Chronic Pain in Community-dwelling Older Adults

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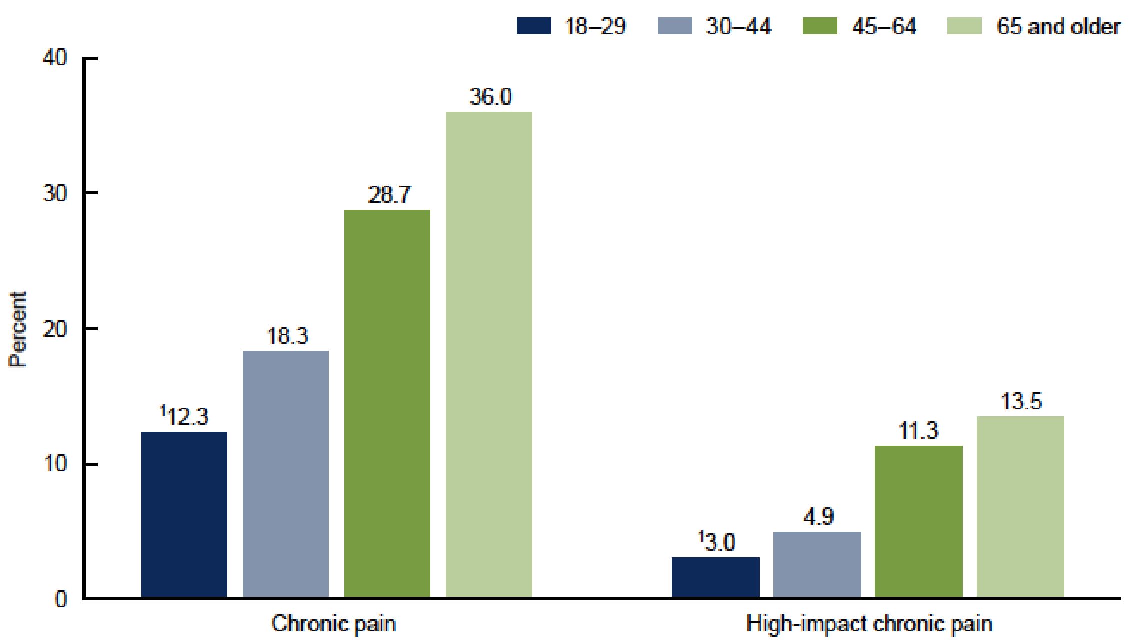
Outline

- Background
- Epidemiology of Pain
- Chronic Pain and the 5Ms
- Challenges with pharmacologic treatments
- Overview of non-pharmacologic treatments

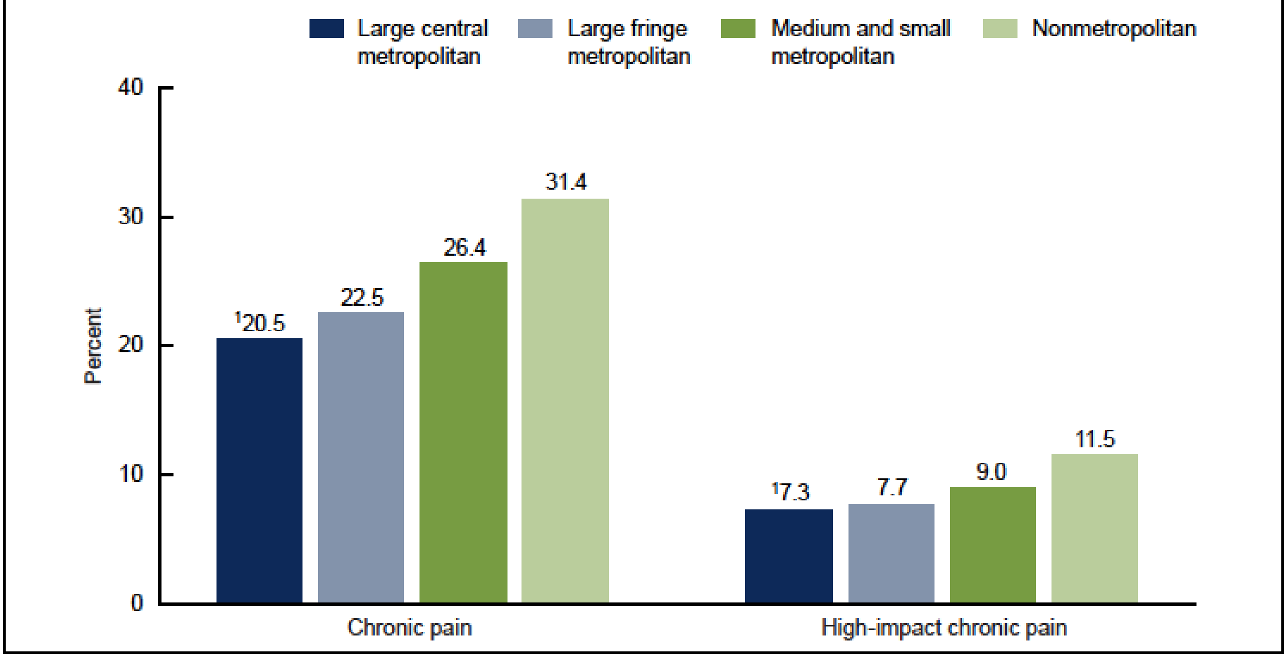
Pain in Older Adults

- Pain is the most commonly endorsed condition underlying disability
  - Women's Health & Aging Study (Leveille, Fried, Guralnik 2002)
    - Basic ADLs, Instrumental ADLs, and Mobility function
  - Cardiovascular Health Study (Ettinger et al 1994)
  - English Longitudinal Study of Ageing (Melzer et al 2005)
- Preservation of independence and pain relief are 2 of the most commonly endorsed health care goals of older adults (Fried et al. 2011)

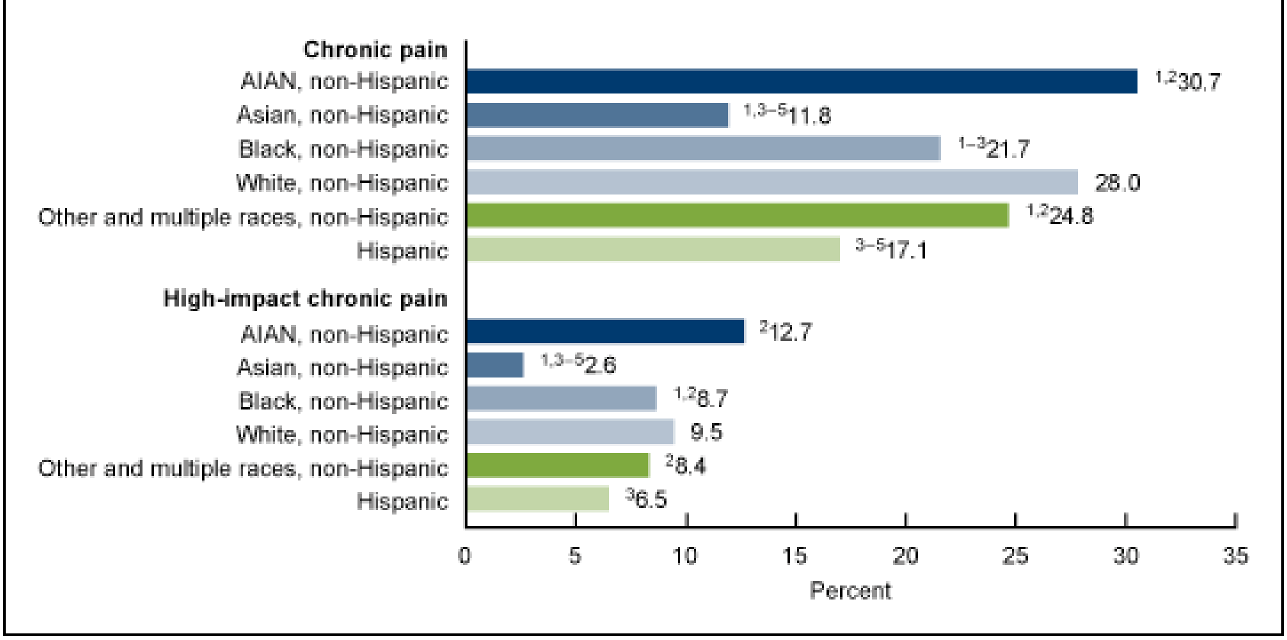
Prevalence of chronic pain and high impact pain, by age: US 2023

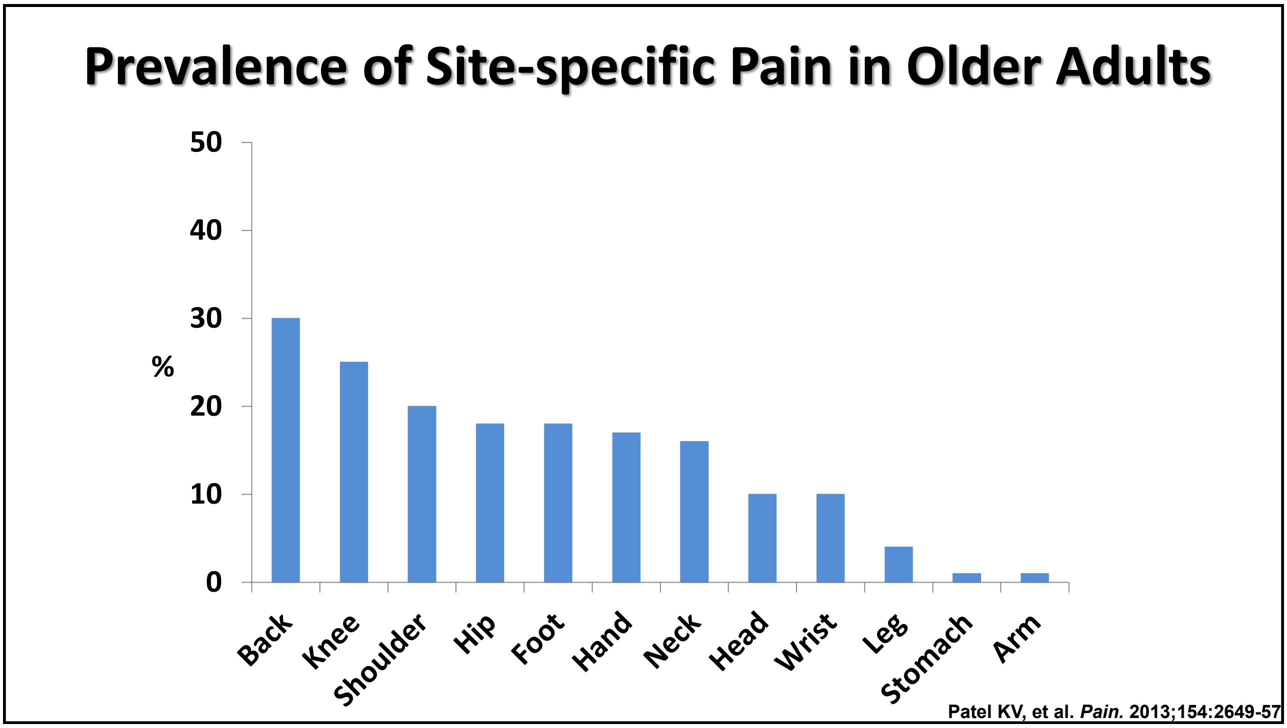


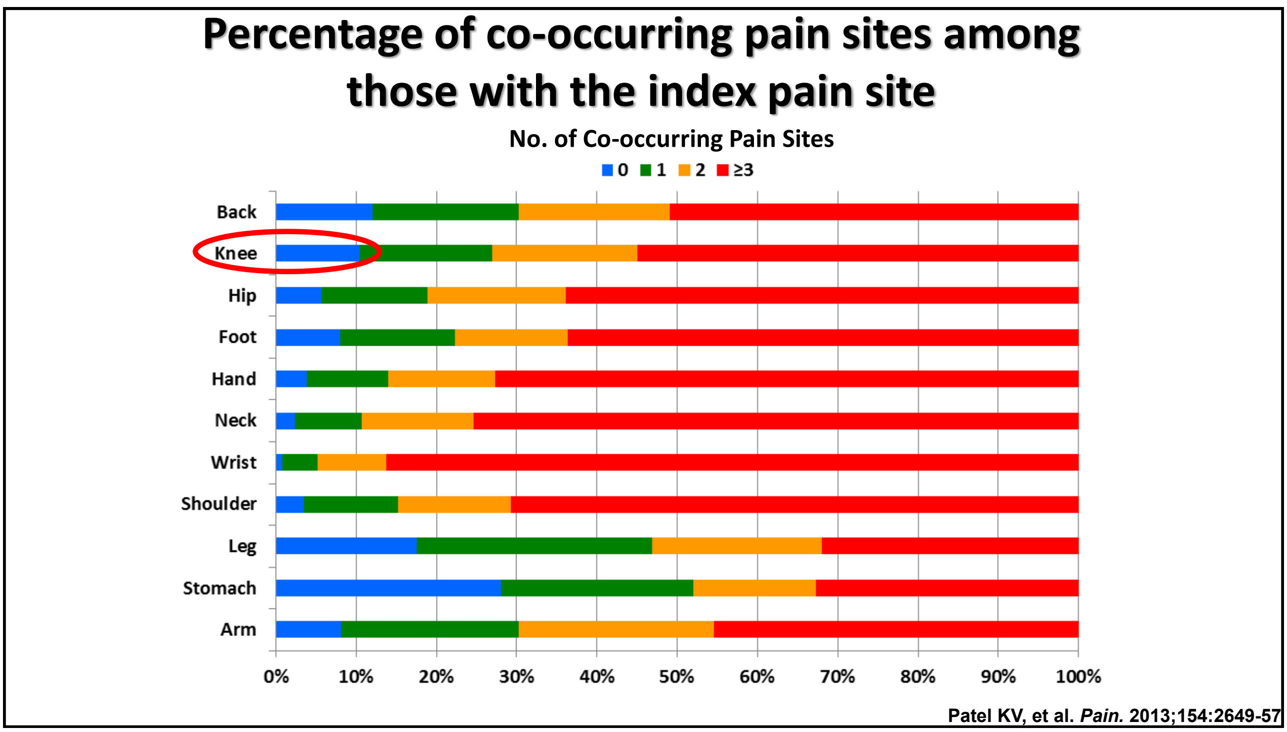
Prevalence of chronic pain and high impact pain, by rurality: US 2023



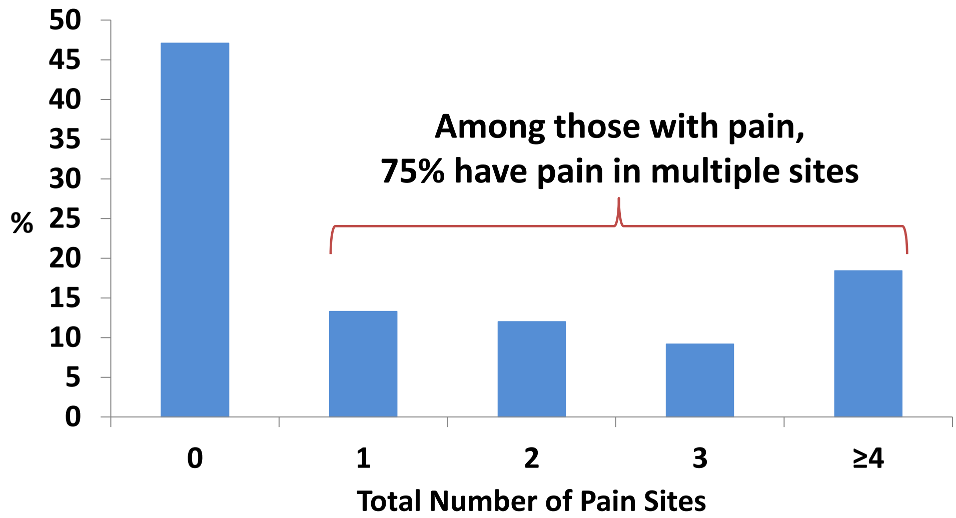
Prevalence of chronic pain and high impact pain, by race and ethnicity: US 2023




Prevalence of Site-specific Pain in Older Adults
50
40
30
%
20
10
0
Back
Knee
Shoulder
Hip
Foot
Hand
Neck
Head
Wrist
Leg
Stomach
Arm
Patel KV, et al. *Pain.* 2013;154:2649-57

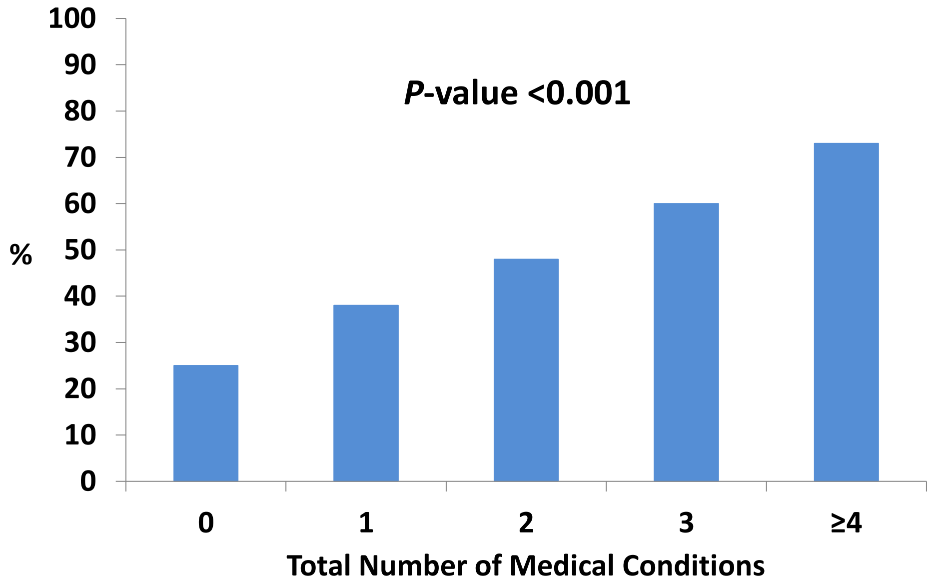

Percentage of co-occurring pain sites among those with the index pain site
No. of Co-occurring Pain Sites
0
1
2
≥3
Back
Knee
Hip
Foot
Hand
Neck
Wrist
Shoulder
Leg
Stomach
Arm
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Patel KV, et al. *Pain.* 2013;154:2649-57

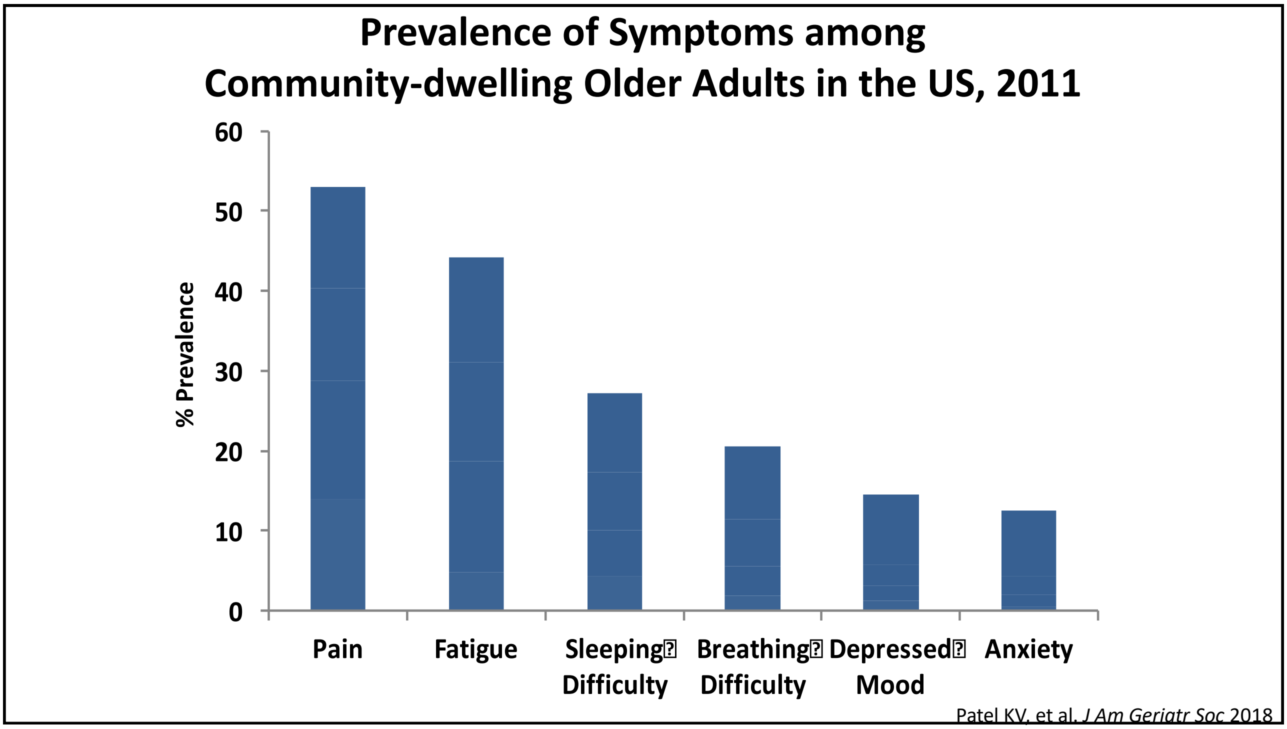
Distribution of Total No. of Pain Sites



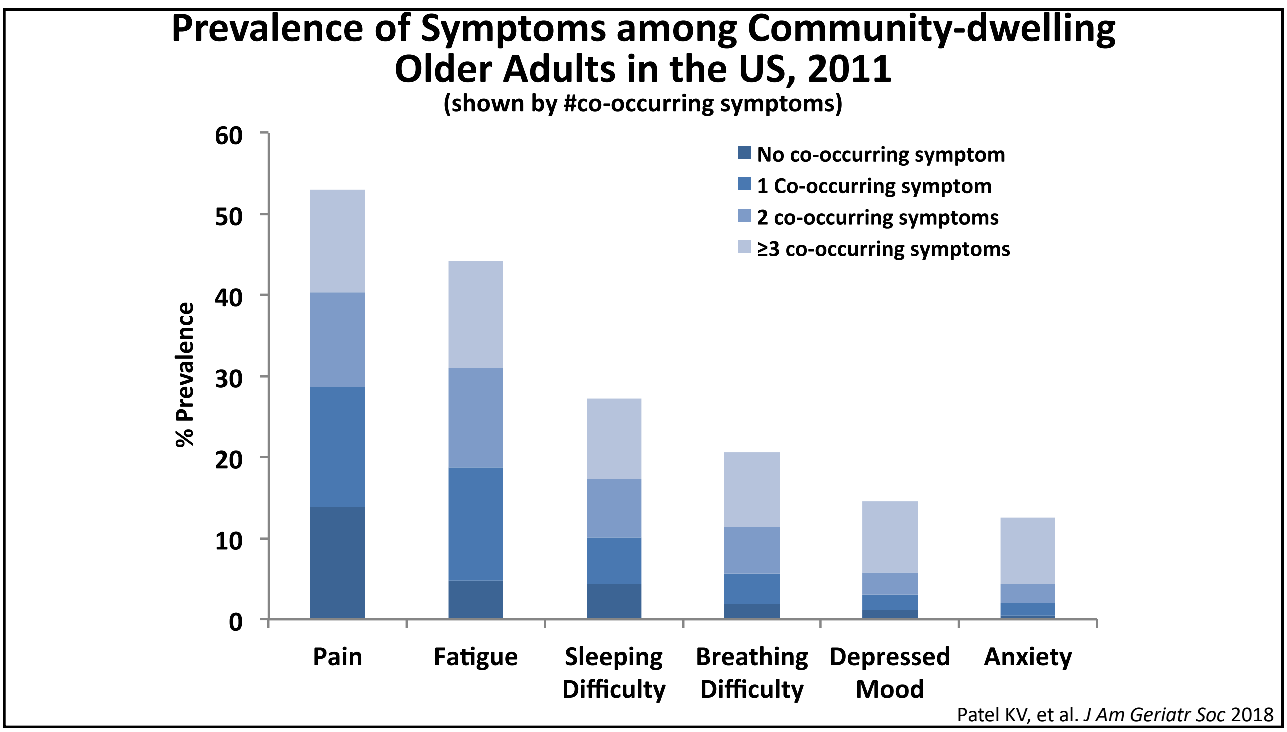
Patel KV, et al. *Pain.* 2013;154:2649-57

Prevalence of Pain, by Total No. of Medical Conditions



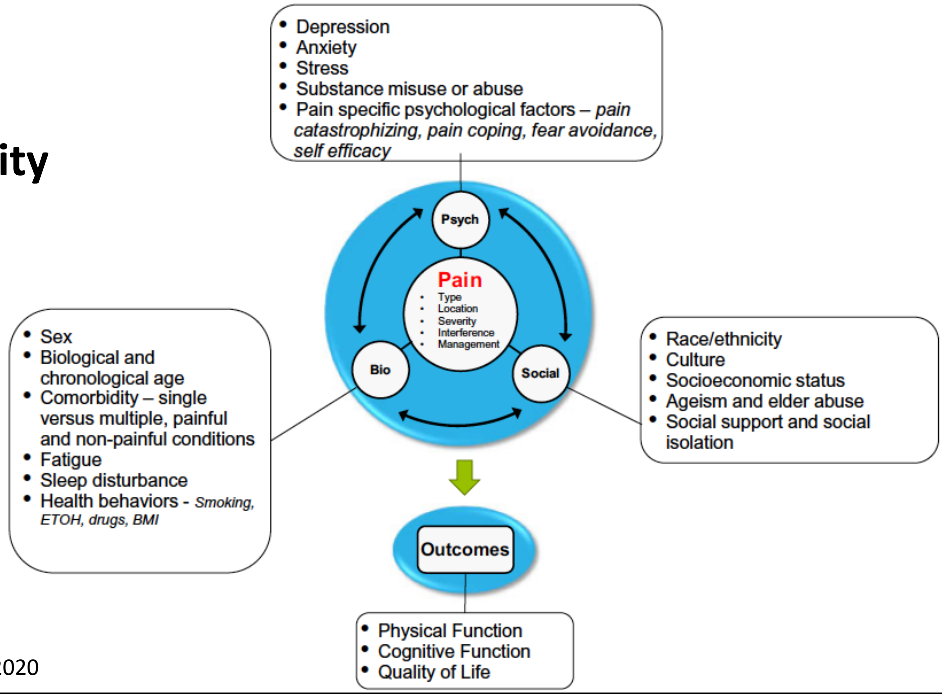


Prevalence of Symptoms among
Community-dwelling Older Adults in the US, 2011
% Prevalence
0
10
20
30
40
50
60
Pain
Fatigue
Sleeping Difficulty
Breathing Difficulty
Depressed Mood
Anxiety
Patel KV, et al. J Am Geriatr Soc 2018



Prevalence of Symptoms among Community-dwelling Older Adults in the US, 2011
(shown by #co-occurring symptoms)
% Prevalence
0
10
20
30
40
50
60
No co-occurring symptom
1 Co-occurring symptom
2 co-occurring symptoms
≥3 co-occurring symptoms
Pain
Fatigue
Sleeping Difficulty
Breathing Difficulty
Depressed Mood
Anxiety
Patel KV, et al. J Am Geriatr Soc 2018

Pain and Multicomplexity

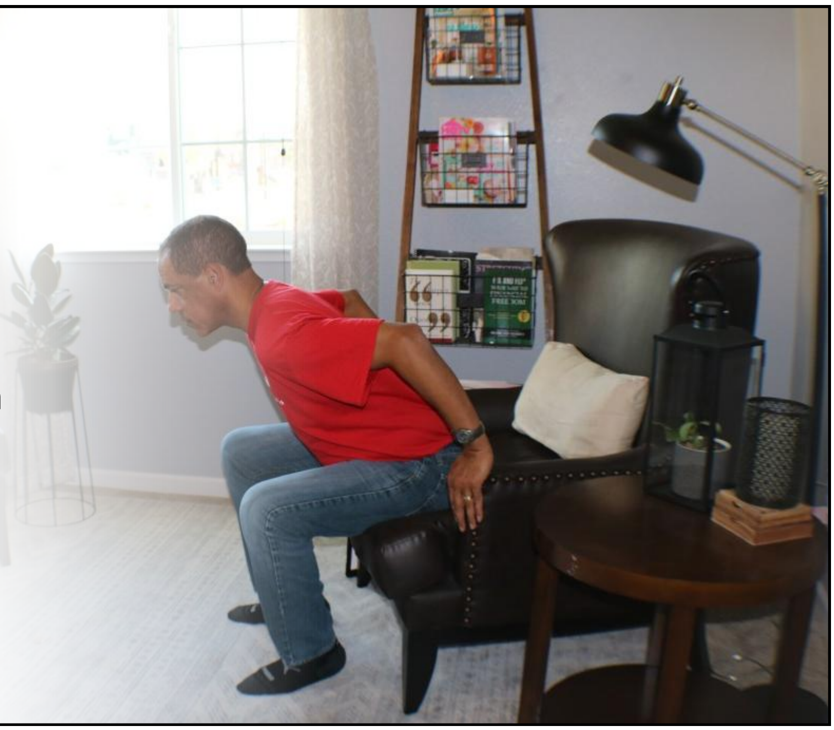


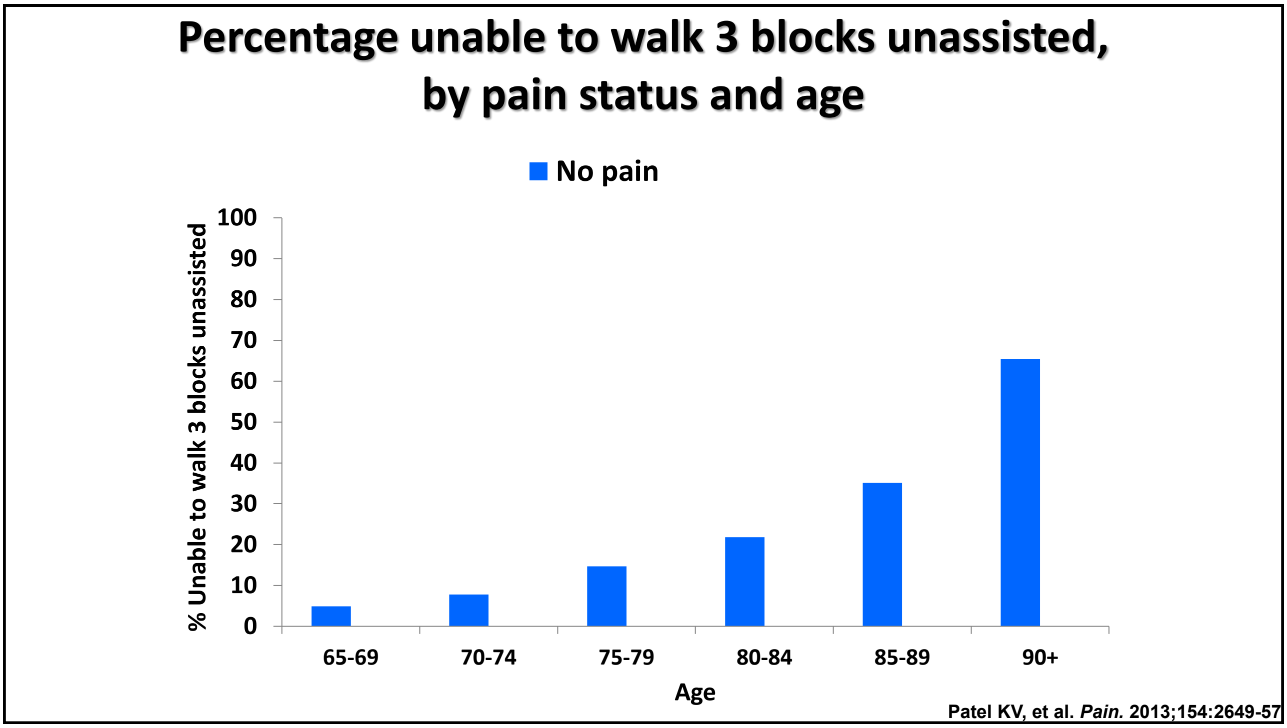
Miaskowski C, et al. *Pain Med* 2020

Pain and the 4Ms

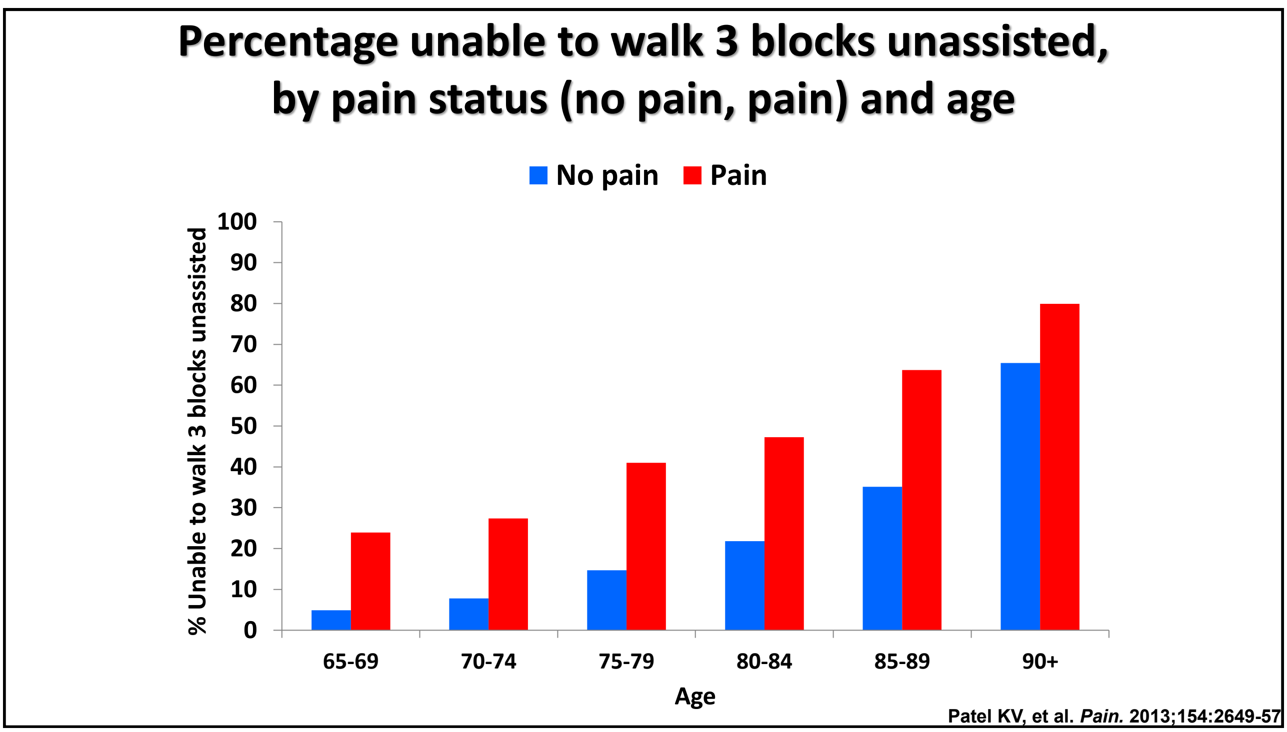
Mobility

- Ability to ambulate, transfer, and maintain balance

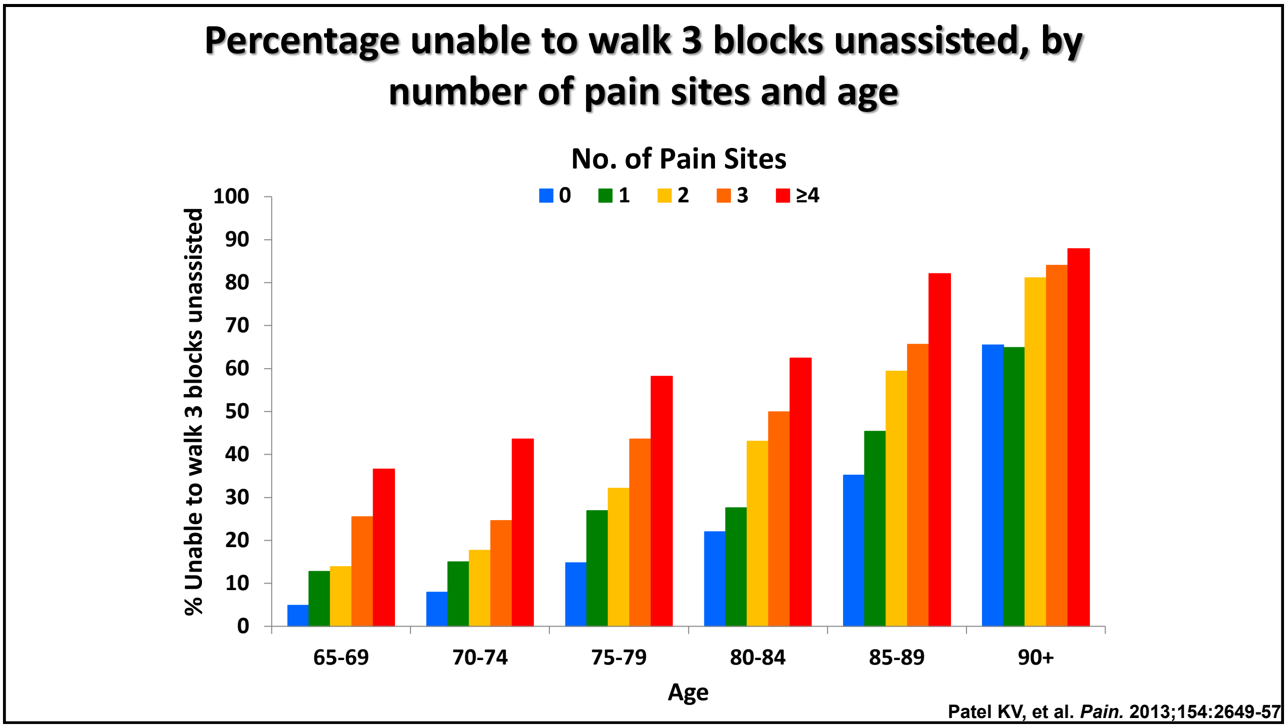


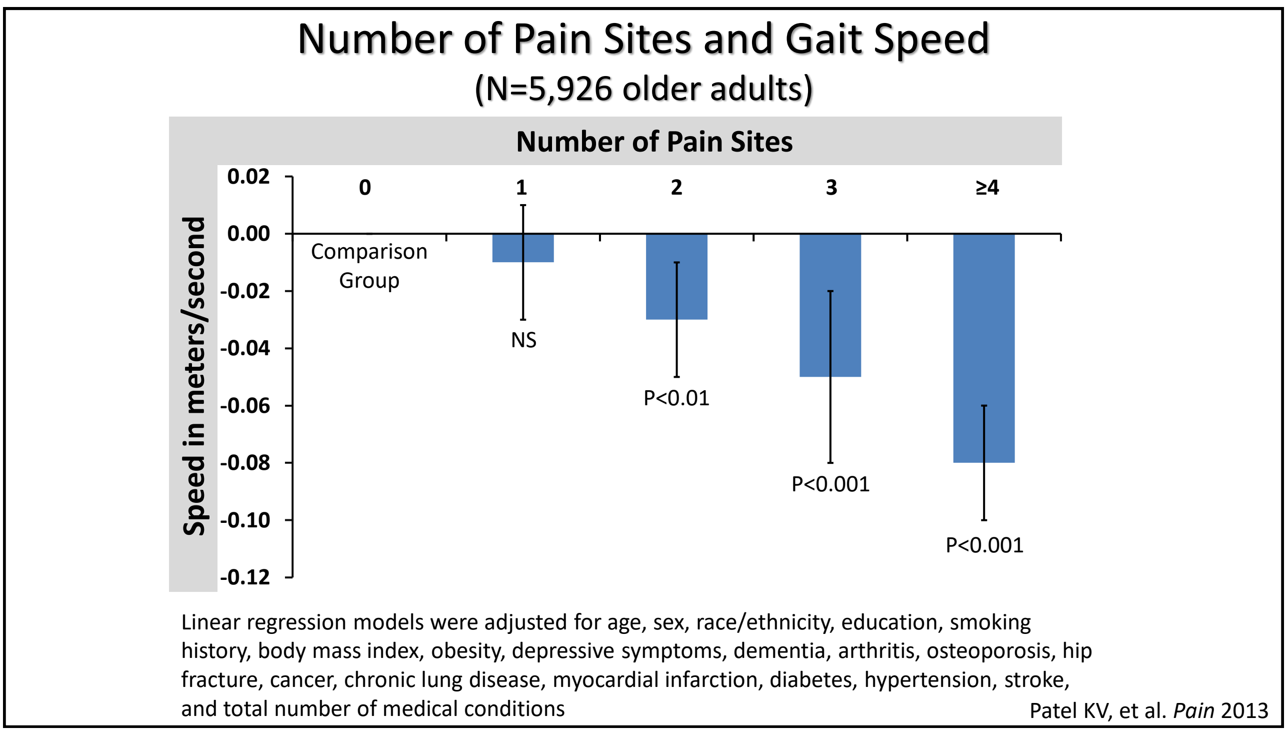


Percentage unable to walk 3 blocks unassisted, by pain status and age
No pain
% Unable to walk 3 blocks unassisted
100
90
80
70
60
50
40
30
20
10
0
65-69
70-74
75-79
80-84
85-89
90+
Age
Patel KV, et al. Pain. 2013;154:2649-57



Percentage unable to walk 3 blocks unassisted, by pain status (no pain, pain) and age
No pain
Pain
% Unable to walk 3 blocks unassisted
100
90
80
70
60
50
40
30
20
10
0
65-69
70-74
75-79
80-84
85-89
90+
Age
Patel KV, et al. Pain. 2013;154:2649-57


Percentage unable to walk 3 blocks unassisted, by number of pain sites and age
No. of Pain Sites
0
1
2
3
≥4
% Unable to walk 3 blocks unassisted
100
90
80
70
60
50
40
30
20
10
0
65-69
70-74
75-79
80-84
85-89
90+
Age
Patel KV, et al. *Pain.* 2013;154:2649-57

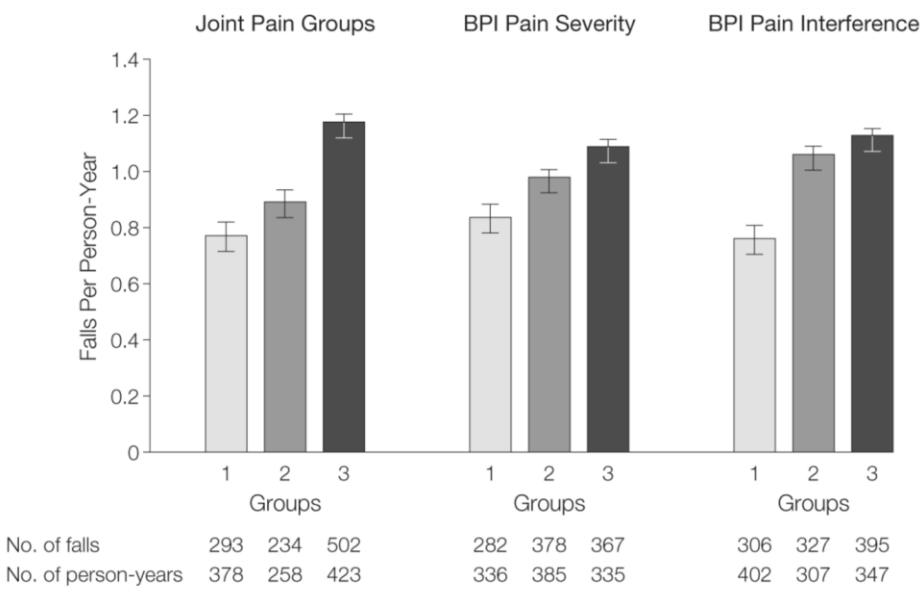

Number of Pain Sites and Gait Speed
(N=5,926 older adults)
Number of Pain Sites
Speed in meters/second
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
0
1
2
3
≥4
Comparison Group
NS
P<0.01
P<0.001
P<0.001
Linear regression models were adjusted for age, sex, race/ethnicity, education, smoking history, body mass index, obesity, depressive symptoms, dementia, arthritis, osteoporosis, hip fracture, cancer, chronic lung disease, myocardial infarction, diabetes, hypertension, stroke, and total number of medical conditions
Patel KV, et al. *Pain* 2013

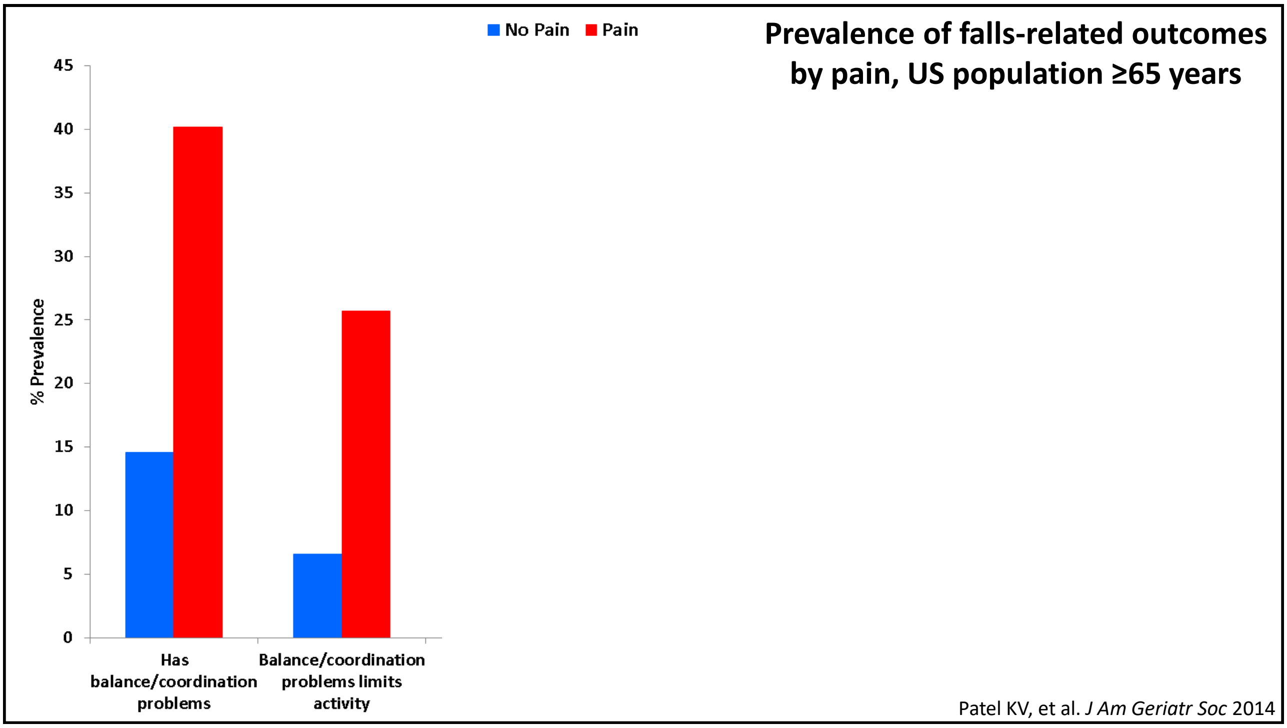
Pain and Falls

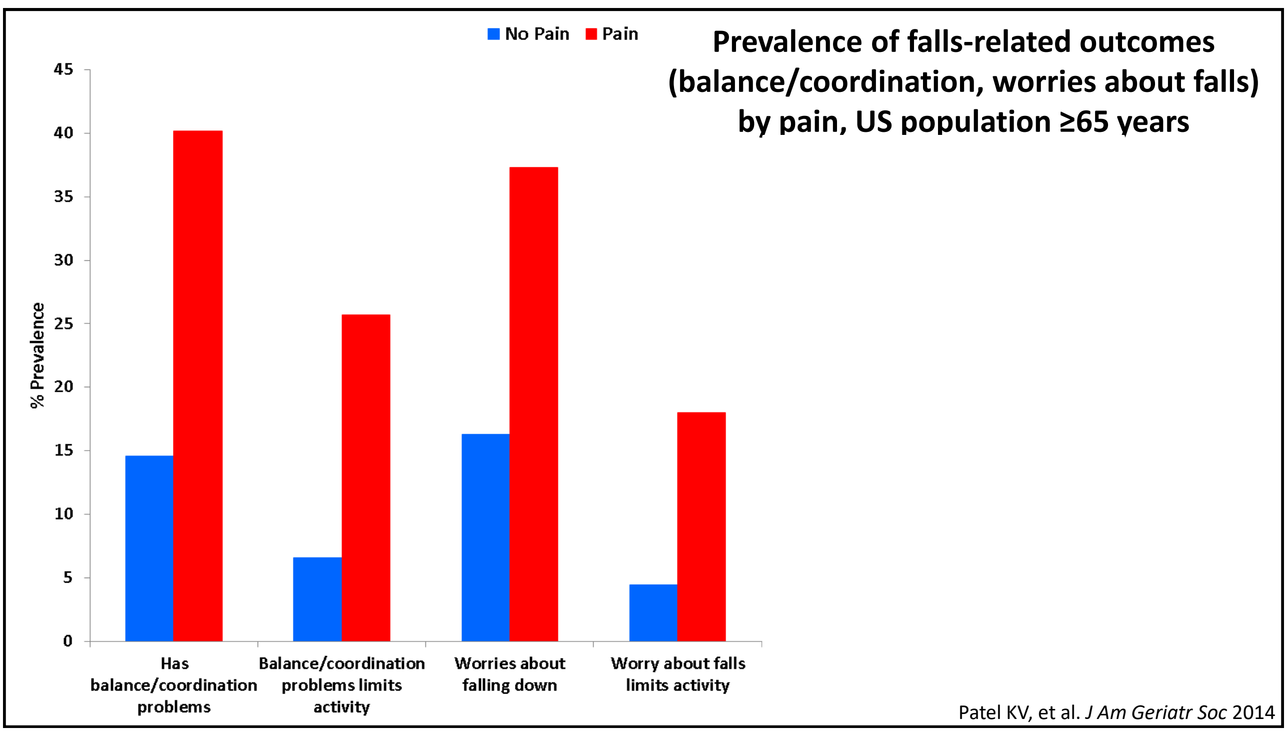
- Pain is associated with several risk factors for falls, including muscle weakness and gait impairment
- Pain might predispose older persons to falling through
  - Decreased physical activity
  - Fear of movement
  - Postural instability
  - Inhibit neuromuscular response

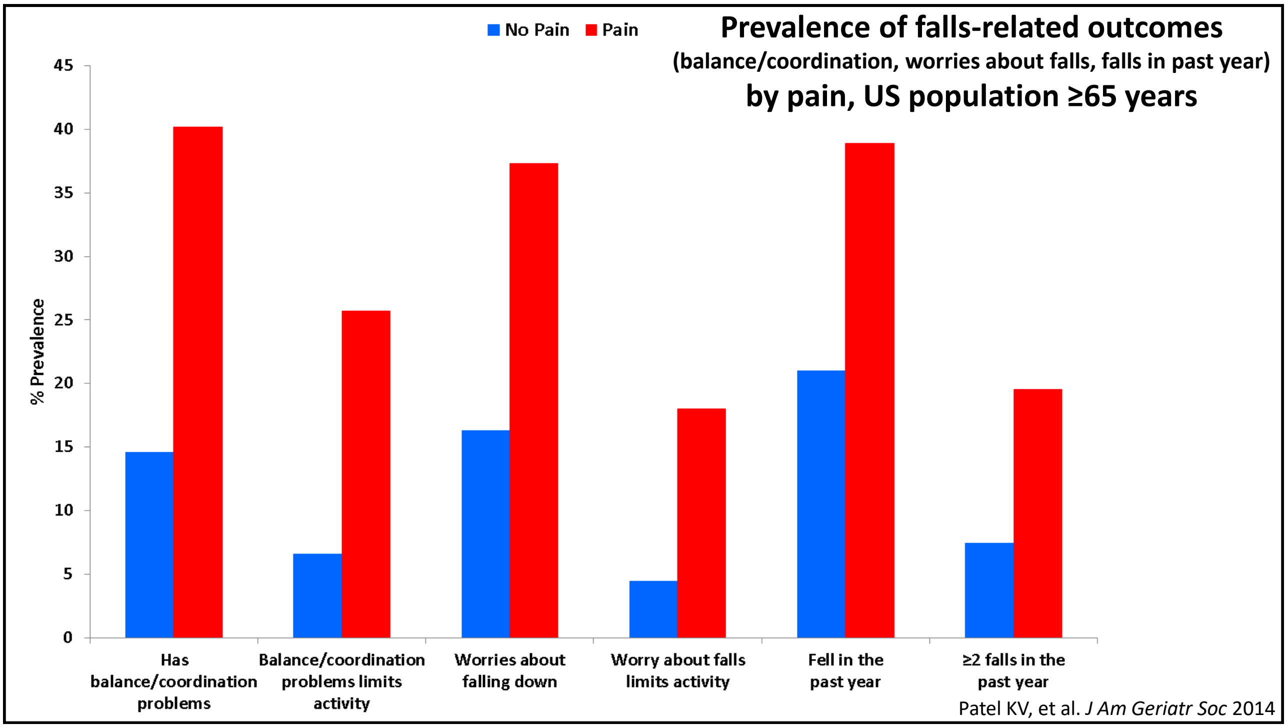
Chronic Musculoskeletal Pain and the Occurrence of Falls in an Older Population

Leveille et al JAMA. 2009;302(20):2214-2221

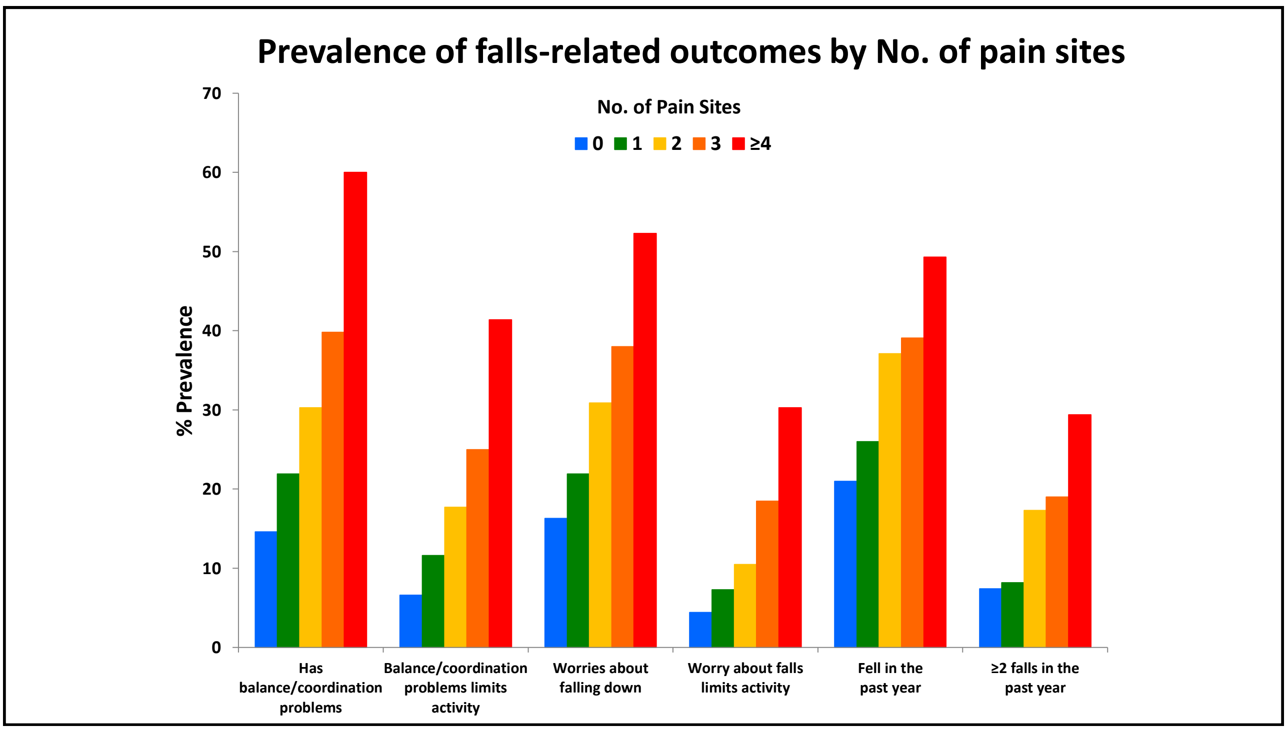



No Pain
Pain
Prevalence of falls-related outcomes by pain, US population ≥65 years
% Prevalence
45
40
35
30
25
20
15
10
5
0
Has balance/coordination problems
Balance/coordination problems limits activity
Patel KV, et al. J Am Geriatr Soc 2014


No Pain
Pain
Prevalence of falls-related outcomes (balance/coordination, worries about falls) by pain, US population ≥65 years
% Prevalence
45
40
35
30
25
20
15
10
5
0
Has balance/coordination problems
Balance/coordination problems limits activity
Worries about falling down
Worry about falls limits activity
Patel KV, et al. J Am Geriatr Soc 2014



Prevalence of falls-related outcomes
(balance/coordination, worries about falls, falls in past year)
by pain, US population ≥65 years
No Pain
Pain
% Prevalence
0
5
10
15
20
25
30
35
40
45
Has balance/coordination problems
Balance/coordination problems limits activity
Worries about falling down
Worry about falls limits activity
Fell in the past year
≥2 falls in the past year
Patel KV, et al. *J Am Geriatr Soc* 2014

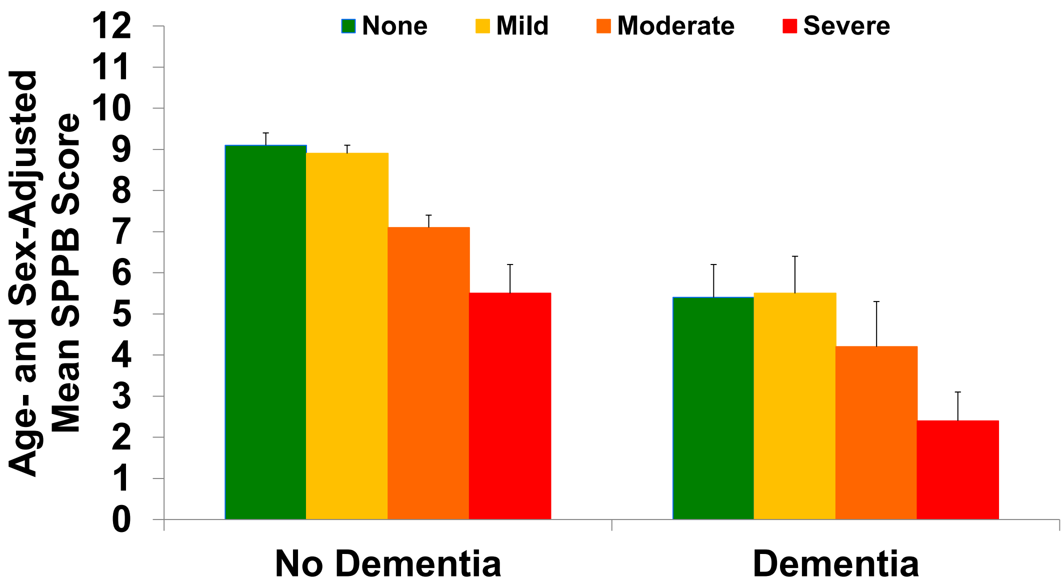


Prevalence of falls-related outcomes by No. of pain sites
No. of Pain Sites
0
1
2
3
≥4
% Prevalence
0
10
20
30
40
50
60
70
Has balance/coordination problems
Balance/coordination problems limits activity
Worries about falling down
Worry about falls limits activity
Fell in the past year
≥2 falls in the past year

Pain and the 4Ms: Mentation

- Increased risk of cognitive impairment
- Pain assessment
- Treatment plan

Age- and Sex-Adjusted Mean Physical Performance Scores according to Pain Intensity NRS and Dementia Status



Pain and the 4Ms: Medication

- Polypharmacy
- Age-related changes in hepatic and renal function
- Acetaminophen
- NSAIDs
  - Topicals
- Opioids
- Anti-depressants

Pain and the 4Ms: Matters Most

- Centering care around the individual's values, preferences, and goals

Nonpharmacologic Treatments for Chronic Pain

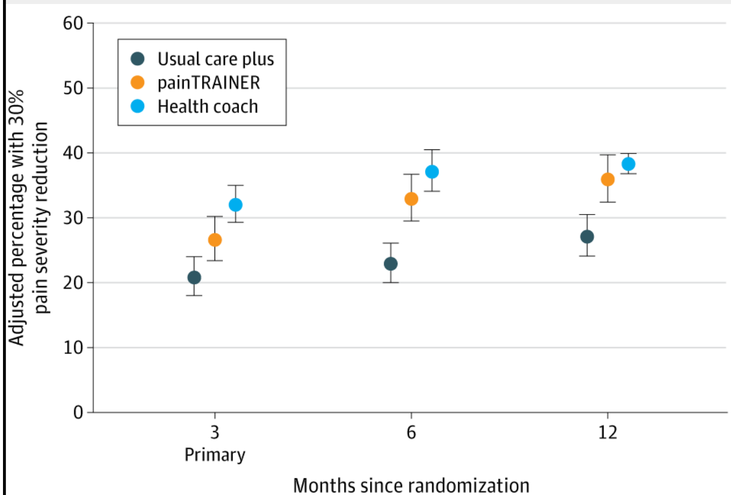
Evidence-based Psychological Therapies

- **Cognitive Behavioral Therapy**
  - Helps modify maladaptive thinking patterns (e.g., fear of movement, catastrophizing)
- **Mindfulness**
  - Focuses on present moment in nonjudgemental way
- **Acceptance and Commitment Therapy**
  - Focuses on engagement in valued activities despite ongoing pain

Telehealth and Online Cognitive Behavioral Therapy–Based Treatments for High-Impact Chronic Pain: A Randomized Clinical Trial

JAMA. 2025;334(7):592-605. doi:10.1001/jama.2025.11178

JAMA Network



Observed No.	3	6	12
Usual care plus	621	622	639
painTRAINER	542	547	583
Health coach	635	621	639

painTrainer is a free online, interactive program

https://www.paintrainer.org/

JAMA Internal Medicine

RCT: Learning to Apply Mindfulness to Pain (LAMP) Study

POPULATION

424 Men, 387 Women

Veterans with moderate to severe chronic pain

Mean (SD) age, 54.6 (12.9) y

INTERVENTION

811 Participants randomized

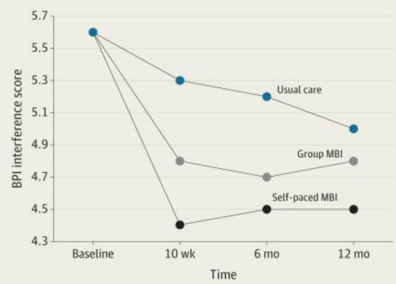
270 Group mindfulness-based intervention (MBI)
8 Weekly sessions of expert-delivered pre-recorded mindfulness content and facilitated group discussions, via telehealth

271 Self-paced MBI
8 Weekly sessions of asynchronous MBI, with prerecorded mindfulness content and 3 facilitator calls

270 Usual care
No access to MBI

FINDINGS

Pain-related function over time was significantly lower for participants in both MBI groups compared to usual care, but there was no significant difference between the two MBI groups



Between-group differences in primary outcome, compared to usual care:

Group MBI: −0.4 (95% CI, −0.7 to −0.2); *P* = .002
Self-paced MBI: −0.7 (95% CI, −1.0 to −0.4); *P* <.001

SETTINGS / LOCATIONS

3 Veterans Affairs hospitals

PRIMARY OUTCOME

Change in pain-related function over time, assessed using the Brief Pain Inventory (BPI) interference scale (range, 0-10; higher scores indicate worse function) and averaged over 3 time points in the 12-mo follow-up period

Burgess DJ, Calvert C, Campbell EMH, et al. Telehealth mindfulness-based interventions for chronic pain: the LAMP randomized clinical trial. *JAMA Intern Med.* Published online August 19, 2024. doi:10.1001/jamainternmed.2024.3940

JAMA Network Open

RCT: Acupuncture for Chronic Low Back Pain in Older Adults

POPULATION

305 Men, 495 Women

Older adults (aged ≥65 y) with chronic low back pain

Mean age: 73.6 y

INTERVENTION

800 Individuals randomized

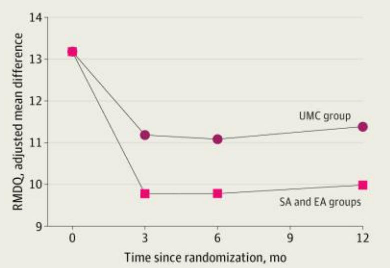
266 Usual medical care (UMC)
Access to all covered pain-related services available from participating health care systems

265 Standard acupuncture (SA)
Between 8 and 15 acupuncture needling sessions over 12 wk + UC

269 Standard plus enhanced acupuncture (EA)
SA plus ≤6 maintenance acupuncture needling sessions during next 12 wk

FINDINGS

RMDQ score changes were significantly better in the SA and EA groups compared with the UMC group; benefits persisted at 12 mo



Adjusted mean difference:

SA vs UMC: −1.0 (95% CI, −1.9 to −0.1)
EA vs UMC: −1.5 (95% CI, −2.5 to −0.6)

SETTINGS / LOCATIONS

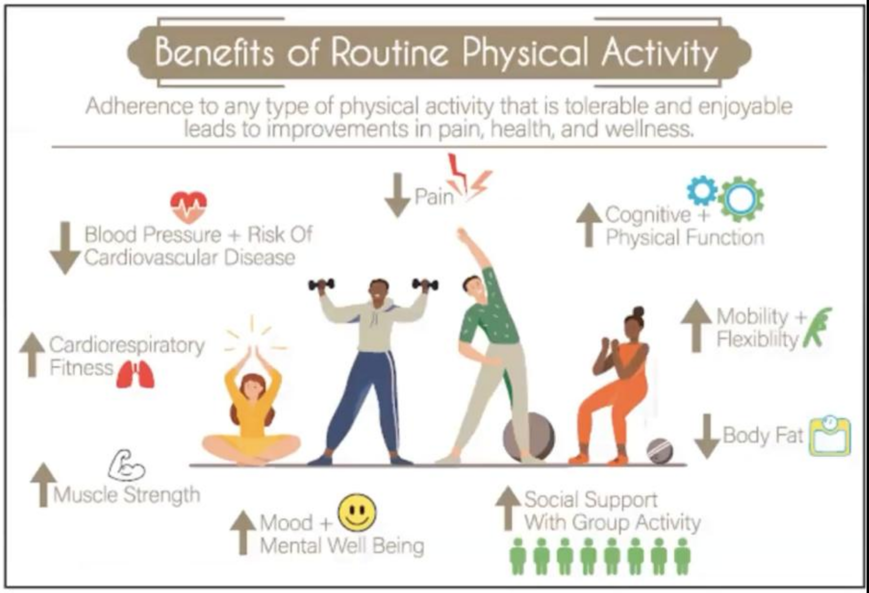
4 Health systems in the US

PRIMARY OUTCOME

Back pain-related disability measured by change in Roland Morris Disability Questionnaire (RMDQ) score at 6 mo; scores ranged from 0 to 24, with higher scores (≥18) indicating greater disability

DeBar LL, Wellman RD, Justice M, et al. Acupuncture for chronic low back pain in older adults: a randomized clinical trial. *JAMA Netw Open.* 2025;8(9):e2531348. doi:10.1001/jamanetworkopen.2025.31348

- Clinical practice guidelines recommend physical exercise as first line treatment
  - Knee OA
  - Hip OA
  - CLBP



Berardi G, Stone L, DeSantana J. IASP Fact Sheet. 2023

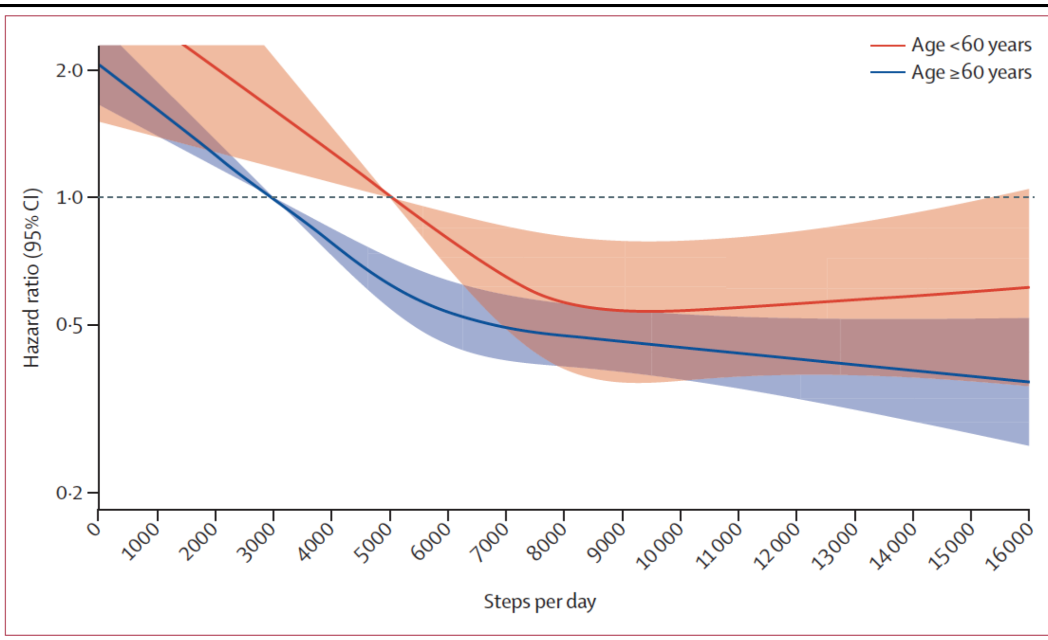


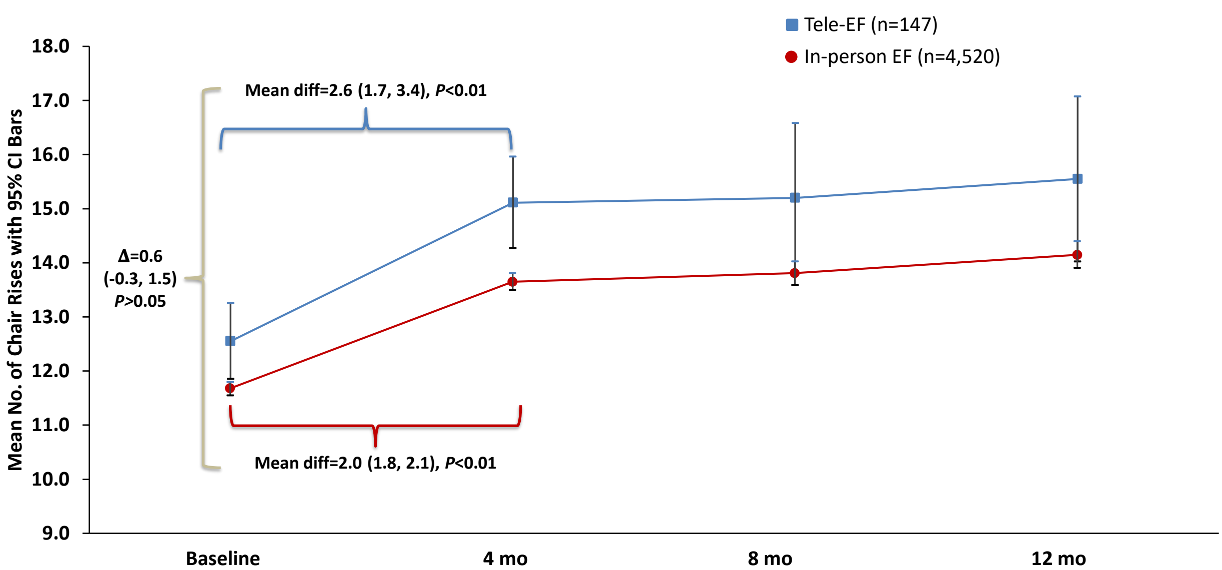
Figure 3: **Dose-response association between steps per day and all-cause mortality, by age group**

Lancet Public Health **2022; 7: e219–28**

Enhance Fitness (EF)

- A community-based and evidence-based exercise program
  - Group-based classes held for 1-hour, 3 times per week
  - Balance, strength, and endurance training
  - >800 sites nationally
  - CDC recommended
- Demonstrated to improve physical capacity and health-related quality of life
- UW Team adapted EF for remote delivery
- https://projectenhance.org/enhancefitness/

30-second Sit to Stand Test Performance over 12 months, by Enhance Fitness Delivery Mode



THANK YOU!

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