TexMed 2024

Fall Risk and Prevention: A Guide for the Geriatric Mental Health Workforce

May 4, 2024

9 am

Disclosures

- All presenters have no actual or potential conflicts of interest in relation to this program/presentation
- No off label uses of medication will be discussed in this presentation

Learning Objectives

1. Increase awareness of the prevalence and impact and falls on older adults
2. Understand and be able to utilize validated screening tools for fall risk in clinical practice
3. Enhance ability to create a differential for causes and contributors for falls in individual patients
4. Describe and be able to implement interventions to mitigate risk of falls, including medication reconciliation and appropriate referrals

Older Adults and Falls

Molly Camp, MD
UT Southwestern Medical Center

STEADI: Stopping Elderly Accidents, Deaths, and Injuries

- 1 older adult fall death every **20 minutes**
- **Over 95%** of hip fractures result from falls
- Fall risk **increases with age**
- **3 million** older adults are treated for a fall injury every year

IN 2018

1 in 4 older adults reported falling—this equals about 36 million falls.

Falls can threaten the health and independence of older adults.

More than **8 million** falls required medical attention or limited activity for at least a day.

More than **32,000** older adults died from falls—that's 88 older adults every day.

Falls—and the injuries and deaths they cause—are increasing.

Over 10,000 people in the United States turn 65 every day. The number of falls and fall injuries will increase as the population of older adults grows. Death rates from falls have increased about 30% in the last decade. Healthcare costs are also on the rise. In one year alone, medical costs for falls are about $50 billion.

https://www.cdc.gov/steadi/patient.html

10 Leading Causes of Death, United States

2020, Both Sexes, All Ages, All Races

	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	All Ages
1	Congenital Anomalies 4,043	Unintentional Injury 1,153	Unintentional Injury 685	Unintentional Injury 881	Unintentional Injury 15,117	Unintentional Injury 31,315	Unintentional Injury 31,057	Malignant Neoplasms 34,589	Malignant Neoplasms 110,243	Heart Disease 556,665	Heart Disease 696,962
2	Short Gestation 3,141	Congenital Anomalies 382	Malignant Neoplasms 382	Suicide 581	Homicide 6,466	Suicide 8,454	Heart Disease 12,177	Heart Disease 34,169	Heart Disease 88,551	Malignant Neoplasms 440,753	Malignant Neoplasms 602,350
3	Sids 1,389	Homicide 311	Congenital Anomalies 171	Malignant Neoplasms 410	Suicide 6,062	Homicide 7,125	Malignant Neoplasms 10,730	Unintentional Injury 27,819	Covid-19 42,090	Covid-19 282,836	Covid-19 350,831
4	Unintentional Injury 1,194	Malignant Neoplasms 307	Homicide 169	Homicide 285	Malignant Neoplasms 1,306	Heart Disease 3,984	Suicide 7,314	Covid-19 16,964	Unintentional Injury 28,915	Cerebrovascular 137,392	Unintentional Injury 200,955
5	Maternal Pregnancy Comp. 1,116	Heart Disease 112	Heart Disease 56	Congenital Anomalies 150	Heart Disease 870	Malignant Neoplasms 3,573	Covid-19 6,079	Liver Disease 9,503	Chronic Low. Respiratory Disease 18,816	Alzheimer's Disease 132,741	Cerebrovascular 160,264
6	Placenta Cord Membranes 700	Influenza & Pneumonia 84	Influenza & Pneumonia 55	Heart Disease 111	Covid-19 501	Covid-19 2,254	Liver Disease 4,938	Diabetes Mellitus 7,546	Diabetes Mellitus 18,002	Chronic Low. Respiratory Disease 128,712	Chronic Low. Respiratory Disease 152,657
7	Bacterial Sepsis 542	Cerebrovascular 55	Chronic Low. Respiratory Disease 54	Chronic Low. Respiratory Disease 93	Congenital Anomalies 384	Liver Disease 1,631	Homicide 4,482	Suicide 7,249	Liver Disease 16,151	Diabetes Mellitus 72,194	Alzheimer's Disease 134,242
8	Respiratory Distress 388	Perinatal Period 54	Cerebrovascular 32	Diabetes Mellitus	Diabetes Mellitus 312	Diabetes Mellitus 1,168	Diabetes Mellitus 2,904	Cerebrovascular 5,686	Cerebrovascular 14,153	Unintentional Injury 62,796	Diabetes Mellitus 102,188
9	Circulatory System Disease 386	Septicemia 43	Benign Neoplasms 28	Influenza & Pneumonia 50	Chronic Low. Respiratory Disease 220	Cerebrovascular 600	Cerebrovascular 2,008	Chronic Low. Respiratory Disease 3,538	Suicide 7,160	Nephritis 42,675	Influenza & Pneumonia 53,544
10	Neonatal Hemorrhage 317	Benign Neoplasms 35	Suicide 20**	Cerebrovascular 44	Complicated Pregnancy 191	Complicated Pregnancy 594	Influenza & Pneumonia 1,148	Homicide 2,542	Influenza & Pneumonia 6,295	Influenza & Pneumonia 42,511	Nephritis 52,547

https://wisqars.cdc.gov/lcd/

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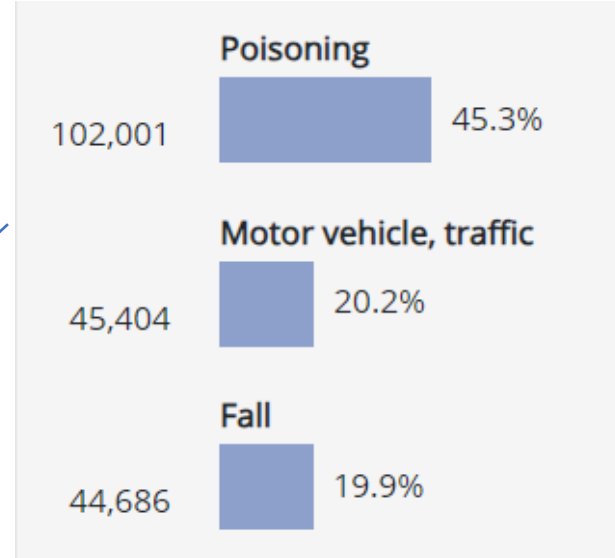

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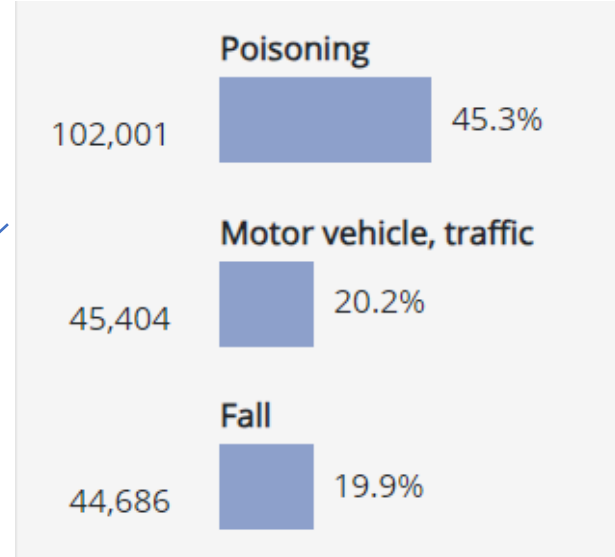
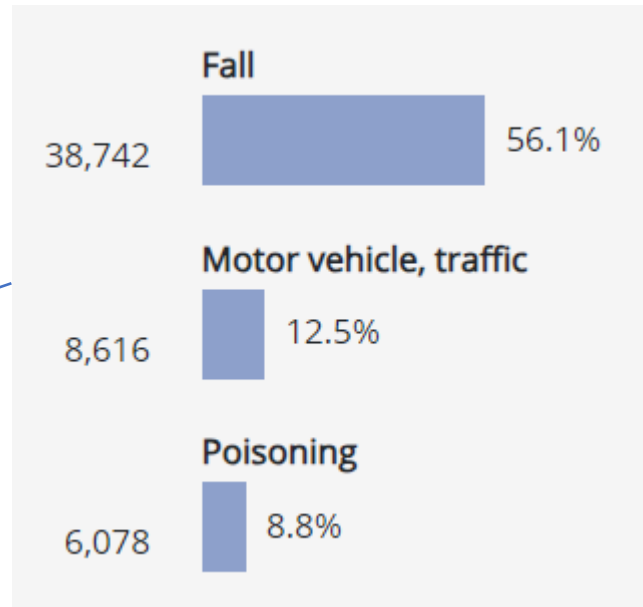


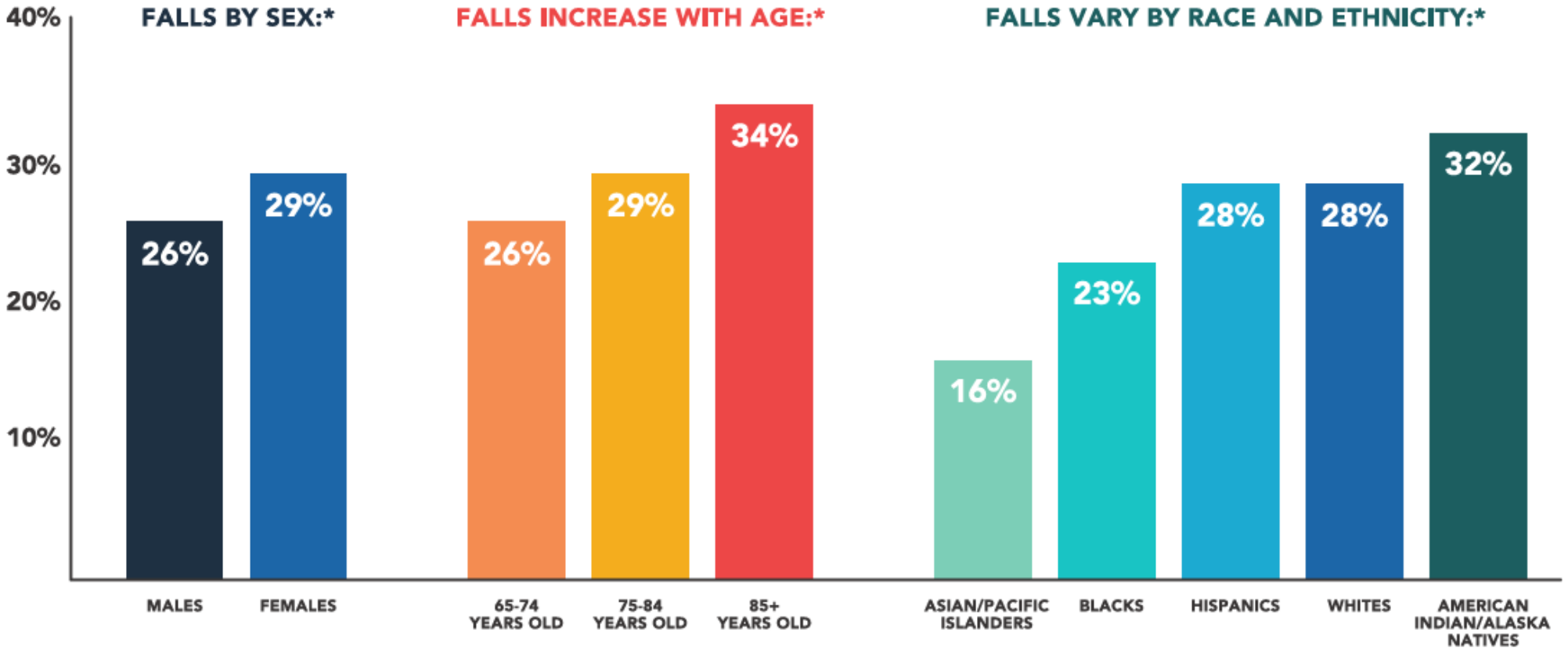


https://wisqars.cdc.gov/lcd/

Who is at elevated risk?

- Fall prevention is important for everyone
- Additional attention may be dedicated to those at higher levels of risk

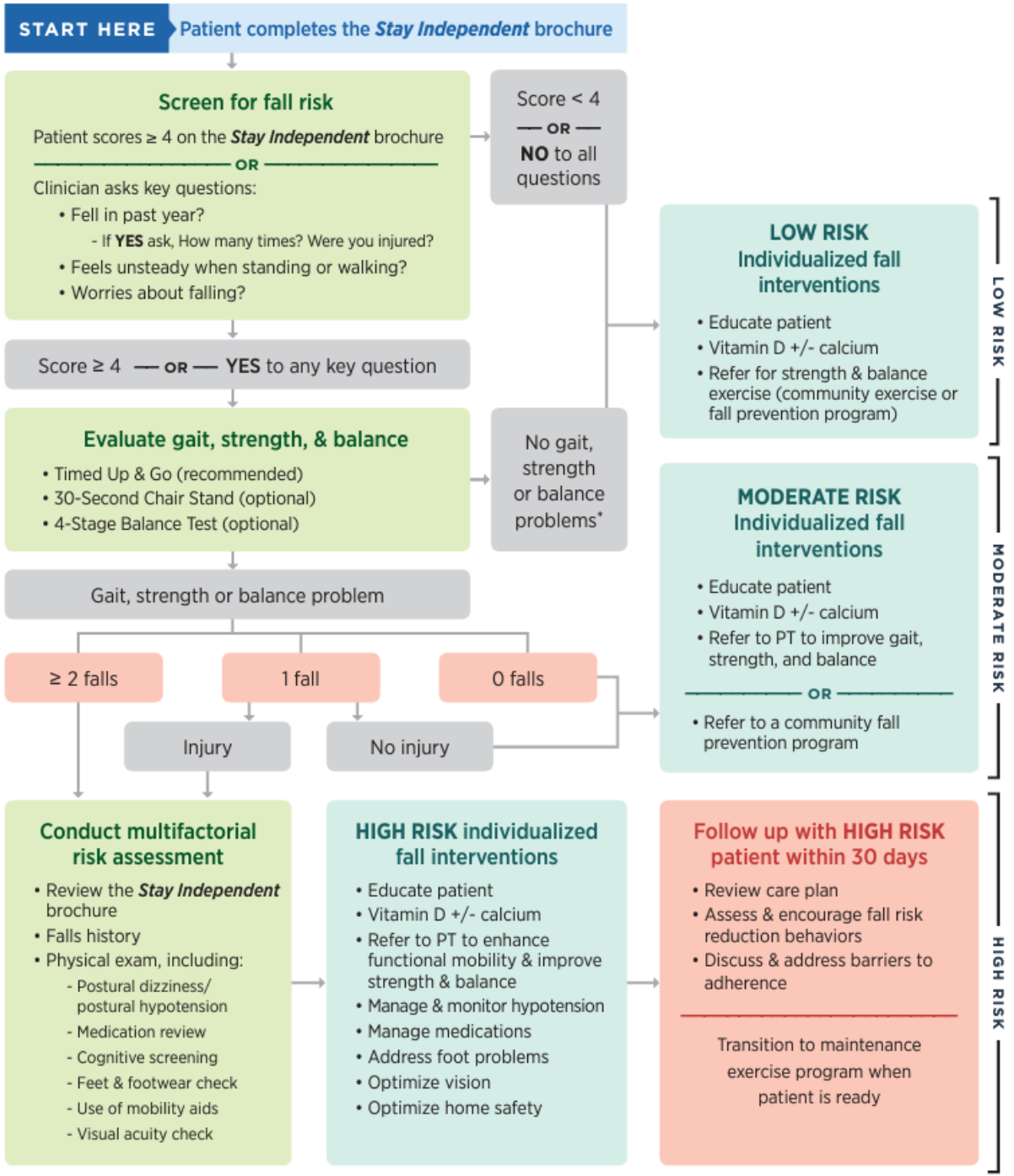
Who is at elevated risk?



*Percent of older adults who reported a fall

https://www.cdc.gov/steadi/patient.html

Evaluating Risk



https://www.cdc.gov/steadi/pdf/steadi-algorithm-print.pdf

STEADI

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.

To check your risk online, visit: www.bit.ly/3o4RiW8

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.

https://www.cdc.gov/steadi/pdf/STEADI-Brochure-StayIndependent-508.pdf

3 Key Questions

- Have you fallen in the last year?
  - How many times? Were you injured?
- Do you feel unsteady when standing or walking?
- Do you feel worried about falling?

Answer "yes" to any is a positive screen!

ASSESSMENT

Timed Up & Go (TUG)

Purpose: To assess mobility

Equipment: A stopwatch

Directions: Patients wear their regular footwear and can use a walking aid, if needed. Begin by having the patient sit back in a standard arm chair and identify a line 3 meters, or 10 feet away, on the floor.

NOTE: Always stay by the patient for safety.

① Instruct the patient:

When I say "Go," I want you to:

1. Stand up from the chair.
2. Walk to the line on the floor at your normal pace.
3. Turn.
4. Walk back to the chair at your normal pace.
5. Sit down again.

② On the word "Go," begin timing.

③ Stop timing after patient sits back down.

④ Record time.

Time in Seconds: _____

An older adult who takes ≥12 seconds to complete the TUG is at risk for falling.

Patient _____

Date _____

Time _____ ☐ AM ☐ PM

OBSERVATIONS

Observe the patient's postural stability, gait, stride length, and sway.

Check all that apply:

- ☐ Slow tentative pace
- ☐ Loss of balance
- ☐ Short strides
- ☐ Little or no arm swing
- ☐ Steadying self on walls
- ☐ Shuffling
- ☐ En bloc turning
- ☐ Not using assistive device properly

These changes may signify neurological problems that require further evaluation.

https://www.cdc.gov/steadi/pdf/TUG_test-print.pdf

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

www.cdc.gov/steadi/pdf/4-Stage_Balance_Test-print.pdf

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.

NOTE: Stand next to the patient for safety.

Patient _____

Date _____

Time _____ ☐ AM ☐ PM

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.

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.

Number: _____ Score: _____

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

A below average score indicates a risk for falls.

https://www.cdc.gov/steadi/pdf/STEADI-Assessment-30Sec-508.pdf

Fear of Falling

- Increases risk of:
  - **FALLS!**
  - Activity Restriction – Cycle of muscle atrophy, deconditioning, loss of postural control, gait impairment
  - Depression
  - Social isolation
  - Poor quality of life
  - Frailty

Screening for Fear of Falling

- Falls Efficacy Scale - International (FES-I)
  - 16 questions of self-reported concern about falling while performing 16 ADLs
  - Low, moderate, or high concern

- Single Question Fear of Falling and Activity Restriction (SQ-FAR)
  - **Are you afraid of falling?**
  - **If so, have you restricted any activities because of this fear?**

  - 74% specificity and 86% specificity when compared with FES-I

Belloni et al. J Am Med Dir Assoc Sept 2020 https://doi.org/10.1016/j.jamda.2020.01.101

Investigating Why They Fell *(or may be at risk for falling)*

Jessica H. Voit, MD
UT Southwestern Medical Center

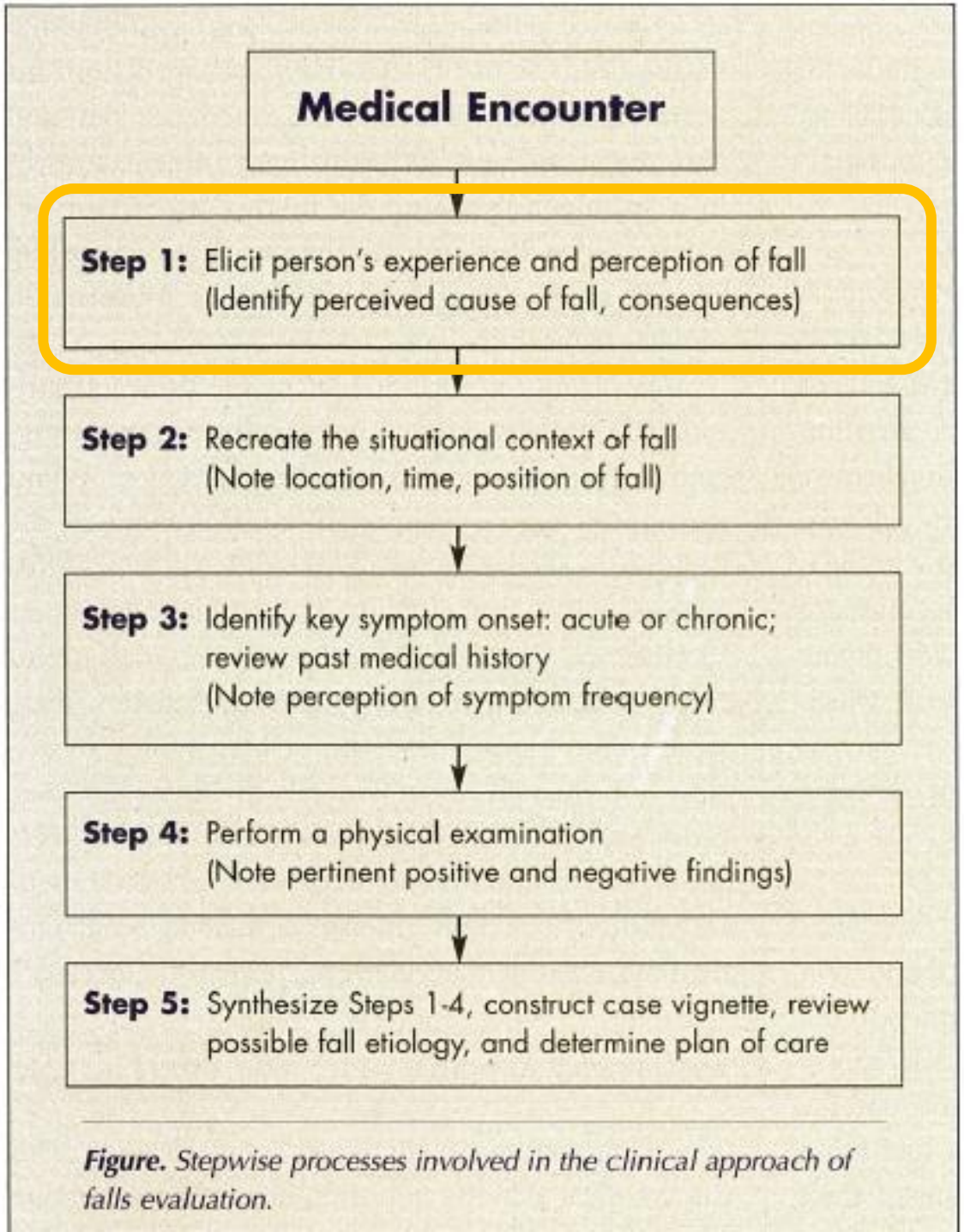


Figure. *Stepwise processes involved in the clinical approach of falls evaluation.*

Step 1 – Patient Perception

How often do you fall?
What about *almost* falling?

Let me ask your family members what they notice about your gait.

Are you concerned about the consequences of falling?

Gray-Miceli, Deanna. (2005). A stepwise approach to a comprehensive post-fall assessment. Annals of long term care: clinical care and aging. 13 (12), 16-24.

Medical Encounter

Step 1: Elicit person's experience and perception of fall
(Identify perceived cause of fall, consequences)

Step 2: Recreate the situational context of fall
(Note location, time, position of fall)

Step 3: Identify key symptom onset: acute or chronic; review past medical history
(Note perception of symptom frequency)

Step 4: Perform a physical examination
(Note pertinent positive and negative findings)

Step 5: Synthesize Steps 1-4, construct case vignette, review possible fall etiology, and determine plan of care

Figure. *Stepwise processes involved in the clinical approach of falls evaluation.*

Step 2 – Describe the Situation

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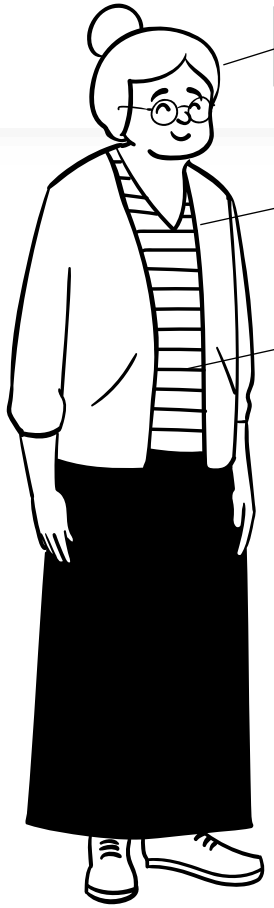
Step 3 – Identify Symptoms and Hx



Neuro

Cardiac

GI

Pain

Weakness

Altered Sensory
- neuropathy
- vision

Vitals?
Glucose?

EtOH? Illicits?

Relevant
PMH?

Medication Review

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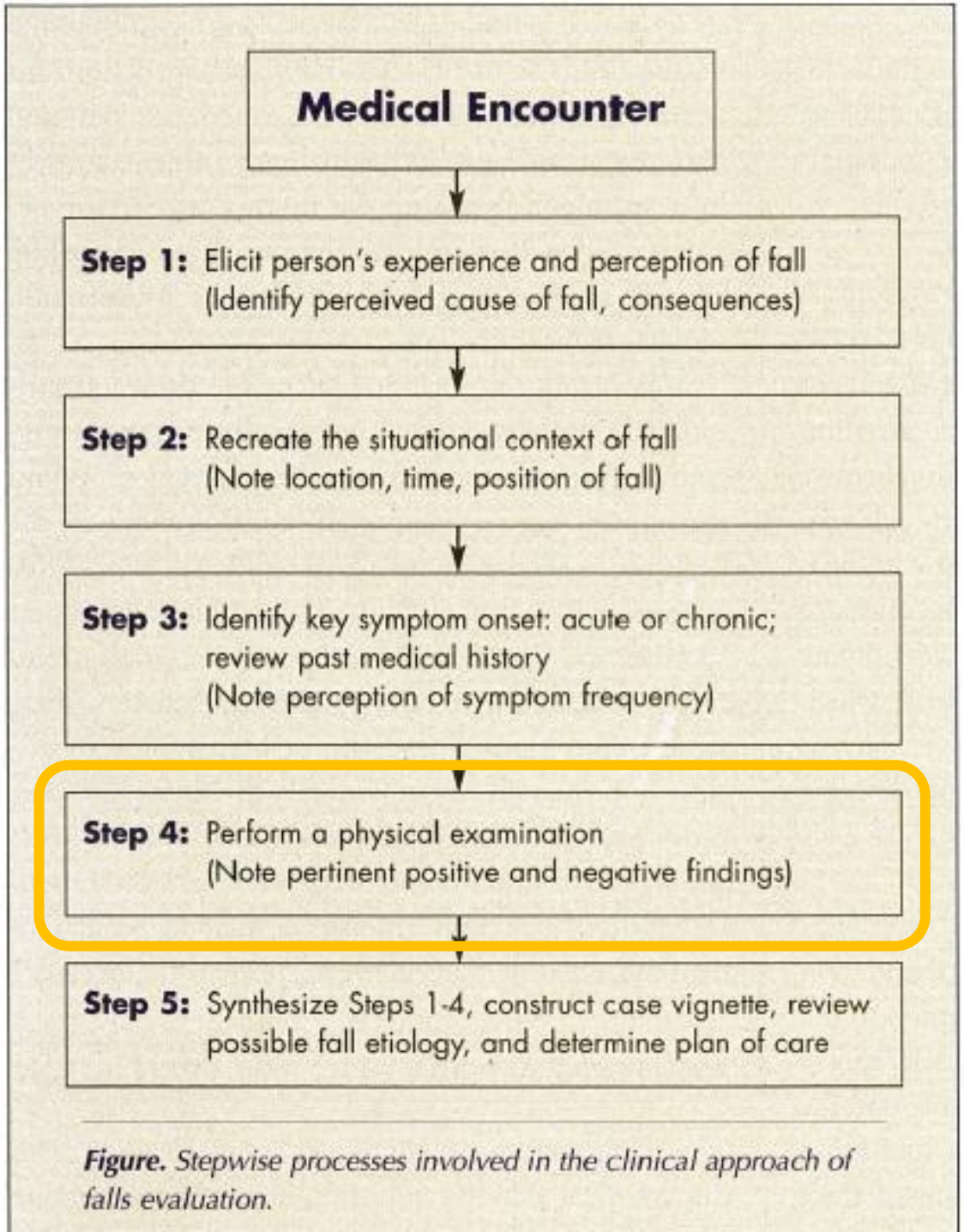

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Step 4 – Examination

Gait

- Timed Up and Go
- Gait observation
- Turns
- Assistive Device?

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Step 5 – Synthesize and Plan

Medical Encounter

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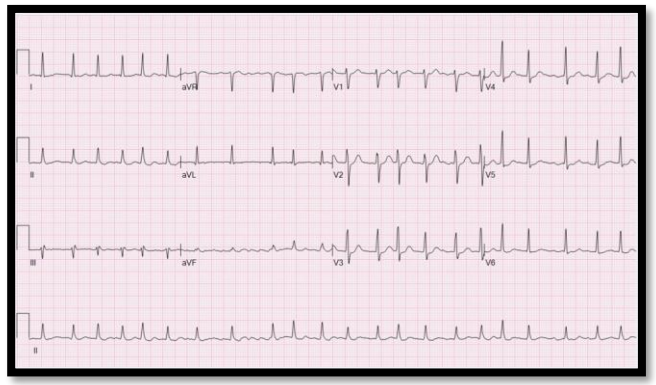

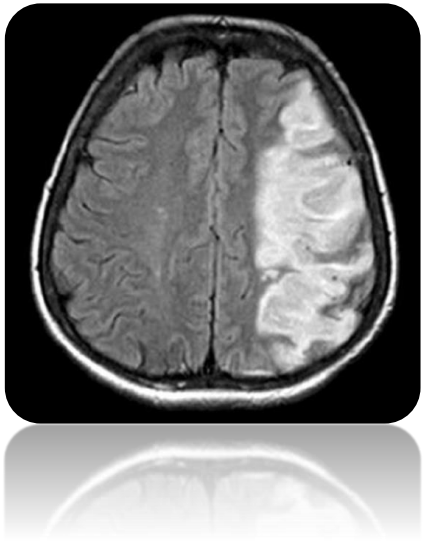

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Reducing Fall Risk

Kayla Murphy, MD
UT Southwestern Medical Center

Outline:

1. Evidence base for exercise and practical implementation tips
2. Addressing medical conditions contributing to falls
3. Using our interdisciplinary teams
4. Reviewing medications

Evidence base for exercise

International Journal of Environmental Research and Public Health

MDPI

Int J Environ Res Public Health. 2021 Dec; 18(23): 12562.
Published online 2021 Nov 29. doi: 10.3390/ijerph182312562

PMCID: PMC8657315
PMID: 34886293

The Effect of Exercise Intervention on Reducing the Fall Risk in Older Adults: A Meta-Analysis of Randomized Controlled Trials

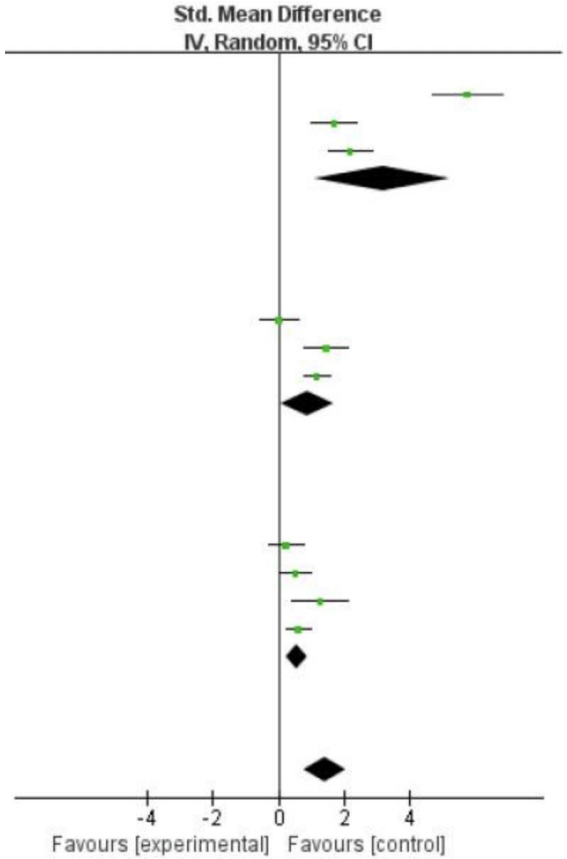
Mingyu Sun,[1,†] Leizi Min,[2,†] Na Xu,[1] Lei Huang,[3] and Xuemei Li[1,*]

Type of exercise

Integrated training: resistance training, core training, and balance training

Physical training

Fitness training: Pilates, Ba Duan Jin, and Tai Chi



Integrated training (SMD = 3.16) >physical training (SMD = 0.88) > fitness training (SMD = 0.57)

Duration of exercise program

32 weeks (SMD = 2.92) > 12–32 weeks (SMD = 0.98) > less than 12 weeks (SMD = 0.68)

Duration of exercise program

more than five times a week (SMD = 2.39) > 3–5 times a week (SMD = 1.17)

Sun M, Min L, et al. The Effect of Exercise Intervention on Reducing the Fall Risk in Older Adults: A Meta-Analysis of Randomized Controlled Trials. Int J Environ Res Public Health. 2021

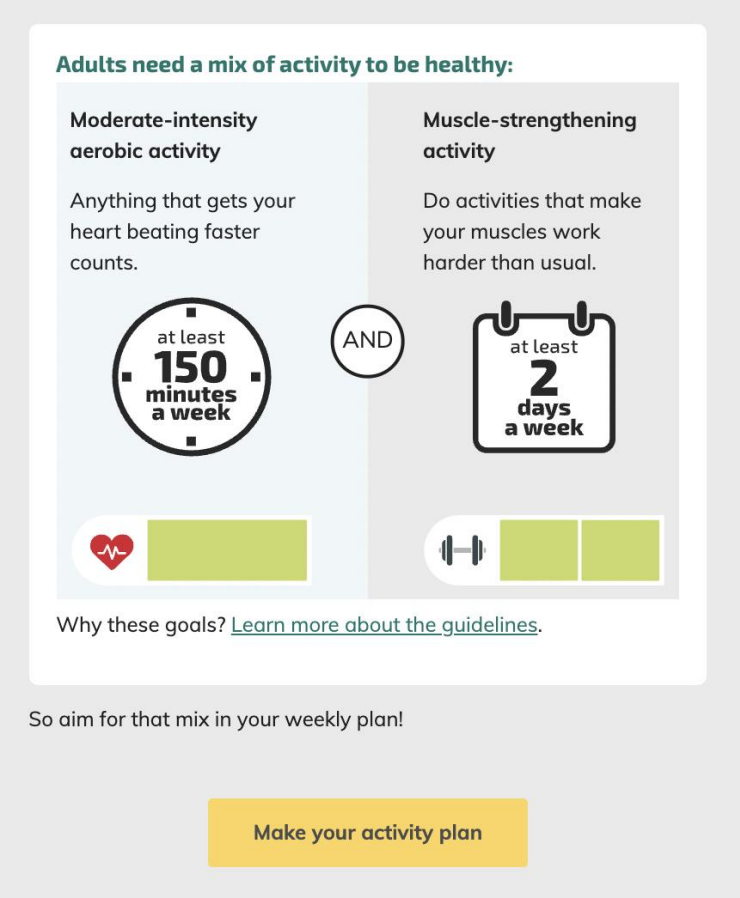
Exercise programs

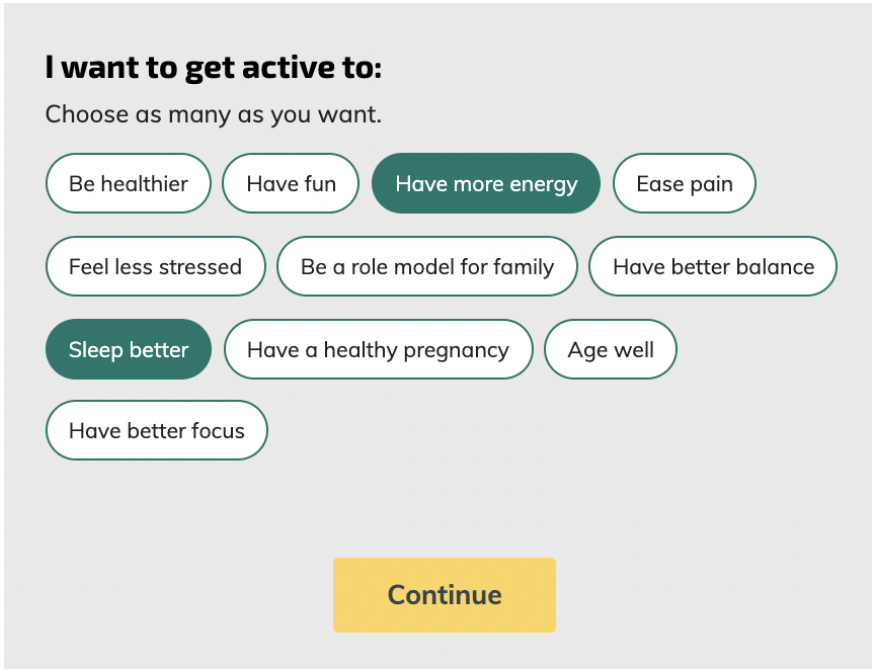
- Endurance (walking, biking)
- Balance (single leg balance, tai chi)
- Resistance (weights)
- Flexibility (stretching)

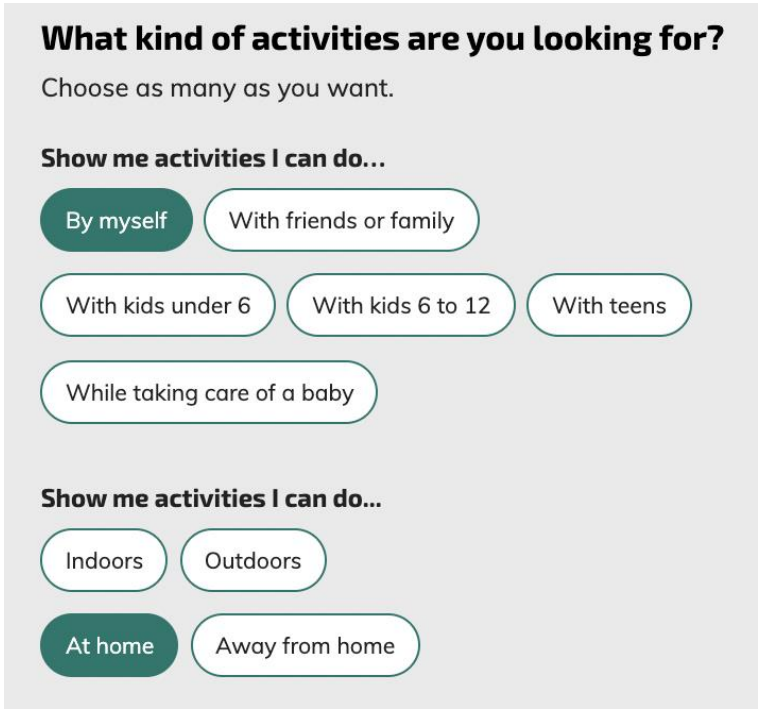
**No meaningful difference in reducing falls between these

1. Chang JT, Morton SC, Rubenstein LZ, Mojica WA, Maglione M, Suttorp MJ, Roth EA, Shekelle PG. Interventions for the prevention of falls in older adults: systematic review and meta-analysis of randomised clinical trials. BMJ. 2004 Mar 20;328(7441):680
2. https://selfhelphome.org/the-12-benefits-of-tai-chi-for-seniors/

Exercise and Physical Activity Plan

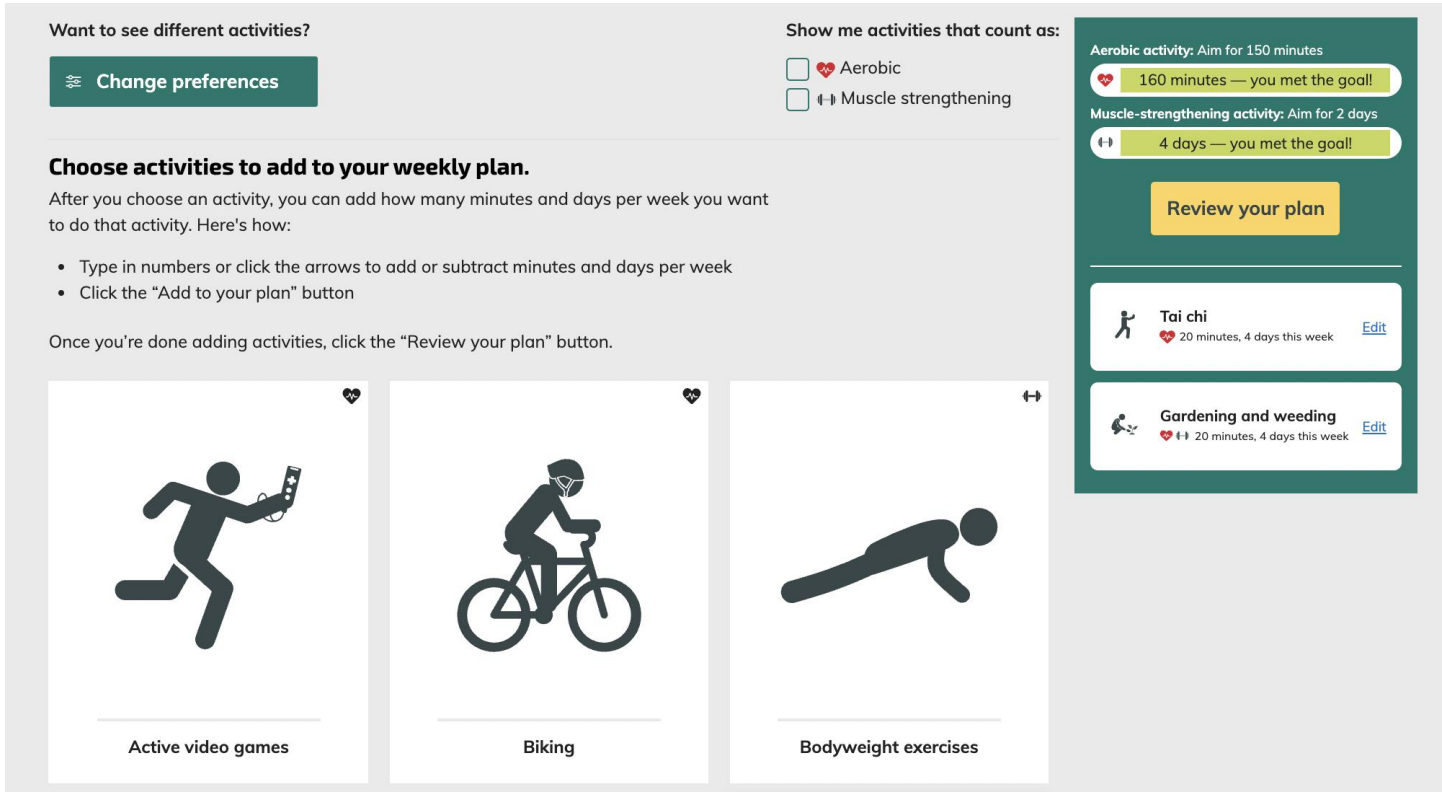






https://health.gov/moveyourway/activity-planner

Exercise and Physical Activity Plan



https://health.gov/moveyourway/activity-planner

Exercise and Physical Activity Plan

This week, I'm planning to do:

of moderate-intensity aerobic activity
of muscle-strengthening activity

Add up your minutes of aerobic activity and number of muscle-strengthening sessions, and include both totals in the bottom row of this tracker for each day.

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Gardening and weeding 20 minutes, 4 days this week							
Tai chi 20 minutes, 4 days this week							
Total minutes and sessions							

Total minutes of aerobic activity this week: _____

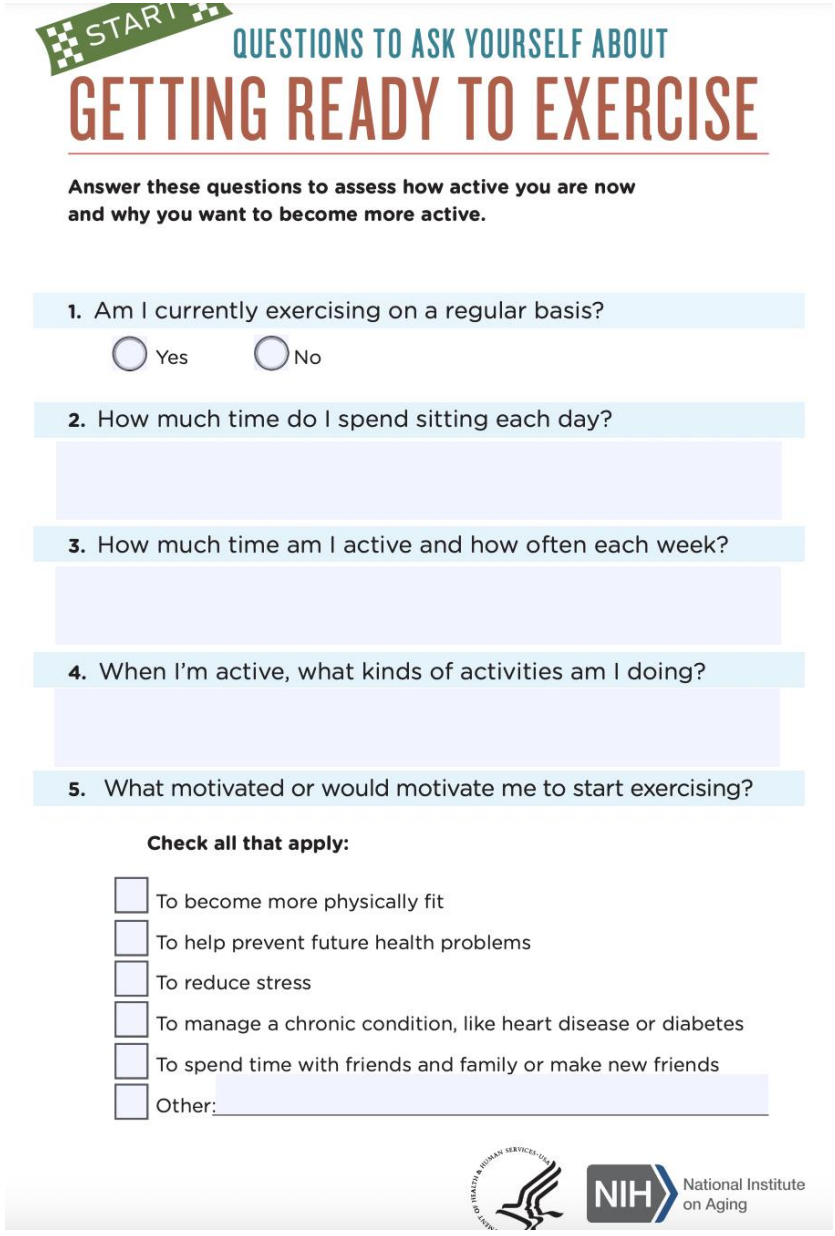
Total sessions of muscle-strengthening activity this week: _____

Remember, aim for this mix each week:

150 minutes of moderate-intensity aerobic activity

2 days of muscle-strengthening activity

https://health.gov/moveyourway/activity-planner



START

QUESTIONS TO ASK YOURSELF ABOUT

GETTING READY TO EXERCISE

Answer these questions to assess how active you are now and why you want to become more active.

1. Am I currently exercising on a regular basis?

   ◯ Yes ◯ No

2. How much time do I spend sitting each day?

3. How much time am I active and how often each week?

4. When I'm active, what kinds of activities am I doing?

5. What motivated or would motivate me to start exercising?

Check all that apply:

- ☐ To become more physically fit
- ☐ To help prevent future health problems
- ☐ To reduce stress
- ☐ To manage a chronic condition, like heart disease or diabetes
- ☐ To spend time with friends and family or make new friends
- ☐ Other: _____

NIH National Institute on Aging

NIH on Aging - Exercising resource page: https://www.nia.nih.gov/health/exercise-and-physical-activity

Getting ready to exercise form: https://www.nia.nih.gov/sites/default/files/getting-ready-exercise-worksheet.pdf

Acknowledging and addressing medical conditions contributing to fall risk

- Vision and hearing impairment

Corrective lenses, hearing aids

https://www.nia.nih.gov/health/falls-and-falls-prevention/falls-and-fractures-older-adults-causes-and-prevention

eClinicalMedicine
Part of THE LANCET *Discovery Science*

EClinicalMedicine. 2022 Apr; 46: 101378.
Published online 2022 Apr 7. doi: 10.1016/j.eclinm.2022.101378

PMCID: PMC9006672
PMID: 35434580

Comparison of personal sound amplification products and conventional hearing aids for patients with hearing loss: A systematic review with meta-analysis

PSAPs and conventional hearing aids showed **similar benefit for hearing gain, sound quality, and listening effort**

PSAPs easily available and cost effective, but need to consider significant variation in devices/brands

Chen CH, Huang CY, Cheng HL, Lin HH, Chu YC, Chang CY, Lai YH, Wang MC, Cheng YF. Comparison of personal sound amplification products and conventional hearing aids for patients with hearing loss: A systematic review with meta-analysis. EClinicalMedicine. 2022 Apr 7;46:101378. doi: 10.1016/j.eclinm.2022.101378. PMID: 35434580; PMCID: PMC9006672.

Acknowledging and addressing medical conditions contributing to fall risk

- Vision and hearing impairment

Corrective lenses, hearing aids

- Neuropathy and vascular disease affecting balance

Foot exams, orthotic shoes

Increased risk:
- Diabetes
- Chemotherapy
- Heavy alcohol use

https://www.nia.nih.gov/health/falls-and-falls-prevention/falls-and-fractures-older-adults-causes-and-prevention

Acknowledging and addressing medical conditions contributing to fall risk

- Vision and hearing impairment

Corrective lenses, hearing aids

- Neuropathy and vascular disease affecting balance

Foot exams, orthotic shoes

- Urinary or fecal incontinence

Work up for underlying cause, incontinence supplies

Differential: UTI, diabetes, atrophic vaginitis, stool impaction/constipation, medications

Voiding diary, connect to PCP or uro/gyn, review medications, urinalysis, ask about constipation

1. Urinary incontinence work up: https://www.aafp.org/pubs/afp/issues/2013/0415/p543.html
2. Chiarelli PE, Mackenzie LA, Osmotherly PG. Urinary incontinence is associated with an increase in falls: a systematic review. Aust J Physiother. 2009

https://urogynecology.nm.org/urinary-incontinence.html

Acknowledging and addressing medical conditions contributing to fall risk

- Vision and hearing impairment
- Neuropathy and vascular disease affecting balance
- Urinary or fecal incontinence
- Cognitive impairment

Corrective lenses, hearing aids

Foot exams, orthotic shoes

Work up for underlying cause, incontinence supplies

Cognitive screening, home safety assessment

https://www.nia.nih.gov/health/falls-and-falls-prevention/falls-and-fractures-older-adults-causes-and-prevention

Acknowledging and addressing medical conditions contributing to fall risk

- Vision and hearing impairment
- Neuropathy and vascular disease affecting balance
- Urinary or fecal incontinence
- Cognitive impairment
- Orthostatic hypotension

Corrective lenses, hearing aids

Foot exams, orthotic shoes

Work up for underlying cause, incontinence supplies

Cognitive screening, home safety assessment

Orthostatic vitals, compression stockings

https://www.nia.nih.gov/health/falls-and-falls-prevention/falls-and-fractures-older-adults-causes-and-prevention

How to check orthostatic vitals

① Have the patient lie down for 5 minutes.

② Measure blood pressure and pulse rate.

③ Have the patient stand.

④ Repeat blood pressure and pulse rate measurements after standing 1 and 3 minutes.

A drop in BP of ≥20 mm Hg, or in diastolic BP of ≥10 mm Hg, or experiencing lightheadedness or dizziness is considered abnormal.

https://www.cdc.gov/steadi/pdf/STEADI-Assessment-MeasuringBP-508.pdf

Managing Orthostatic Hypotension

TABLE 9-2

Nonpharmacologic Treatments for Orthostatic Hypotension

- Liberalization of salt consumption
- Liberalization of water intake (up to 2.5 L/d)
- Acute water bolus (drinking 500 mL water)
- Sleeping with the head of the bed raised 30 to 45 degrees with the help of an electric bed or mattress
- Physical activity with recumbent exercises (eg, stationary bicycle, rowing machine) or in a swimming pool
- Physical countermaneuvers (eg, standing up slowly, leg crossing, buttock clenching)[52]
- Abdominal binder[53]
- Waist-high compression stockings producing at least 15 mm Hg to 20 mm Hg pressure[54] (knee-high or thigh-high stockings are typically not useful)

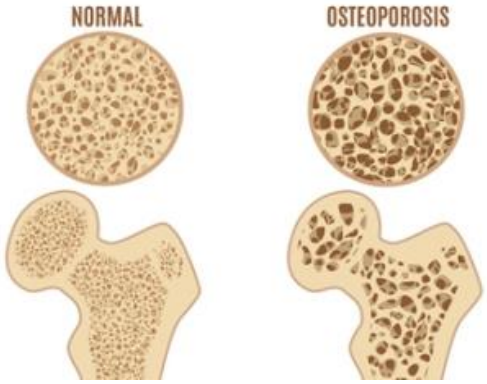
Palma JA, Kaufmann H. Management of Orthostatic Hypotension. Continuum (Minneap Minn). 2020 Feb;26(1):154-177. doi: 10.1212/CON.0000000000000816. PMID: 31996627; PMCID: PMC7339914.

Acknowledging and addressing medical conditions contributing to fall risk

• Vision and hearing impairment	Corrective lenses, hearing aids
• Neuropathy and vascular disease affecting balance	Foot exams, orthotic shoes
• Urinary or fecal incontinence	Work up for underlying cause, incontinence supplies
• Cognitive impairment	Cognitive screening, home safety assessment
• Orthostatic hypotension	Orthostatic vitals, compression stockings
• Osteoporosis	Screening, weight bearing exercise, bisphosphonates

https://www.nia.nih.gov/health/falls-and-falls-prevention/falls-and-fractures-older-adults-causes-and-prevention

Osteoporosis



Screening with bone density testing:

- Women ≥ 65 years of age and men ≥ 70 years of age, regardless of clinical risk factors
- Younger postmenopausal women, women in the menopausal transition, and men aged 50 to 69 years with clinical risk factors for fracture
- Adults who have a fracture at age 50 years and older
- Adults with a condition (e.g., rheumatoid arthritis, organ transplant) or taking a medication (e.g., glucocorticoids, aromatase inhibitors, androgen deprivation therapy) associated with low bone mass or bone loss

Once diagnosed:

- Following up with PCP/metabolism clinic for consideration of therapy
- Resistance and balance exercise
- Monitoring vitamin D (≥ 30 ng/mL but below ≤ 50 ng/mL)
- Addressing other fall risks

Meyer F, et al. Fear of Falling, and Restrictions in Daily Living. Evidence From a Nationally Representative Sample of Community-Dwelling Older Adults. Front Endocrinol (Lausanne). 2019
LeBoff MS, et al. The clinician's guide to prevention and treatment of osteoporosis. Osteoporos Int. 2022

Home Assessments

Safety Assessment of Function and the Environment for Rehabilitation—Health Outcome Measurement and Evaluation (**SAFER-HOME v3**)

- This pre-discharge assessment is an interview and observation-based assessment that evaluates an individual's ability to engage in functional activities safely.

In-Home Occupational Performance Evaluation for Providing Assistance (**I-HOPE Assist**)

- This tool assesses changes in performance and safety in the home before home modifications and after home modifications.

Home Falls and Accidents Screening Tool (**Home FAST**)

- A short, 25-item assessment for identifying fall hazards in the homes of older adults

Westmead Home Safety Assessment (**WeHSA**)

- This tool has a long-form and a short-form and targets potential fall risks in older adults.

Home Safety Self-Assessment Tool (**HSSAT**)

- Patients and patient caregivers can use this self-assessment tool to self-identify and correct potential fall hazards.

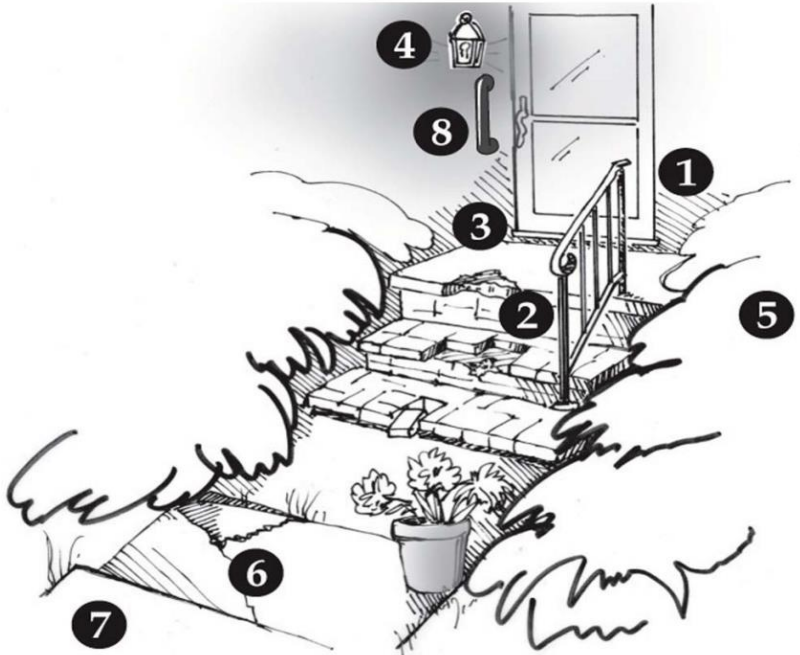
Informal practitioner-created checklists.

- Can create your own based on patient's differing levels of physical or cognitive disability, adults who are aging in place, etc.

Example of home safety assessment (HSSAT): https://www.tompkinscountyny.gov/files2/cofa/documents/hssat_v3.pdf
List of home safety assessments: https://www.ncbi.nlm.nih.gov/books/NBK560539/

Home Safety Self Assessment Tool (HSSAT)

Entrance to Front Door and Front Yard



The list identifies all of the potential home hazards that may cause a fall. If the item applies to your home, place a check in the box. Then add the total number of checks and enter it in the box below.

- ☐ 1. Lack of railings or unstable railing
- ☐ 2. Unsafe steps (too steep/cracked)
- ☐ 3. Unmarked or raised threshold
- ☐ 4. Lack of lighting at night
- ☐ 5. Lack of a ramp for a wheelchair
- ☐ 6. Uneven/cracked pavement
- ☐ 7. Ice or snow on driveway/walkway
- ☐ 8. Lack of an outdoor grab bar

Other_____

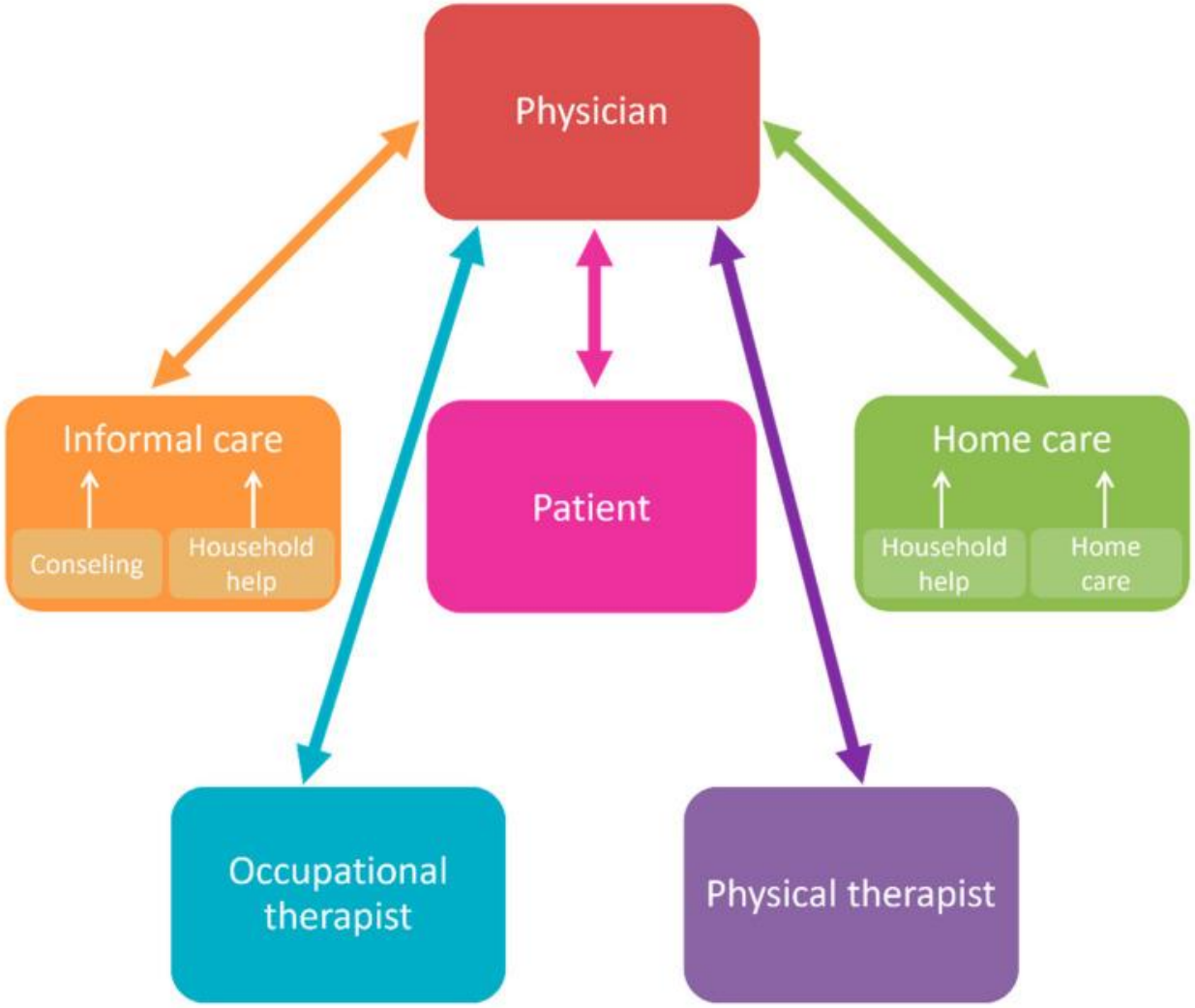
Total number of problems ☐

* The numbers correspond to the hazard in the picture and solutions on the following page

4

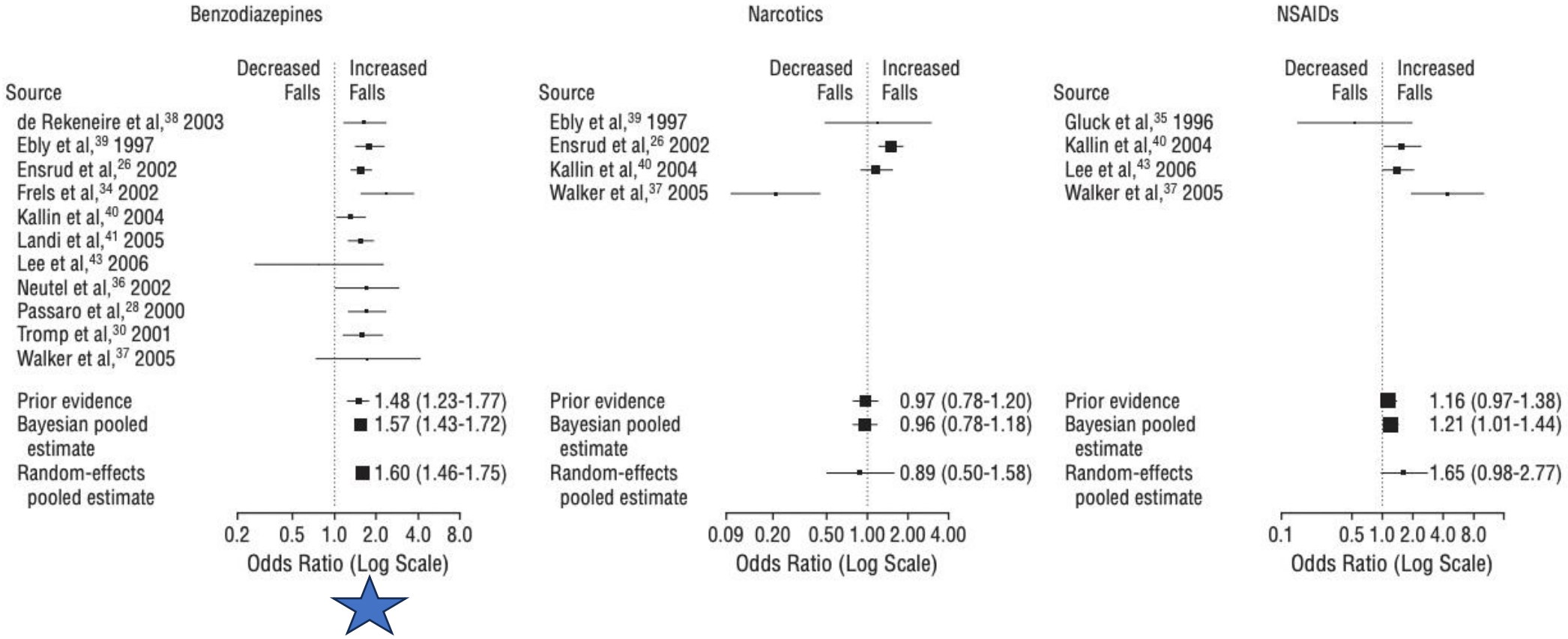
https://www.tompkinscountyny.gov/files2/cofa/documents/hssat_v3.pdf

Involving interdisciplinary team members



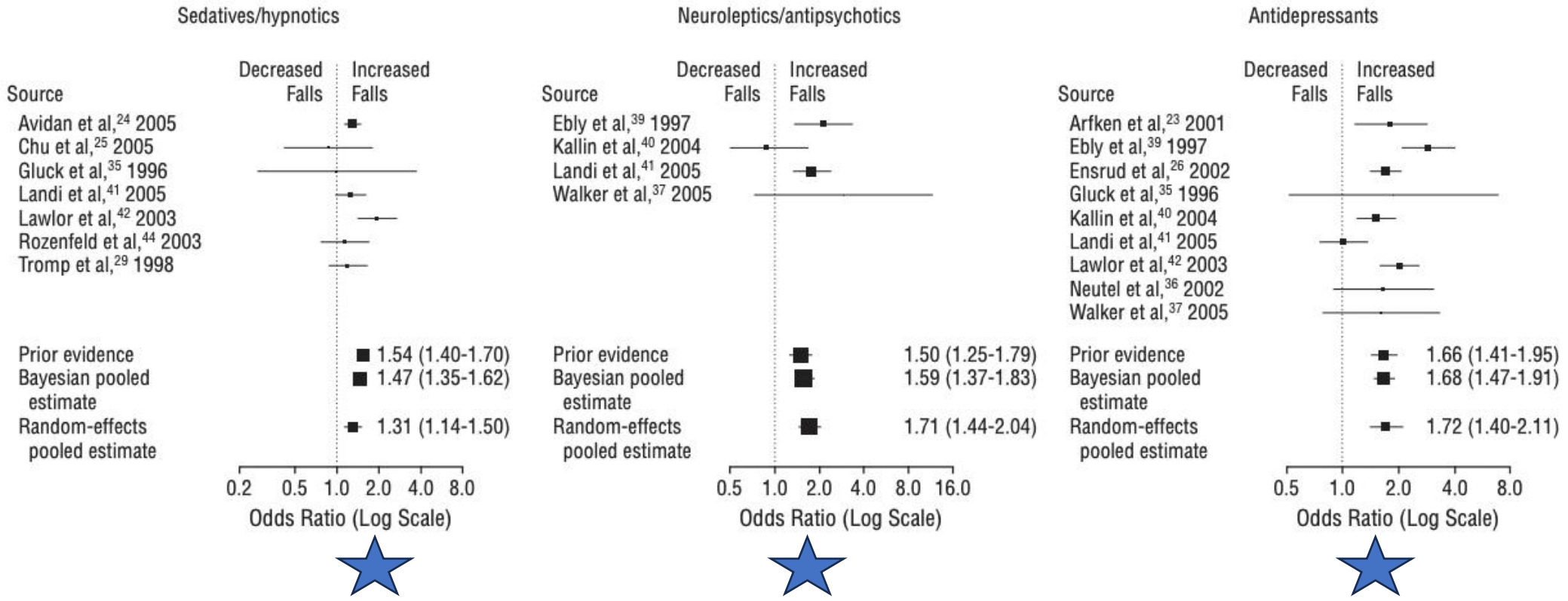
Baumann I, Wieber F, Volken T, Rüesch P, Glässel A. Interprofessional Collaboration in Fall Prevention: Insights from a Qualitative Study. Int J Environ Res Public Health. 2022 Aug 23;19(17):10477. doi: 10.3390/ijerph191710477. PMID: 36078195; PMCID: PMC9518433.

Examining high risk medications



Woolcott JC, et al. Meta-analysis of the impact of 9 medication classes on falls in elderly persons. Arch Intern Med. 2009

Examining high risk medications



Woolcott JC, et al. Meta-analysis of the impact of 9 medication classes on falls in elderly persons. Arch Intern Med. 2009

SSRIs and falls

Table 4. Interaction between SSRI use and frailty associated with falls after 12 months of follow-up.

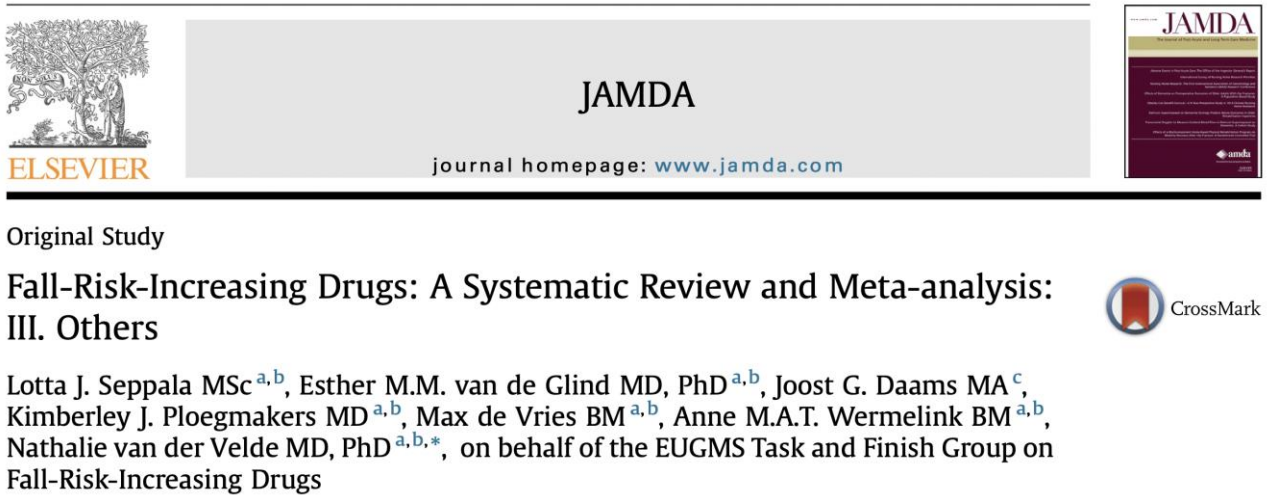
Variables	Odds Ratio (95% confidence interval)			
	Unadjusted Model[a]	p*	Adjusted Model[b]	p*
No SSRI use or frailty	1 (ref.)	–	1 (ref.)	–
SSRI use and frailty	2.48 (2.14–2.87)	<.001	2.97 (2.30–3.82)	<.001
Frailty, no SSRI use	1.17 (1.04–1.32)	.007	1.57 (1.05–2.32)	.025
SSRI use, no frailty	1.43 (1.27–1.63)	<.001	1.65 (1.26–2.15)	<.001

SSRIs + frailty = highest risk of falls

SSRIs also independently increase falls

Lin SM, et al. Serotonin receptor inhibitor is associated with falls independent of frailty in older adults. Aging Ment Health. 2021

Examining high risk medications



JAMDA

journal homepage: www.jamda.com

Original Study

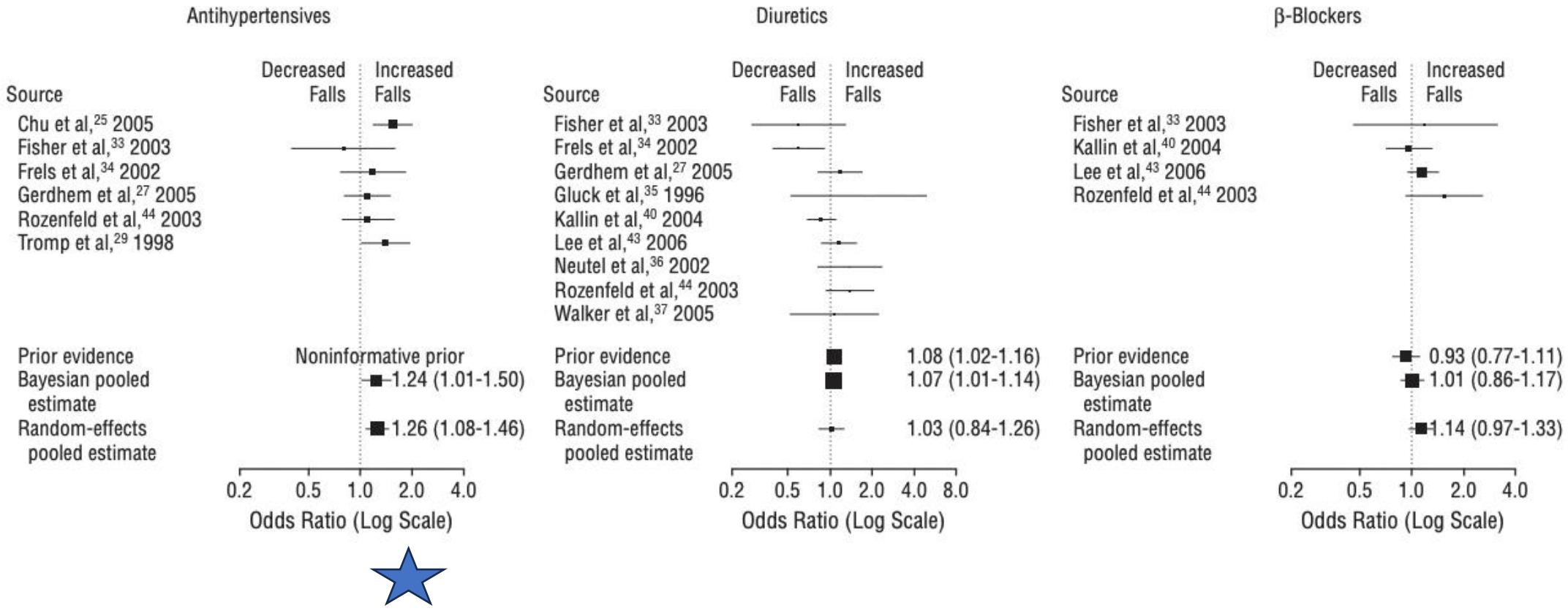
Fall-Risk-Increasing Drugs: A Systematic Review and Meta-analysis: III. Others

Lotta J. Seppala MSc[a,b], Esther M.M. van de Glind MD, PhD[a,b], Joost G. Daams MA[c], Kimberley J. Ploegmakers MD[a,b], Max de Vries BM[a,b], Anne M.A.T. Wermelink BM[a,b], Nathalie van der Velde MD, PhD[a,b,*], on behalf of the EUGMS Task and Finish Group on Fall-Risk-Increasing Drugs

- Antiepileptics OR 1.55 (1.25 - 1.92)
- Opioids OR 1.6 (1.35 - 1.91)
- Parkinson's meds, NSAIDs not significantly increased risk
- Long term exposure to PPIs increased fall risk

Seppala LJ, et al. EUGMS Task and Finish Group on Fall-Risk-Increasing Drugs. Fall-Risk-Increasing Drugs: A Systematic Review and Meta-analysis: III. Others. J Am Med Dir Assoc. 2018

Examining high risk medications



Woolcott JC, et al. Meta-analysis of the impact of 9 medication classes on falls in elderly persons. Arch Intern Med. 2009

Patient Cases

Lessley Chiriboga, MD
UT Southwestern Medical Center

Case 1- Introduction

- 76 year old woman
  - First evaluated for neuropathy in 2013
  - Established with primary care clinic in 2015
  - Started psychiatric care in 2018
- PMH
  - HTN
  - HLD
  - T2DM with polyneuropathy
  - Hypothyroidism
  - Osteoarthritis
  - Anemia
  - Vitamin B12 deficiency
- Psych hx
  - MDD
  - Anxiety
  - insomnia
- Significant Medications
  - Amitriptyline 50 mg qhs
  - Bupropion XL 150 mg daily
  - Cetirizine 10 mg daily
  - Fluoxetine 60 mg daily
  - Gabapentin 100 mg tid
  - OTC Vitamin B12 supplement
  - Tizanidine 4 mg daily as needed
  - Tramadol 50 mg every 4 hours as needed
  - Zolpidem 5 mg qhs prn insomnia
- Retrospective STEADI score: 5

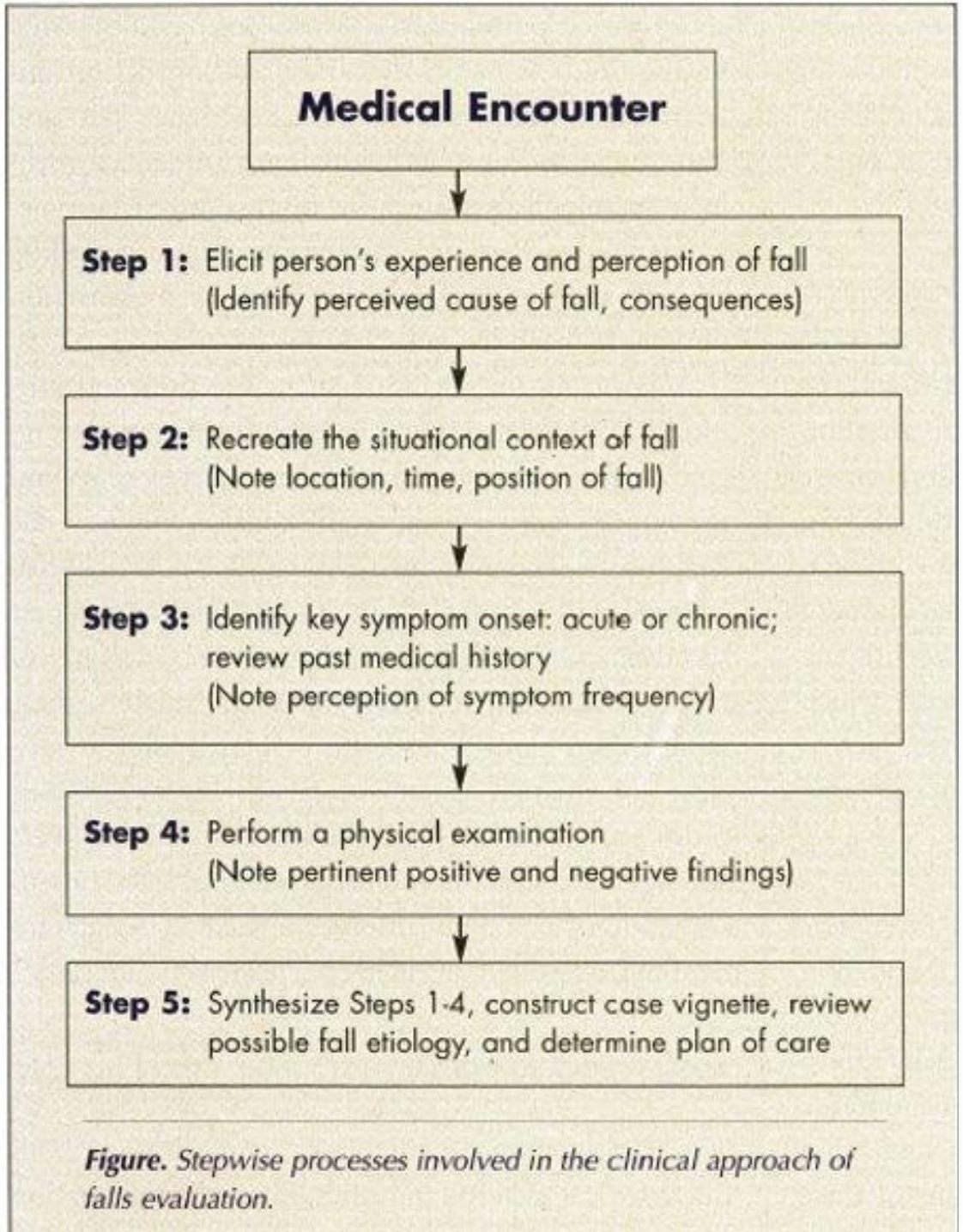


Figure. *Stepwise processes involved in the clinical approach of falls evaluation.*

First Fall

Patient had a fall in 2018 (71 y/o)

1. \+ lightheadedness and unsteadiness at baseline, but no prior fall

2. Setting: during nighttime awakening in the bathroom, she had more dizziness than usual. Needed assistance from her husband to get up.

3. PMH: T2DM with neuropathy, anemia
   New PMH: orthostatic hypotension, polyarthritis, and RLS

4. Minor skin breaks and contusions to right forearm, no head injury signs. +orthostasis

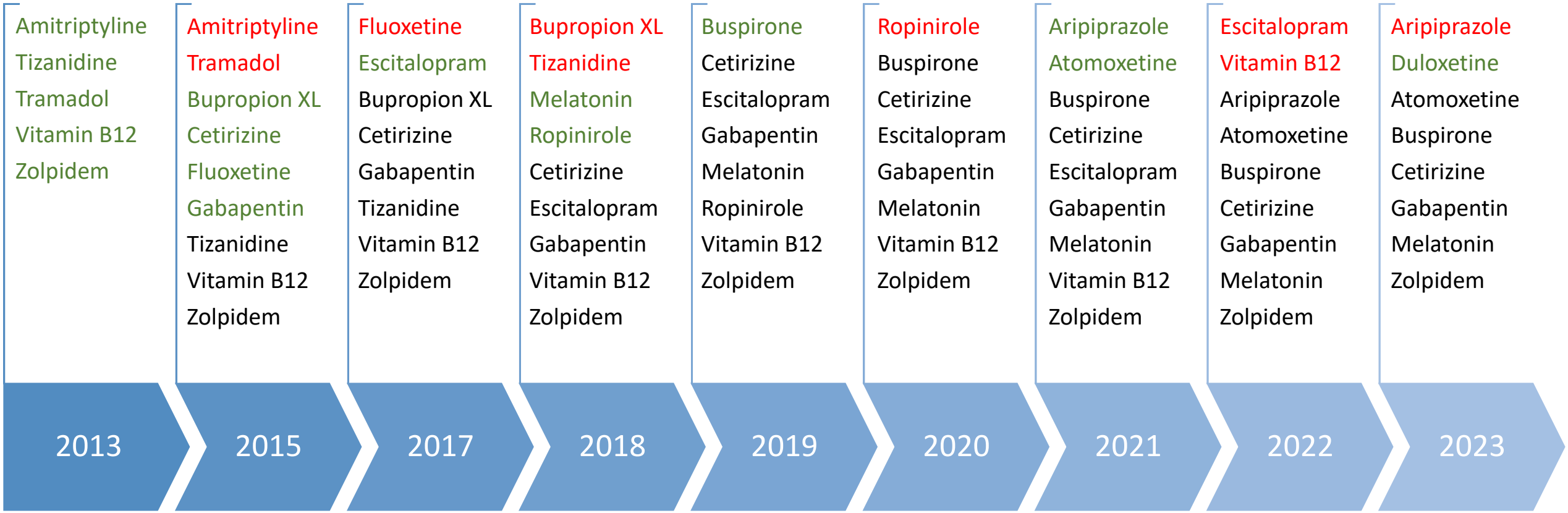
5. Possible sources: medication side effects (Tizanidine), orthostatic hypotension, age, and neuropathy
   Plan: Tizanidine was decreased, and she was referred for autonomic testing with neurology

Results

- Autonomic Function Testing
  - Mild cardiovagal and sympathetic adrenergic impairment
  - Mild diabetic autonomic neuropathy
- Medication Updates
  - Tizanidine was eventually discontinued --> lightheadedness frequency improved
  - Ropinirole was started --> RLS improved

Medication Timeline

Medication started
Medication discontinued
Medication continued



Summary of 2023

- 2 falls less than 6 months apart
  - Likely cause was increased dizziness
  - Both had head injuries. One required ER evaluation for scalp laceration, no LOC
- New PMH
  - alpha-synucleinopathy with pure autonomic failure
  - Osteoporosis
  - Sensorineural hearing loss
- Ddx
  - Lewy body
  - Parkinsonism
- Repeat STEADI score: 8
- Strengths
  - Insight
  - Support from her husband
  - Well established with her treatment team

Case 2- Introduction

- 82 year old woman
- PMH
  - Hyperparathyroidism
  - Major neurocognitive disorder
  - Grief
  - Major depressive disorder
  - Alcohol use disorder

Psych Hx

- Limitations
  - Reliability of her report- major NCD
  - Obtaining collateral- she becomes defensive in the clinic

- Risk for falls
  - STEADI score: 5. Falls in the past 1 year, feeling unsteady, will hold on to furniture, and experience sadness/depression
  - Alcohol use --> greater risk for mechanical falls
  - Recalculated STEADI score: 7, if we consider the common effects of alcohol use as medication side effects

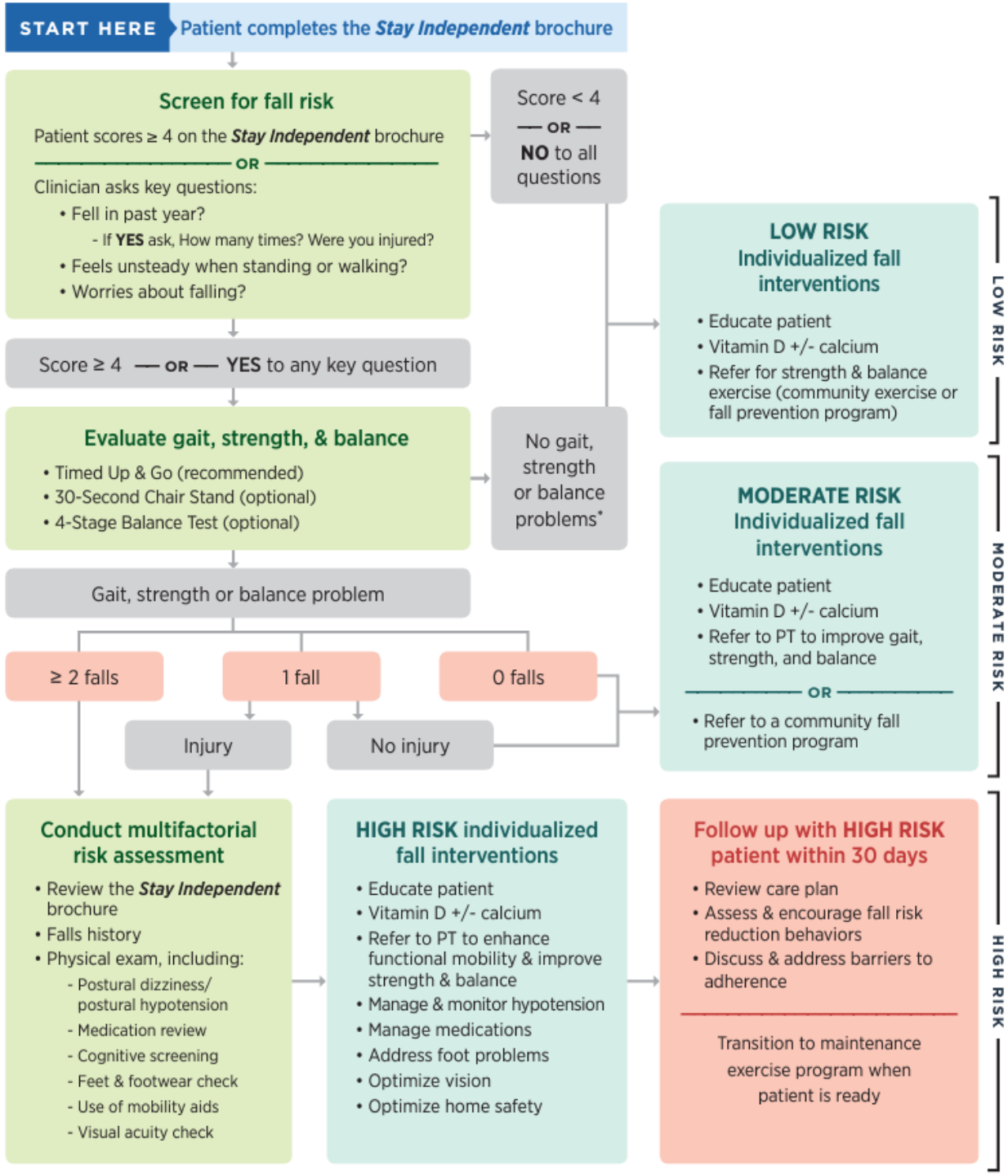
Case 2

- Medications changes
  - Acamprosate for alcohol use disorder
- Immediate Results
  - Reduction in alcohol consumption
  - Better engagement in appointments

- Long term Results
  - Continued decreased alcohol use, currently 2 drinks or less per week
  - No falls in more than 1 year
  - Update STEADI score: 1 for sadness/depression
  - Patient is more involved in treatment planning regarding depression and grief

Take Aways

- Falls are highly prevalent in older adults
- It is crucial to screen for fall risk and evaluate gait
  - History of falls is a big risk for future falls!
- Have a standardized approach to assessing a patient at high risk for falls
- Take a multifaceted approach to fall prevention



https://www.cdc.gov/steadi/pdf/steadi-algorithm-print.pdf

Thank you!

Questions?