascular Endurance: lower leg and hip muscles

Schlicht, et al ACSM Health and Fitness Journal Nov/Dec 2021

What you can do

Practice balance promoting strategies

- Heel raises
- Toe taps on a bench (or step)
- Sit to stand exercises
- Tandem (heel-toe) walking
- Standing (or sitting) while shifting weight outside of your base of support
- External challenges (nudge off balance, push-pull, catching a ball…**only with spotter**)

If a fall occurs…

Have a plan in place before a fall occurs.

How will you call for help (or notify help) if needed?

How will you let help into your home?

How will you get up from a fall?

How will will you share your plan?

Pause, Assess, Chose.

- Try to stay calm
- Take a few minutes to get reoriented
- Take some deep breaths
- Check for injuries
- Scan the environment
- Decide if you will try to get up or call for help

If Uninjured: Getting up from a fall

- The best way will differ from person to person, but **as a guide**, you can:
  - Roll onto your side.
  - Push yourself up to a side sitting position.
  - Slowly get onto your hands and knees.
  - Crawl towards a sturdy piece of furniture that can support you to get up – such as a solid chair or sofa.
  - Kneel side-on to the chair or sofa with your strongest leg next to it, then slide the foot of your strongest leg forward so that it's flat on the floor. Your other knee should remain on the floor.
  - Put both hands on the chair or sofa.
  - Raise and turn your body, pushing through your hands and foot until your bottom is safely on the chair or sofa.
  - Sit for a few minutes before you try to do anything else and check again for injuries.

- If you have weak muscles, painful and stiff leg joints, or knee replacements, you may not be able to follow these instructions. In this case,
  - Try "skooting" on your bum to move towards a step or furniture to get more comfortable or try lifting yourself off the floor.
  - Consider getting a community alarm or notification system so you know that help will always be available.

- **Practice**: Improve your confidence and skill by first practice getting down on the floor then getting up from the floor. Practice in different rooms of your house and using different types of sturdy furniture for support.

For your safety, ask a friend or relative to be with you when you practice.

Benefits of Practicing Getting Up from the Floor

Can reduce the time you spend on the floor, which lowers risks of pressure injuries, hypothermia, or worsening injuries.

Shifts your mindset from being reactive (“What happens if I fall?”) to a proactive (“I can practice this, I’m prepared”).

Builds awareness of your movement capability, limitations, support needs, and environment hazards.

Short video demonstrating get down to and up from the floor

- First, practice getting down to the floor
- Then, reverse the process to get off the floor (backward chaining).
- https://www.youtube.com/watch?v=Ggkynz7xopI (3 minutes)

If Injured, ask yourself:

- Do I have sharp or increasing pain (especially in the head, neck, back, hips, or limbs)?
- Am I unable to move or do I feel numb/weak in any limb?
- Do I feel dizzy, lightheaded, or unwell?
- Is there visible bleeding, a wound, or a suspected fracture?
- **If yes to any of these**, do not attempt to stand.
- Call for help, get assistance from a friend/caregiver, or contact emergency services if necessary.
- *Wearable technology can help detect falls and connect you to emergency services that will come to your aid if needed.*

When to seek medical help after a fall

Injuries or lack of strength that prohibited you from getting up on your own.

You hit your head, can't bear weight on a limb, have severe pain, have visible deformity, had significant bleeding, have chest pain or shortness of breath, take blood thinners.

You have less severe injuries, but they don't improve after a few days.

If dizziness, loss of balance, loss of strength lead to your fall.

According to the American Physical Therapy Association (APTA), patients who receive physical therapy within three months of a dizziness diagnosis or incident had significantly lower rates of falls up to a year later (2023).

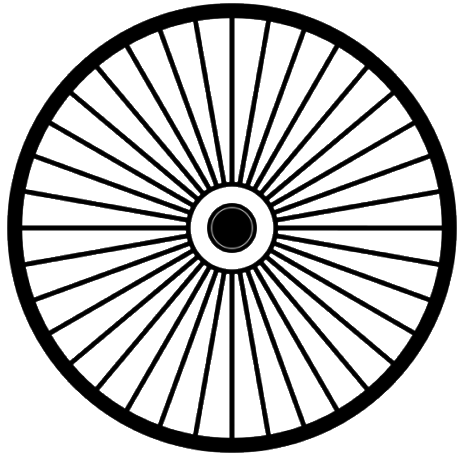
Comprehensive video reviewing how to make a prevention plan and practice getting up from a fall

- How to get up from a fall (Digital Health and Care Scotland) (20 minutes)
  - https://www.youtube.com/watch?v=mbUp9ODetbM&t=1092s
  - https://www.nhsinform.scot/healthy-living/preventing-falls/dealing-with-a-fall/what-to-do-if-you-fall

Summary

Optimize your function and protect your independence

- Assess your risk
- Take falls prevention classes (try out more than one)
- Stay active: Get Up, Stay Up, Move
  - Build strength, flexibility, and balance skills
- Clean up your environment
- Review medications
- Get your vision, diet, feet checked
- Practice mindfulness
- Create a plan for a fall
- Practice getting down on and up from the floor.



- Questions?

Resources

- National Council on Aging https://www.ncoa.org
- NCOA Fall Prevention https://www.ncoa.org/older-adults/health/prevention/falls-prevention
- CDC STEADI (Stopping Elderly Accidents, Deaths, & Injuries) https://www.cdc.gov/steadi/index.html
- Propel Physiotherapy, Canada https://propelphysiotherapy.com/injury-prevention/how-to-get-up-after-you-fall/#:~:text=Plan%20your%20route:%20Identify%20a,to%20the%20floor%20for%20stability.
- Digital Health and Care, Scotland https://www.nhsinform.scot/healthy-living/preventing-falls/dealing-with-a-fall/what-to-do-if-you-fall