# Update in Internal Medicine 2026

**Saturday, May 2 • 8 a.m. – 4 p.m.**

UT Southwestern Medical Center, T. Boone Pickens Medical Education & Conference Center

## Holistic Care to Support Aging Well: A Multidisciplinary Perspective (Panel Presentation)

UT Southwestern Medical Center

# Update in Internal Medicine 2026

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## 5Ms: Managing Medical Complexity in Older Adults


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*Department of Internal Medicine*
*Division of Geriatric Medicine*

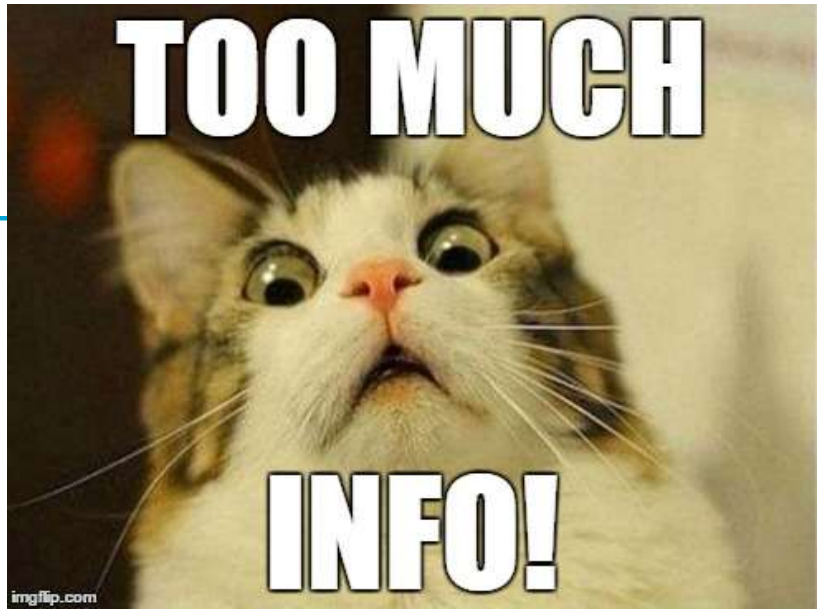
UT Southwestern Medical Center

# Outline

- Present a framework for how to assess and care for a geriatric patient
- Discuss the 5Ms of age-friendly care
- Understand how the 5Ms are interrelated and ultimately all come together to optimize what matters most to the patient
- Apply age-friendly care principles to cases

# A Typical Clinic Day

- he was just discharged from CUH with pneumonia.
  He is still coughing. Does he still have pneumonia??
- med questions (refills too!)
- does he still need his Seroquel? They started in the hospital
- falls
- harder to shower him
- confusion
- depression. He is angry and lashes out at times (uncharacteristic)
- home health PT and OT
- itchy scalp
- chest wall pain with all the coughing
- indigestion
- FMLA paperwork



# Problem Based A&P

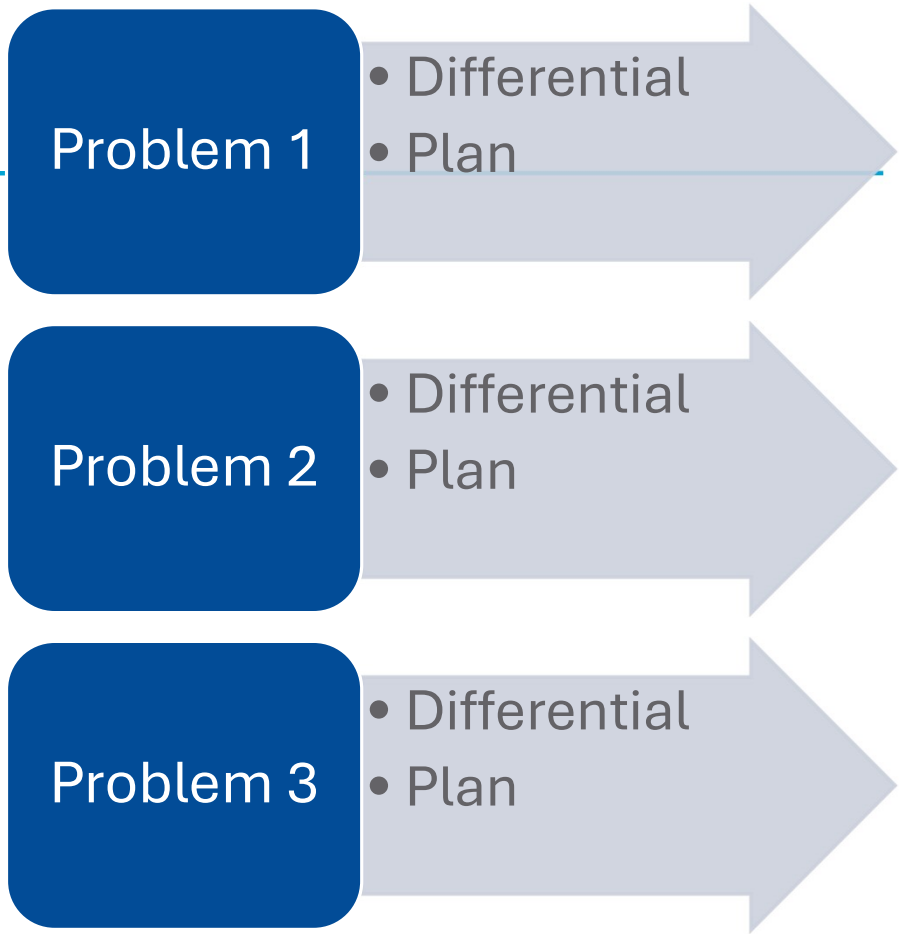
Medication reconciliation

Home safety

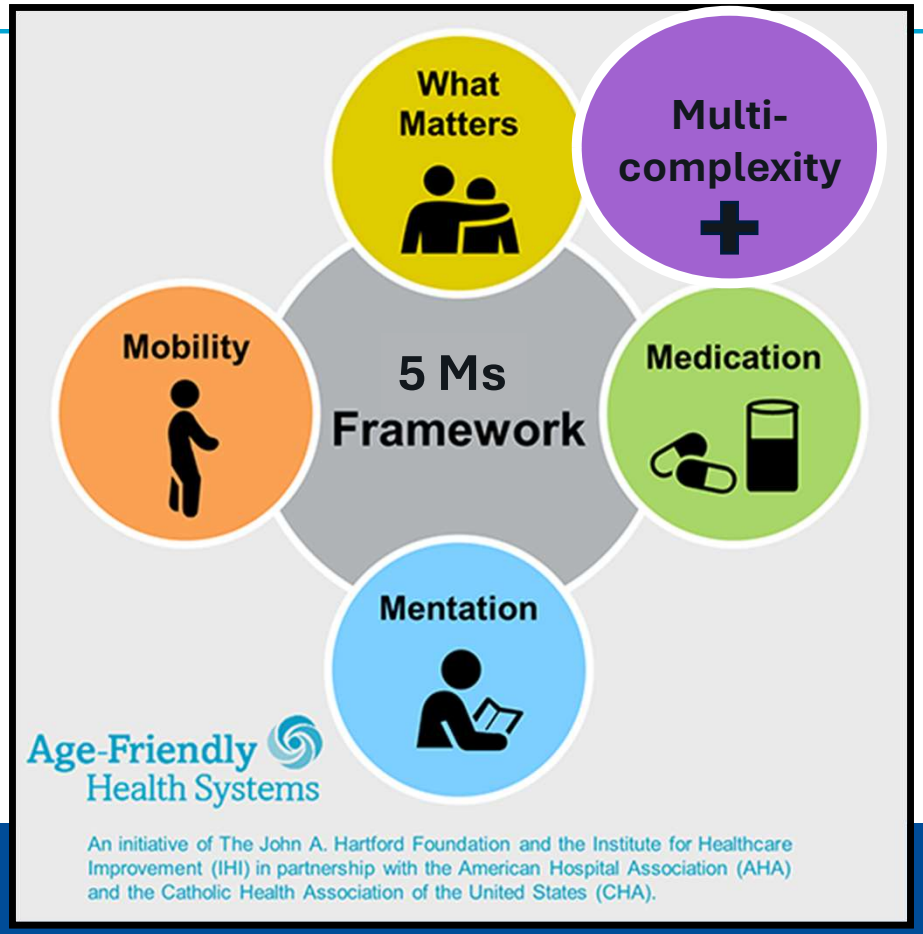
Caregiver burden

Advanced care planning

Patient priorities



# The 4 Ms / 5 Ms Framework



Clin Transl Gastroenterol. 2022 Jan 12;13(1):e00445. doi: 10.14309/ctg.0000000000000445.

## The 5Ms of Geriatrics in Gastroenterology: The Path to Creating Age-Friendly Care for Older Adults With Inflammatory Bowel Diseases and Cirrhosis

Bharati Kochar [1 2 3], Nneka N Ufere [1 2], Christine S Ritchie [2 3 4], Jennifer C Lai [5]

Clinical Interventions in Aging

Dovepress
Taylor & Francis Group

Open Access Full Text Article

REVIEW

## Using the 5Ms Framework to Advance Aging-Responsive Care for Heart Failure with Reduced Ejection Fraction

Review Lancet Rheumatol. 2024 Dec;6(12):e892-e902. doi: 10.1016/S2665-9913(24)00230-3. Epub 2024 Nov 11.

## Understanding the multiple dimensions of ageing: 5Ms for the rheumatologist

Bjoern Buehring [1], Marloes van Onna [2], Elena Myasoedova [3], Jiha Lee [4], Una E Makris [5]

Can J Anaesth. 2022 Sep;69(9):1080-1085. doi: 10.1007/s12630-022-02270-9. Epub 2022 Jun 10.

## Applying the geriatric 5Ms in critical care: the ICU-5Ms

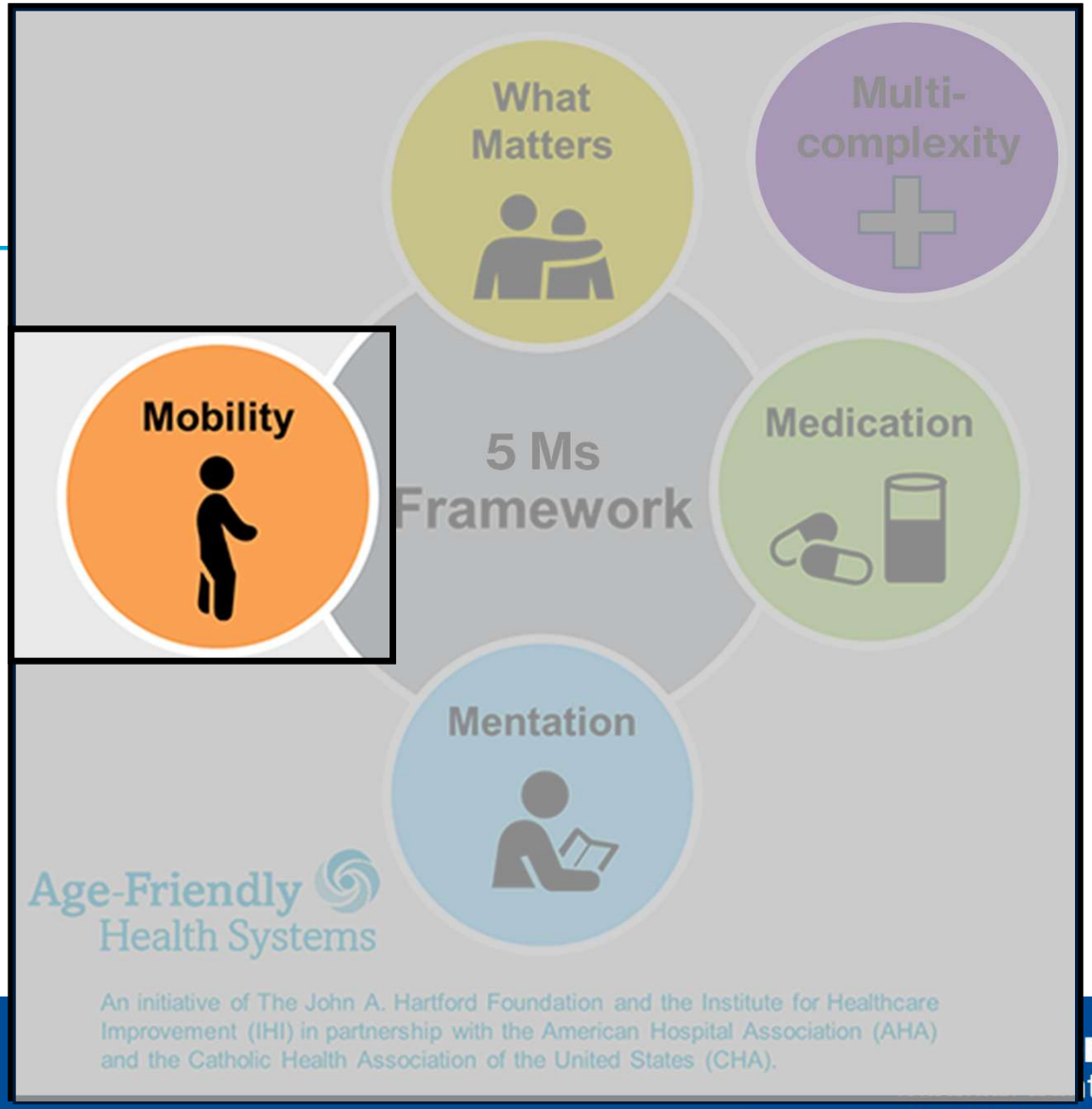
Olivia Geen [1], Andrew Perrella [2], Bram Rochwerg [3 4], Xuyi Mimi Wang [5]

Gerontol Geriatr Educ. 2026 Jan-Mar;47(1):90-94. doi: 10.1080/02701960.2024.2395258. Epub 2024 Aug 29.

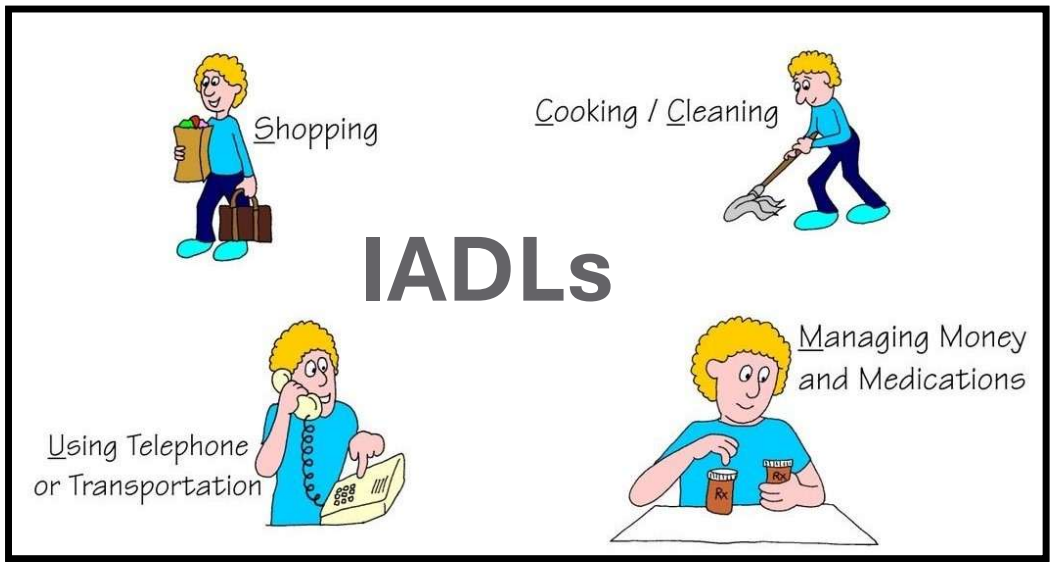
## An age-friendly opioid use disorder (OUD) care workshop: Applying the 5Ms framework

Kimberly J Beiting [1], A Justine Landi [2], Vassiliki Pravodelov [3], Mim Ari [4]

# Mobility


What Matters
Multi-complexity
Mobility
5 Ms Framework
Medication
Mentation
Age-Friendly Health Systems
An initiative of The John A. Hartford Foundation and the Institute for Healthcare Improvement (IHI) in partnership with the American Hospital Association (AHA) and the Catholic Health Association of the United States (CHA).

# Mobility: Understand Baseline Function




Covinsky KE, et al. J Am Geriatr Soc. 2003; 51(4)451-458.

# Frailty

- Chronological age vs. physical age
- Higher risk for complications
- Higher mortality rate

**FRAILTY SCORE: OPERATIONAL DEFINITION[89]**

| Criteria | Definition |
|---|---|
| Shrinkage | Unintentional weight loss ≥10 pounds in past year |
| Weakness | Decreased grip strength |
| Exhaustion | Self-reported poor energy and endurance |
| Low physical activity | Low weekly energy expenditure |
| Slowness | Slow walking |

**Interpretation of the Frailty Score**

The patient receives 1 point for each criterion met.

0–1 = Not Frail
2–3 = Intermediate Frail (Pre-frail)
4–5 = Frail

**Frail patients are at much higher risk of adverse health outcomes.**

**Intermediate frail patients are at elevated risk (less than frail ones) but are also at more than double the risk of becoming frail over three years.**



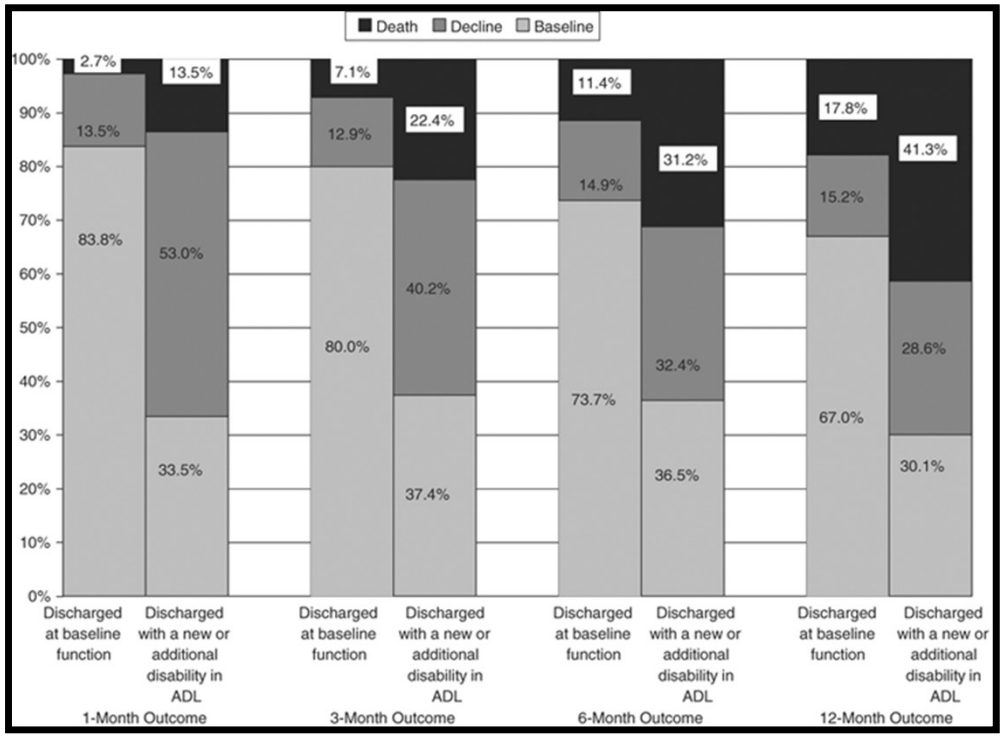
Panayi AC, Orkaby AR, Sakthivel D, Endo Y, Varon D, Roh D, Orgill DP, Neppl RL, Javedan H, Bhasin S, Sinha I. Impact of frailty on outcomes in surgical patients: A systematic review and meta-analysis. Am J Surg. 2019 Aug;218(2):393-400.

# Hospitalization is associated with increased risk of functional decline

- 70+ year-olds admitted to general medicine service
- Patients followed for a year after discharge
- Outcomes: 1/3 had functional decline between baseline and discharge
  - Functional decline often continued for a year
  - Of those discharged with new or additional ADL disability, the presence or absence of recovery by 1 month was associated with long-term outcomes


*J Am Geriatr Soc.* 2008; **56**: 2171-2179

# Recovery of Activities of Daily Living in Older Adults After Hospitalization for Acute Medical Illness






*J Am Geriatr Soc.* 2008; **56**: 2171-2179

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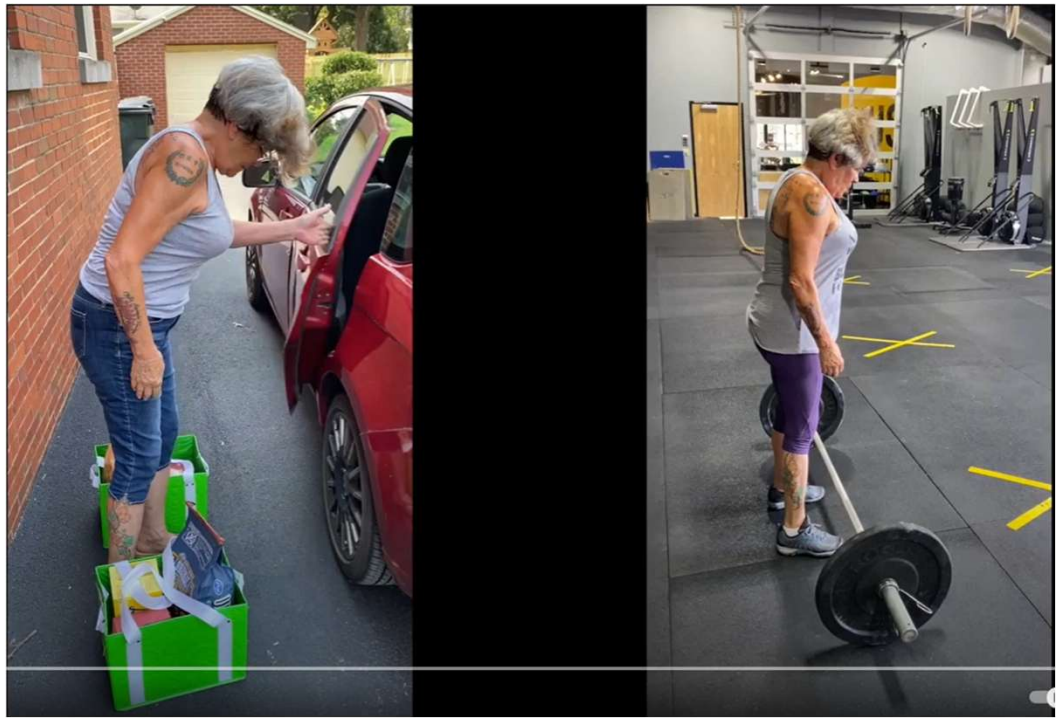
# Physical Therapy – Make it Meaningful





Dustin Jones: Make It Meaningful from the MMOA Division of the Institute of Clinical Excellence

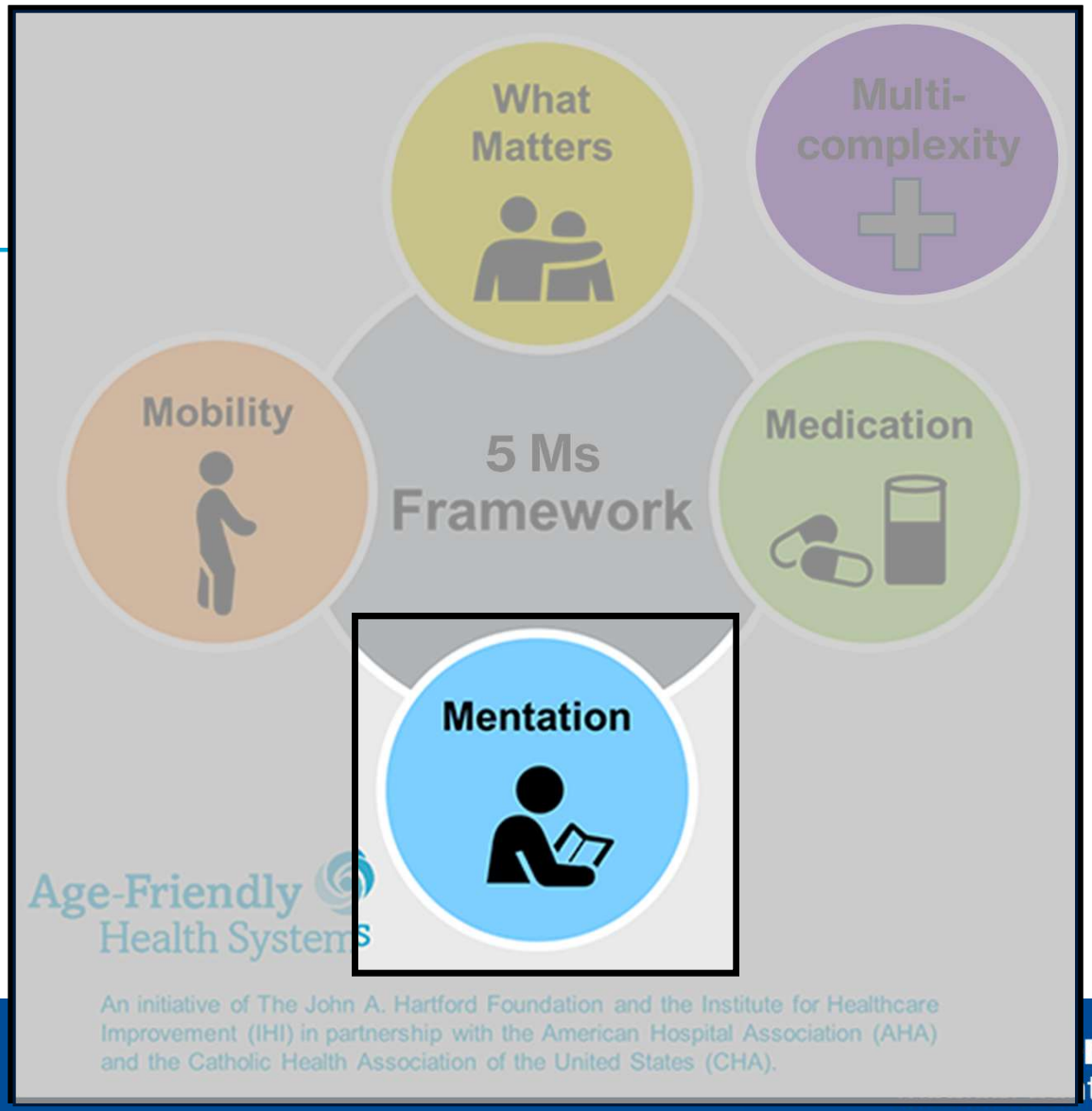
# Mobility - Assessment

- he was just discharged from CUH with pneumonia.
  He is still coughing. Does he still have pneumonia??
- med questions (refills too!)
- does he still need his Seroquel? They started in the hospital
- falls
- harder to shower him
- confusion
- depression. He is angry and lashes out at times (uncharacteristic)
- home health PT and OT
- itchy scalp
- chest wall pain with all the coughing
- indigestion
- FMLA paperwork

# Mobility - Assessment

- Falls
  - Gait assessment
  - Need for DME (walker?)
  - Fall mitigation
- Harder to shower
  - Need an aide at home?
  - Home Health
- Confusion
  - Impact on ADLs/iADLs
  - Additional help at home
  - Impact on safety
- Need for Home Health
  - Place orders!
- Pain
  - Is it limiting function?
  - Concern for fractures

# Mentation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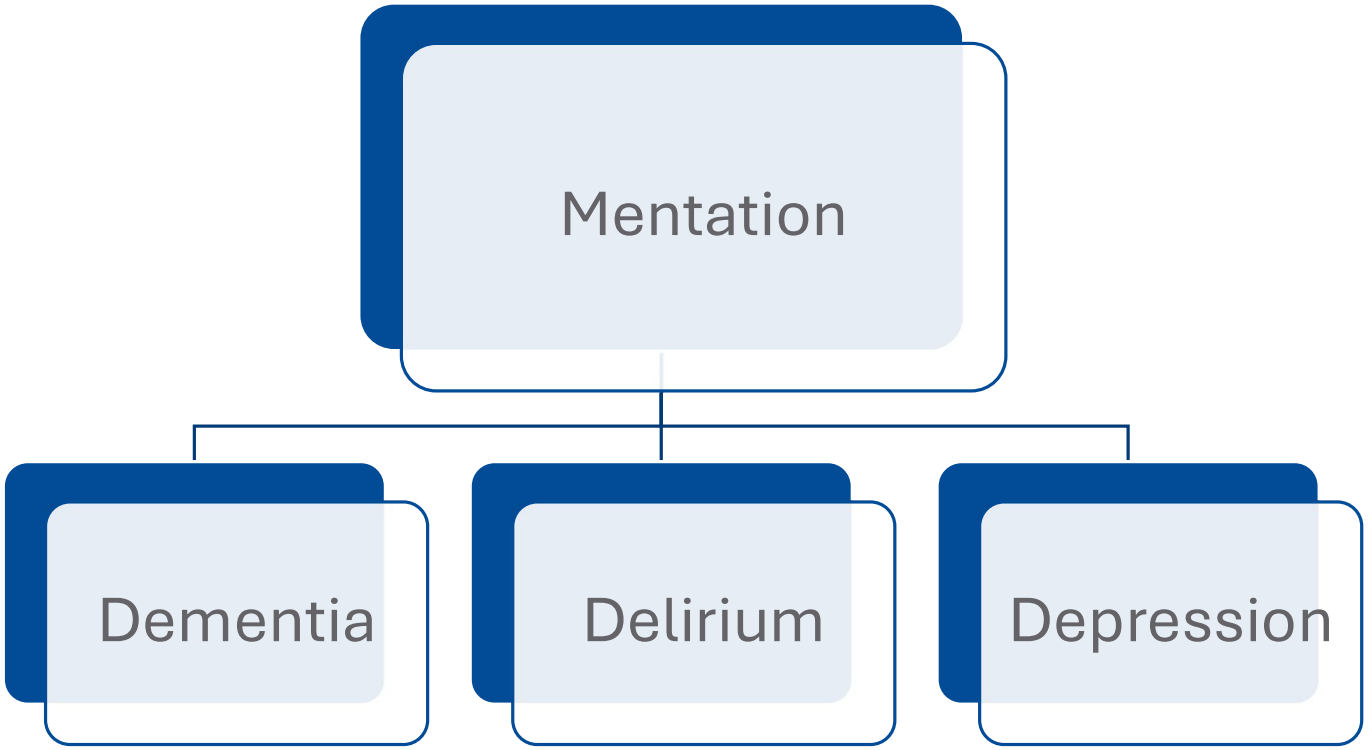
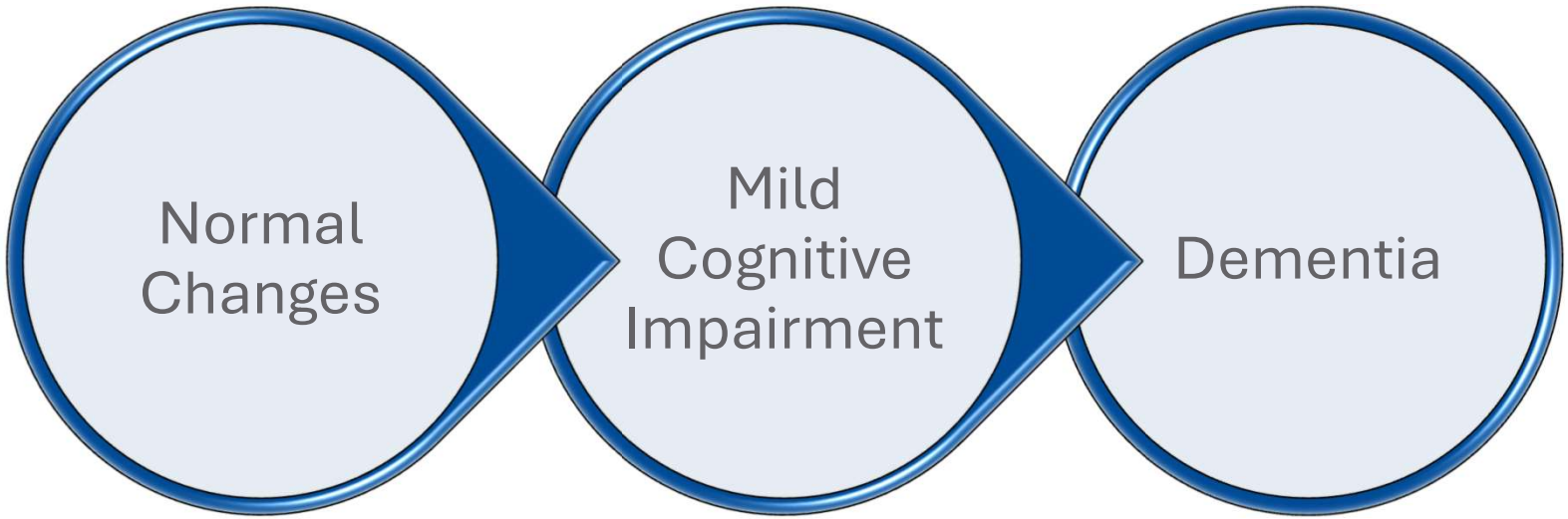
# Mentation

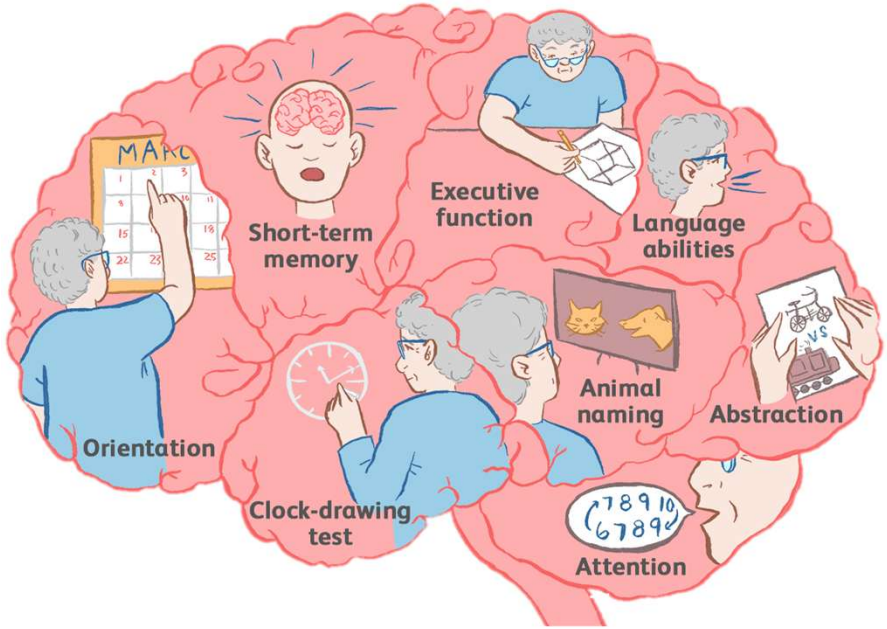


# Cognitive Impairment

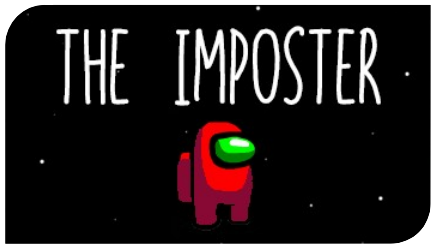


# Assessing Cognitive Impairment

- Mini-Cog
- MoCA
- SLUMS
- MMSE
- Formal Neuropsych Testing



# Delirium

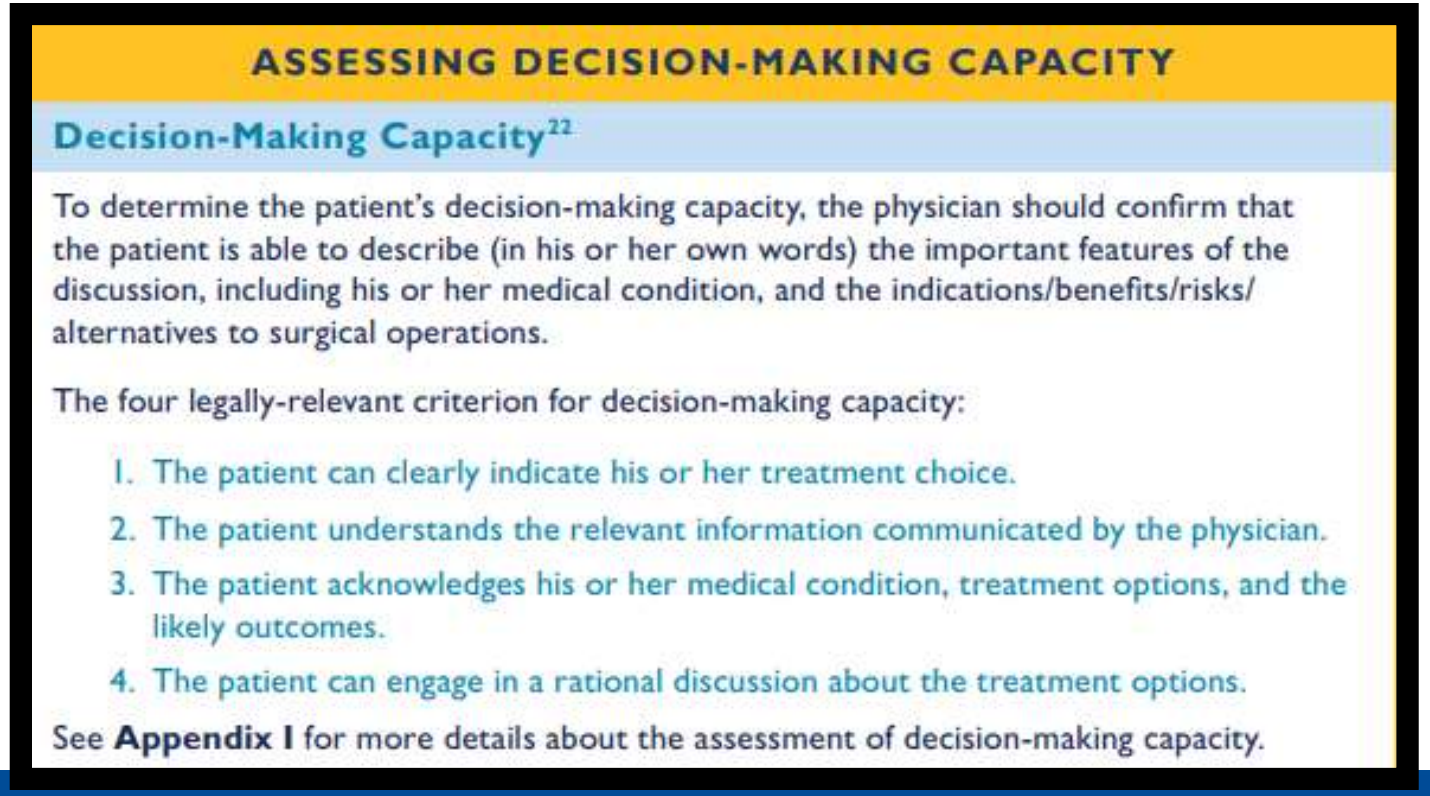



**BEST PRACTICES IN NEUROLOGY**

**Recommendations from the Choosing Wisely Campaign**

| *RECOMMENDATION* |
| --- |
| Do not presume a diagnosis of dementia in an older adult who presents with an altered mental status and/or symptoms of confusion without assessing for delirium or delirium superimposed on dementia using a brief, sensitive, validated assessment tool. |

# Decision-Making Capacity



**ASSESSING DECISION-MAKING CAPACITY**

**Decision-Making Capacity[22]**

To determine the patient's decision-making capacity, the physician should confirm that the patient is able to describe (in his or her own words) the important features of the discussion, including his or her medical condition, and the indications/benefits/risks/alternatives to surgical operations.

The four legally-relevant criterion for decision-making capacity:

1. The patient can clearly indicate his or her treatment choice.
2. The patient understands the relevant information communicated by the physician.
3. The patient acknowledges his or her medical condition, treatment options, and the likely outcomes.
4. The patient can engage in a rational discussion about the treatment options.

See **Appendix I** for more details about the assessment of decision-making capacity.



Chow WB, Rosenthal RA, Merkow RP, Ko CY, Esnaola NF; American College of Surgeons National Surgical Quality Improvement Program; American Geriatrics Society. Optimal preoperative assessment of the geriatric surgical patient: a best practices guideline from the American College of Surgeons National Surgical Quality Improvement Program and the American Geriatrics Society. J Am Coll Surg. 2012 Oct;215(4):453-66.

# Depression

- Screen for depression and anxiety
  - May present differently in older adults (apathy, weight loss)
  - Can use Geriatric Depression Scale (GDS)

- Think about caregiver burden

# Mentation - Assessment

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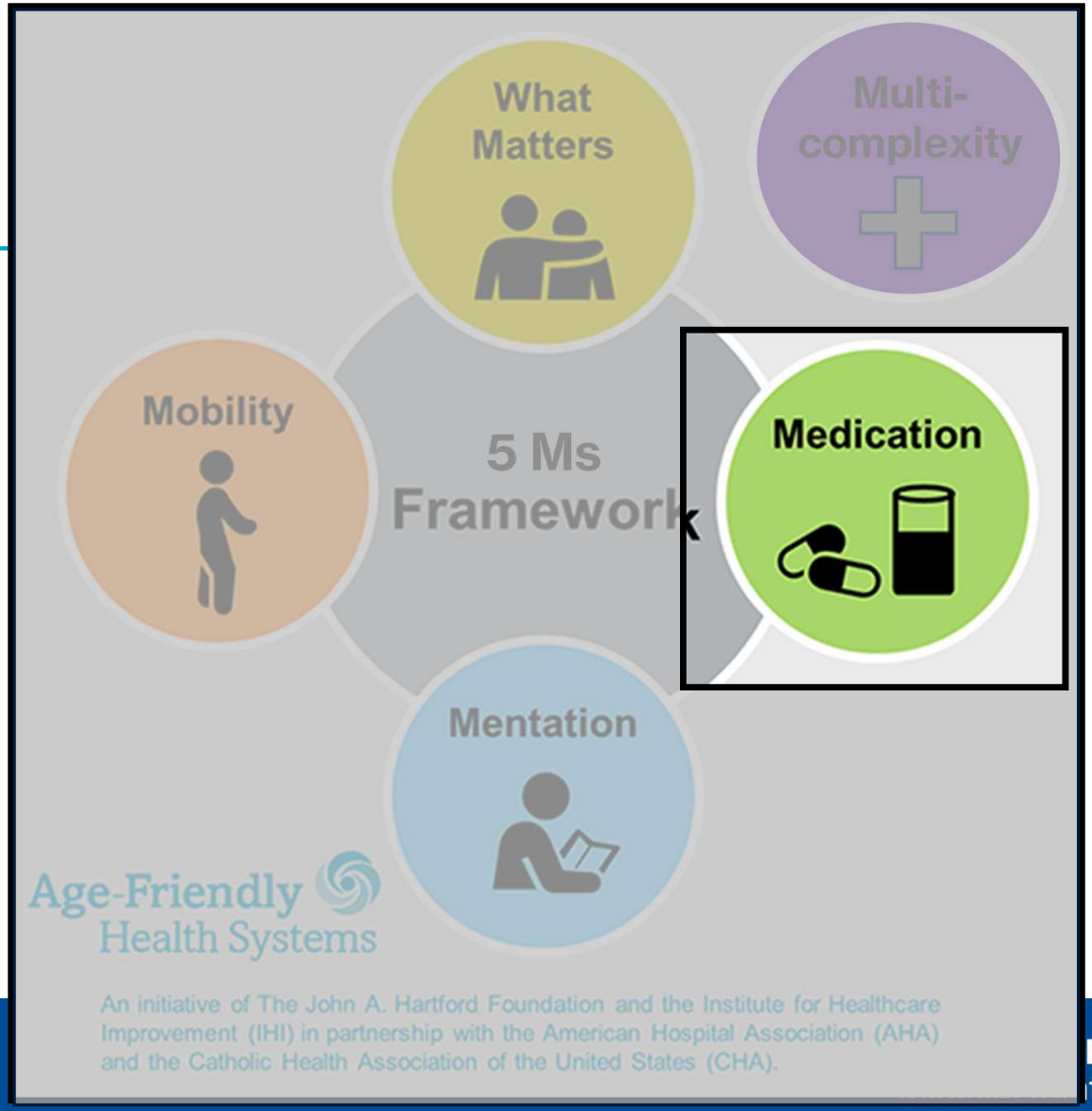
- Delirium
- Is there baseline dementia?
- Does he have capacity?
- Is he safe at home?
  - Caregiver burden
  - Do they need more help?
- Is this depression or delirium?

# Medications

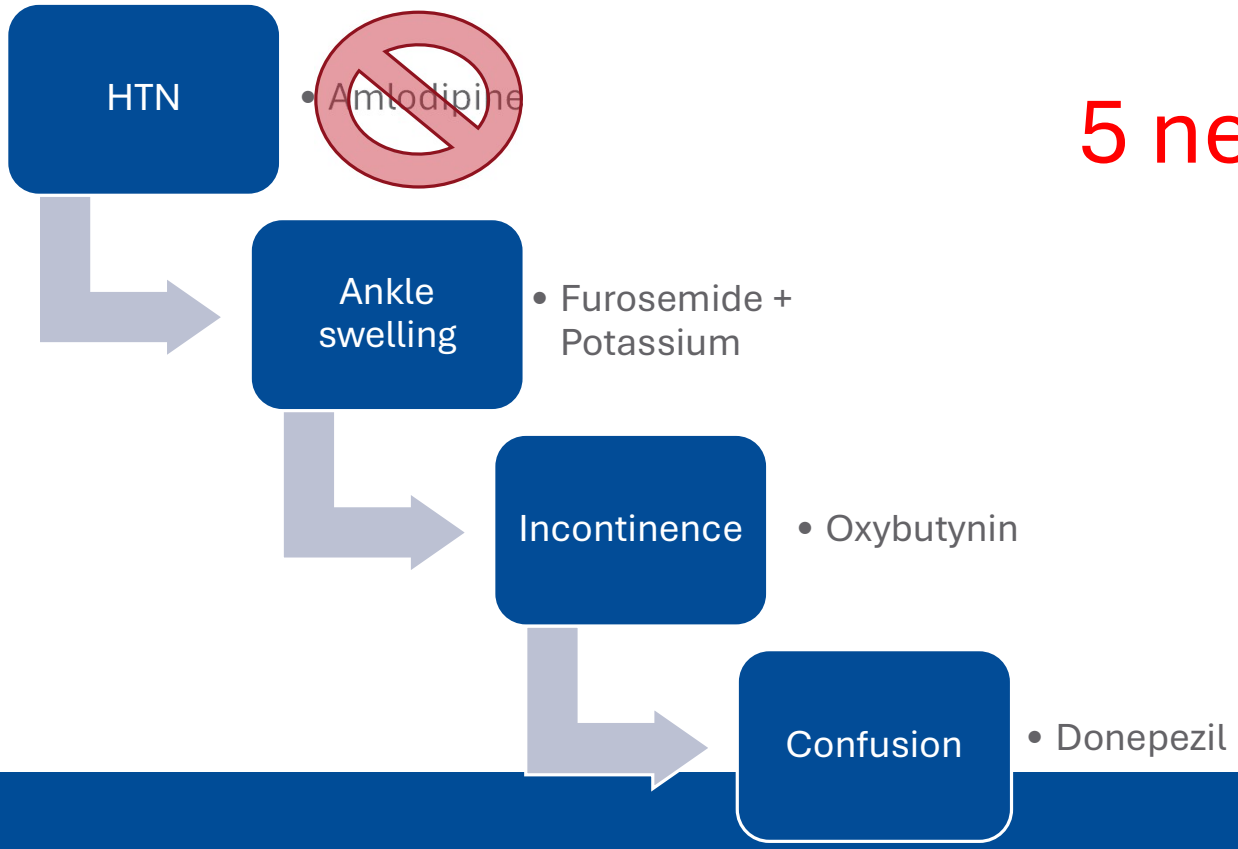


# Polypharmacy

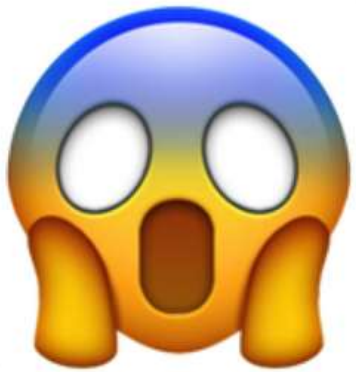
- Old definition:
  - “If a patient is taking 5 or more medications”

- New definition:
  - Focus on inappropriateness:
    - Use of one medication to treat side effects of another
    - On medications that are not clinically indicated
    - Unnecessary pill burden
      - Three times a day versus daily
    - Beers Criteria

# Polypharmacy Cascade




5 new pills!



# Medications - Questions

- Who manages the medication?
- Is the frequency feasible?
- Are the medications affordable?
- Are the instructions clear and written down?
- Does the patient understand why?
- Can the patient physically administer the meds?
  - *Inhalers in the setting of RA or dementia*

# Medications - Assessment

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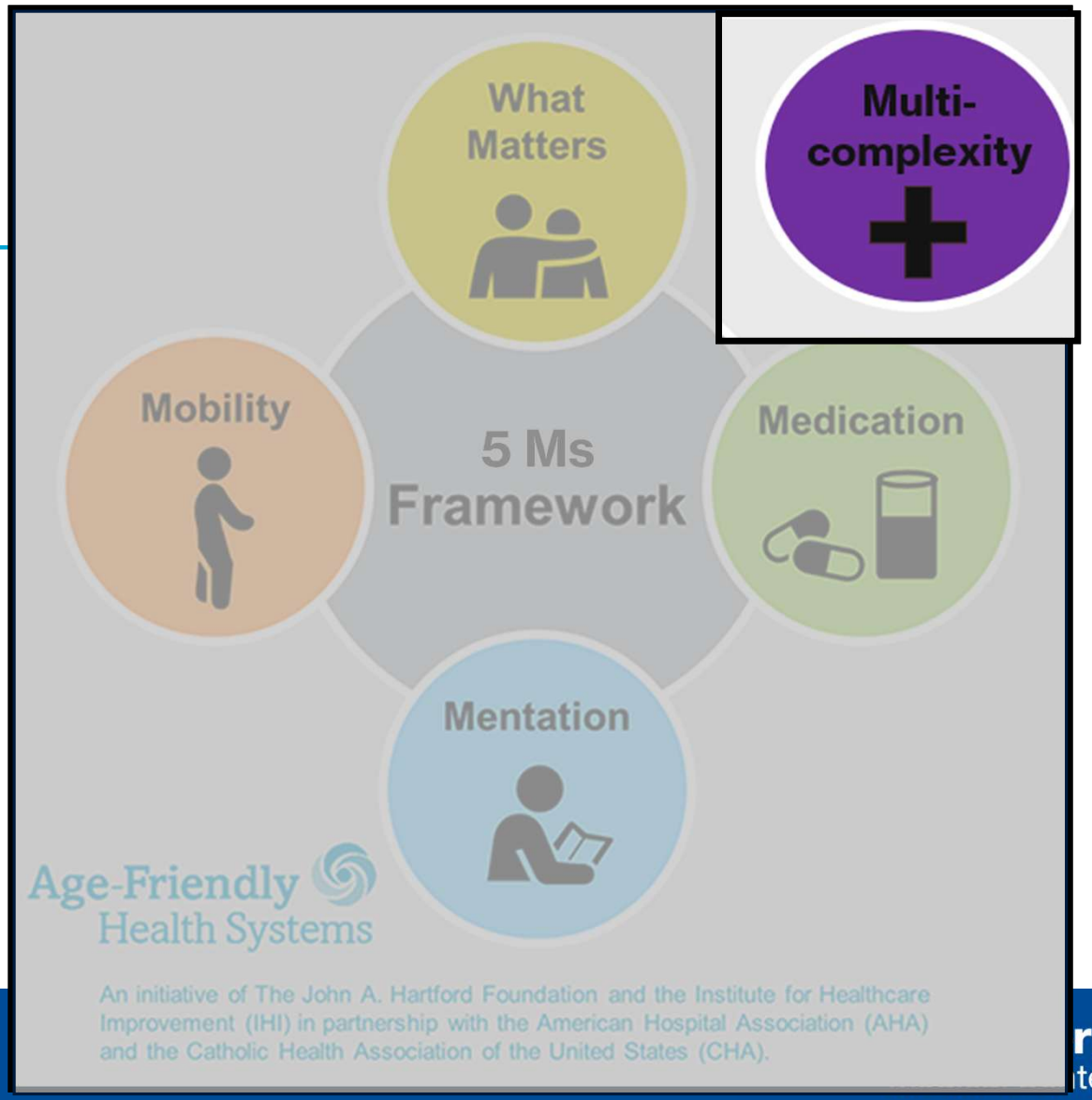
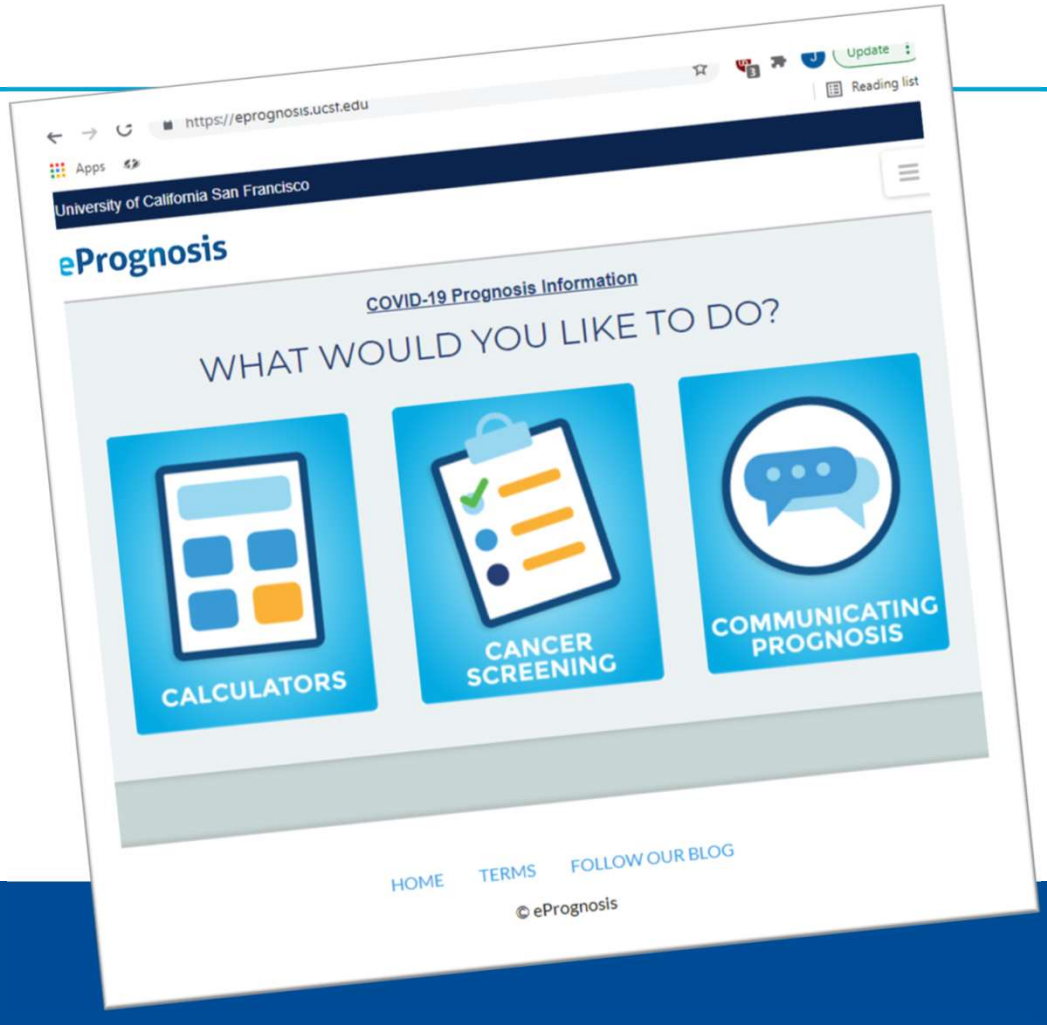
- Medication Reconciliation
  - Any inappropriate medications?
  - Why was Quetiapine started?
- Deprescribe
- Ensure no deliriogenic meds

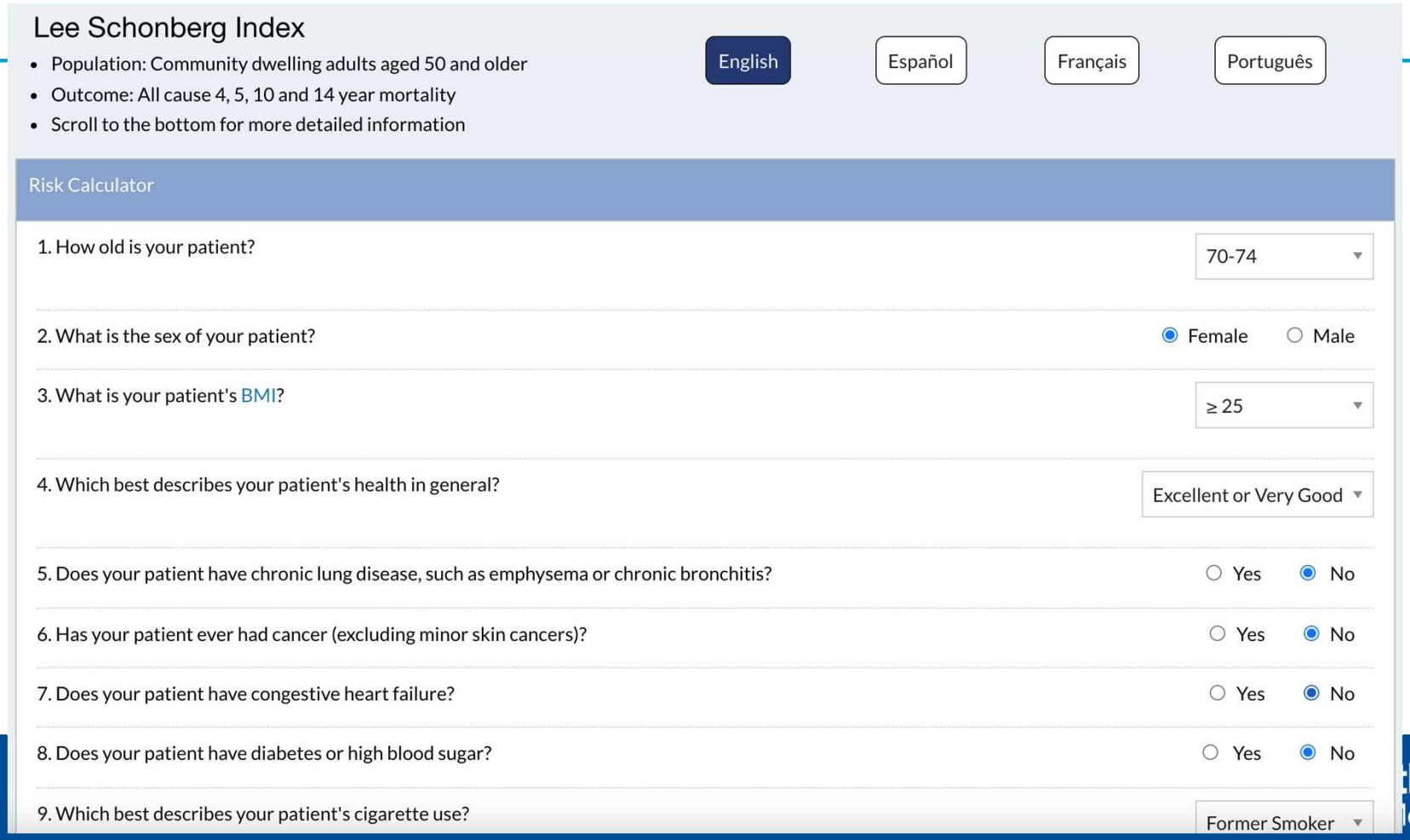
# Multicomplexity



# Multicomplexity: Assessing Prognosis



# Multicomplexity: Assessing Prognosis



# Multicomplexity: Assessing Prognosis

Mortality Risk for Lee Index

| Points | Risk of FIVE YEAR mortality | Risk of TEN YEAR mortality | Life Expectancy (years) |
|---|---|---|---|
| 0 - 1 | 1% - 2% | 2% - 5% | 33.1 - 35.4 |
| 2 - 3 | 2% - 4% | 7% - 10% | 23.7 - 30.1 |
| 4 - 5 | 6% - 8% | 15% - 23% | 17.7 - 21.1 |
| 6 - 7 | 9% - 15% | 34% - 43% | 12.6 - 14.3 |
| 8 - 9 | 20% | 52% - 58% | 8.9 - 10 |
| 10 - 11 | 28 - 45% | 52 - 82% | 5.0 - 7.2 |
| 12 - 13 | 44% - 59% | 83% - 91% | 3.8 - 5.1 |
| ≥14 | 63% | 93% | 2.9 |

Patients that have >50% chance of death in a specific time interval have an estimated life expectancy less than that time interval. For example, a patient with a 60% mortality risk at 5 years has a life expectancy <5 years.

# Multicomplexity - Assessment

- he was just discharged from CUH with pneumonia.
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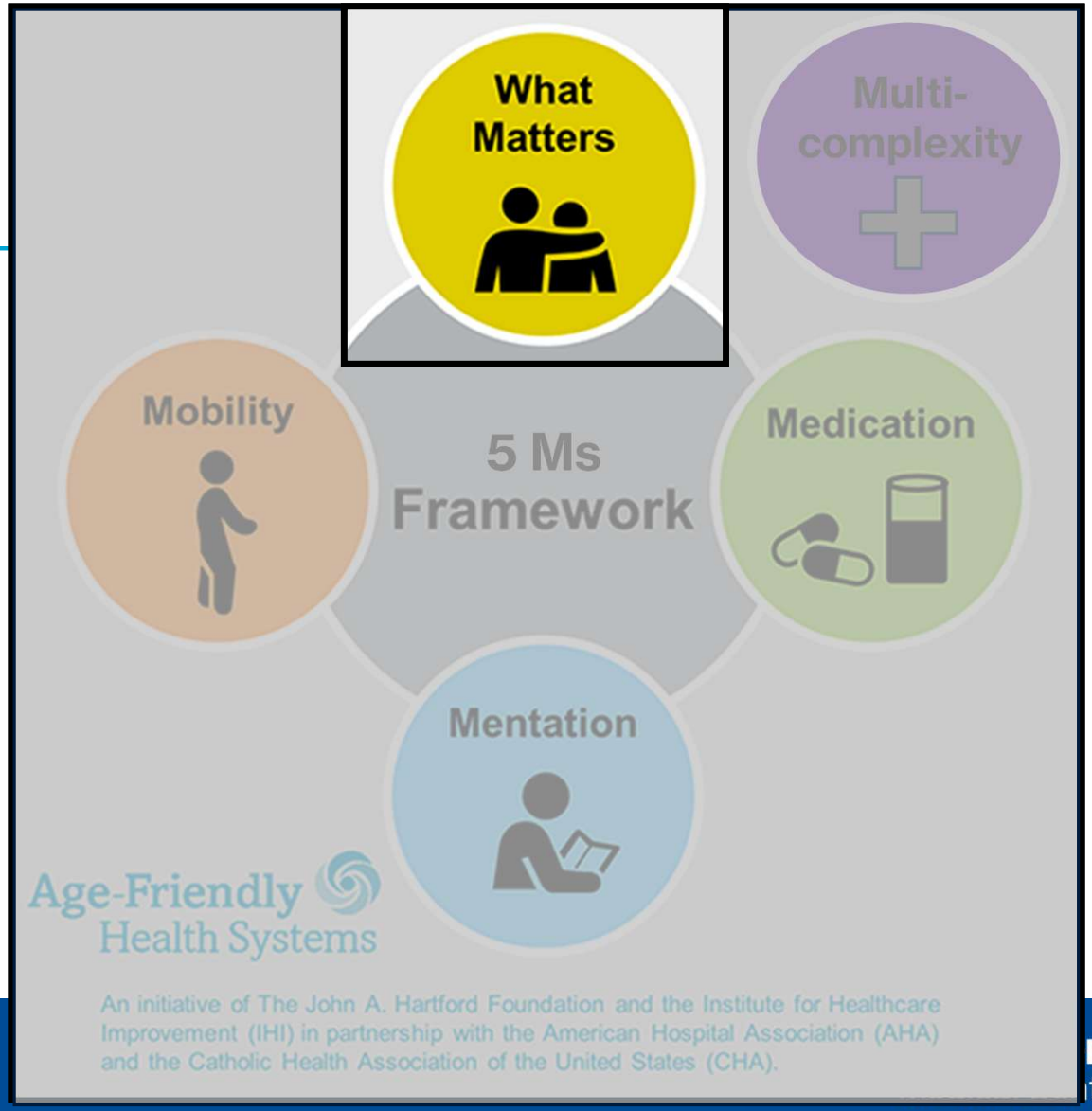
- Active Medical Problems
- Think about the big picture
  - Overall prognosis

# What Matters Most



# What Matters Most: Goals of Care

- Assessing Priorities
  - Tell me about yourself and your family.
  - What is most important to you?
  - If time was limited, how would you want to spend it?

- Assessing Expectations
  - Does the evaluation/treatment align with goals?
  - Is surgery/treatment what the patient is wanting or expecting?
  - Is the patient prepared for expected recovery?

# What Matters Most: Advance Directives

- Medical Power of Attorney
- Code status
- Advanced Directives

# Putting it all together…
## from the note of an age-friendly cardiologist

Mobility Matters Most Medications

He states the way his angina is now, he can live with this burden long term. His goal is to just keep his quality of life. We can try an increased his anti-anginal dose. We had stopped imdur due to side effects.

He doesn't fear death. He is more concerned about how he is going to die. He does not want to take any risks that could lead to debility, including procedures. He does not plan to live to 95. He wants to be OOH-DNR, he will bring the paper work in.

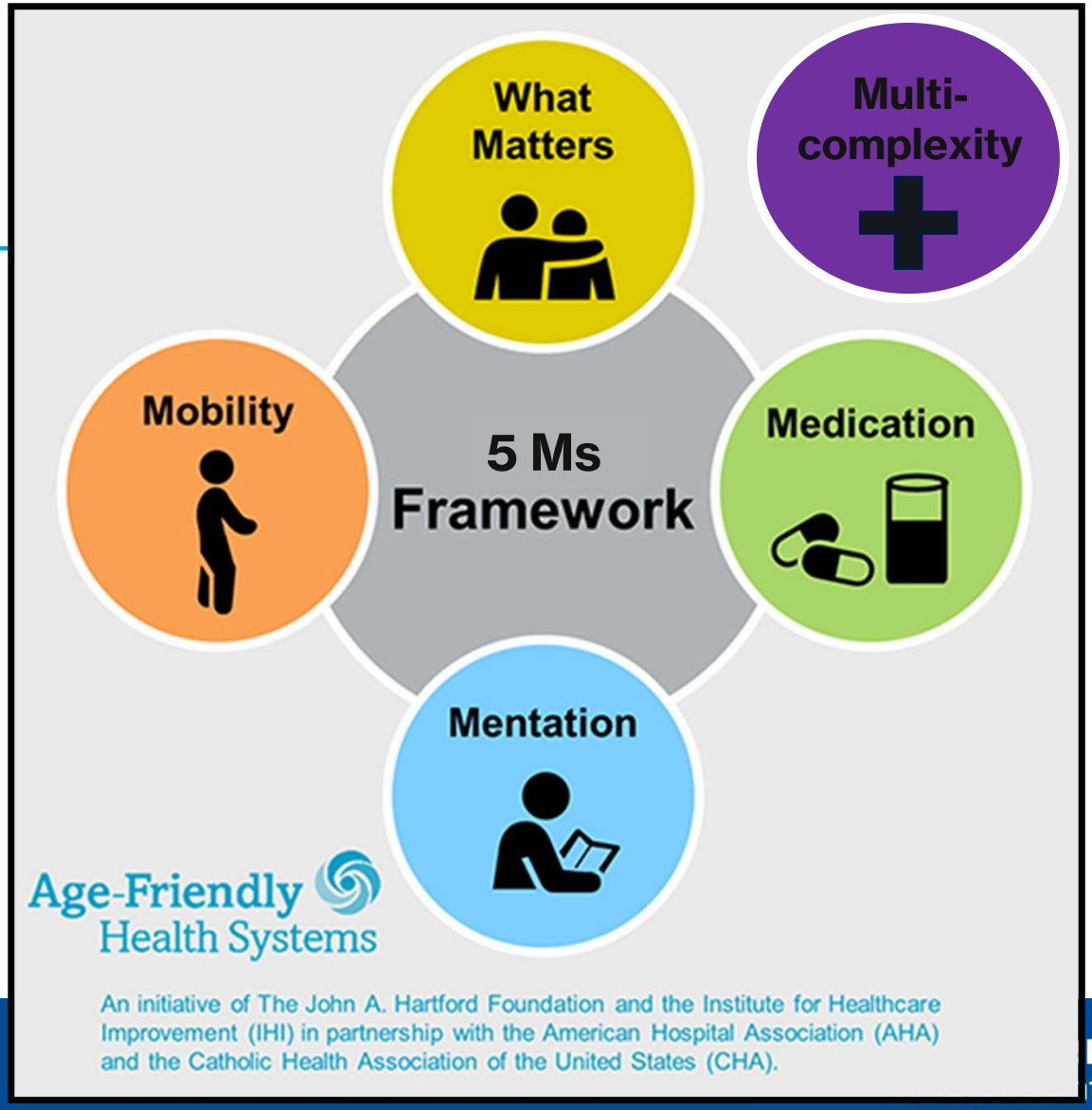
Matters Most Multicomplexity Matters Most

**PLAN:**
1. Continue aspirin
2. Amlodipine increase 10mg once daily, Metoprolol 25mg once daily
3. Continue ranexa to 500mg once daily
4. OOH-DNR placed today, after long discussion and per his request

# 5 Ms Framework

- Cognitive changes, frailty, polypharmacy and multicomplexity can make care of older adults challenging

- Think about the 5Ms when organizing care of an older patient



# Update in Internal Medicine 2026

**Saturday, May 2 • 8 a.m. – 4 p.m.**

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# Cardiovascular Care of the Older Adult


Amil M. Shah, MD MPH

Professor of Medicine and Epidemiology
Dallas Heart Ball Chair in Cardiac Research
Director of Population Sciences, Department of Medicine
Director, Translational Cardiovascular Epidemiology Research (TRACER) Unit
Principal Investigator, Dallas Heart Study


UT Southwestern Medical Center

# Learning Objectives

By the end of this session, participants will be able to:

1. Describe the changes in cardiac structure and function that accompany aging
2. Recognize the essential role of risk factor and behavior modification to optimize cardiovascular aging
3. Understand the application of a domain-based management approach to cardiovascular patients

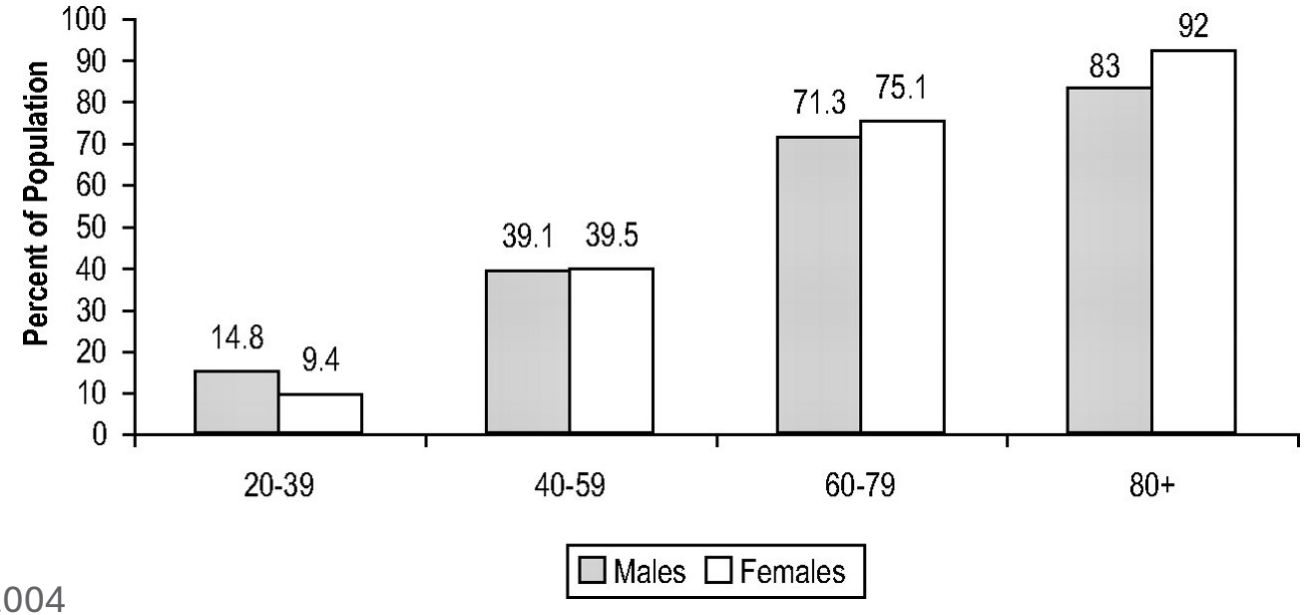
# Case Presentation

- 82-year-old woman history of CAD with remote MI, diabetes, hypertension, CKD3 who is following up from first hospitalization with ADHF 2 months ago, diagnosed with HFrEF (LVEF 30%, ischemic). Feels well overall, mild fatigue and dyspnea with climbing a flight of stairs.
- Medications: Metoprolol XL 100 mg, valsartan 40 mg, HCTZ 25 mg, spironolactone 25 mg, furosemide 20 mg, atorvastatin 40 mg, ASA 81 mg, metformin 500 mg
- Exam: BMI 26 kg/m$^2$, BP 120/70 mmHg, HR 60 bpm, appears euvolemic

# What would you prioritize for next steps?

1. Order TTE to reassess LV function – if LVEF not improved, refer to ICD
2. Optimize GDMT: transition valsartan to sacubitril/valsartan, stop HCTZ, and transition metformin to empagliflozin
3. Transition metformin to empagliflozin but avoid transitioning valsartan to sacubitril/valsartan to minimize risk of orthostatic hypotension
4. Refer to cardiac rehabilitation

# Age and CVD Prevalence




NHANES 1999-2004

Rosamond et al. *Circulation* 2008;117:e25-e146

# Changes in Cardiovascular Physiology in Older Adults

| Key Characteristics | Physiologic changes | Implications |
|---|---|---|
| ↑arterial stiffness | ↓distensibility of large central arteries,<br>↓compliance and recoil,<br>↑LV afterload | ↑SBP, ↓DBP, ↑PP<br>↑BP-sensitivity to small shifts in intravascular volume |
| ↓LV compliance and cardiac reserve | ↑ wall thickness,<br>↓chamber size,<br>↑late diastolic LV filling, ↑LAV | ↑filling pressure -> HFpEF<br>↑dependence on atrial contractility for filling -> AF, tachycardia poorly tolerated |
| ↓beta-adrenergic and parasympathetic function | ↓chronotropic, inotropic, lusitropic response to beta-adrenergic agonist<br>↑parasympathetic vagal tone | ↓HR, vasoconstrictor, and venous return responses baroreceptor & autonomic reflexes -> orthostatic hypotension<br>↓cardiac reserve -> ↓HR and CO augmentation and ↑LAP with stress |
| Degenerative changes of conduction system | | |

Dai et al. *J Geriatr Cardiol* 2015;12:196-201

# Mitigating Cardiovascular Aging


Four health *behaviors*
- Stay active*
- Eat healthy
- Get enough sleep
- Don't smoke


Four health *factors*
- Maintain healthy weight*
- Keep blood pressure in healthy range*
- Control cholesterol
- Manage blood sugar*

*Strongest data for beneficial effects on cardiac structure and function

Lloyd-Jones et al. *Circulation* 2022;146:e18-e43
Sterling et al. *Circ Cardiovasc Qual Outcomes* 2024;17:e000134

# GDMT in Heart Failure with Reduced LVEF

| | Trial | Treatment arms | Age (yrs) | Primary outcome | Absolute risk reduction |
|---|---|---|---|---|---|
| *RASi* – *ACEi* | SOLVD Treatment (1991) | Enalapril vs placebo | 61 | **All-cause mortality** | **5%** |
| *RASi* – *ARB* | ELITE II (2000) | Losartan vs captopril | 71±7 | **All-cause mortality** | **Noninferior** |
| *RASi* – *ARNI* | PARADIGM-HF (2014) | Sacubitril/val vs enalapril | 64±11 | CV death or HF hosp | **5%** |
| *β-Bl* | CIBIS-II (1999) | Bisoprolol vs placebo | 61 | **All-cause mortality** | **5%** |
| *β-Bl* | MERIT-HF (1999) | Metoprolol CR XL vs placebo | 64±10 | **All-cause mortality** | **4%** |
| *β-Bl* | COPERNICUS (2001) | Carvedilol vs placebo | 63±11 | **All-cause mortality** | **6%** |
| *MRA* | RALES (1999) | Spironolactone vs placebo | 65±12 | **All-cause mortality** | **11%** |
| *MRA* | EMPHASIS-HF (2011) | Eplerenone vs placebo | 69±8 | CV death or HF hosp | **8%** |
| *SGLT2i* | DAPA-HF (2019) | Dapagliflozin vs placebo | 66±11 | CV death or worsening HF | **5%** |
| *SGLT2i* | EMPEROR-Reduced (2020) | Empagliflozin vs placebo | 67±11 | CV death or HF hosp | **6%** |

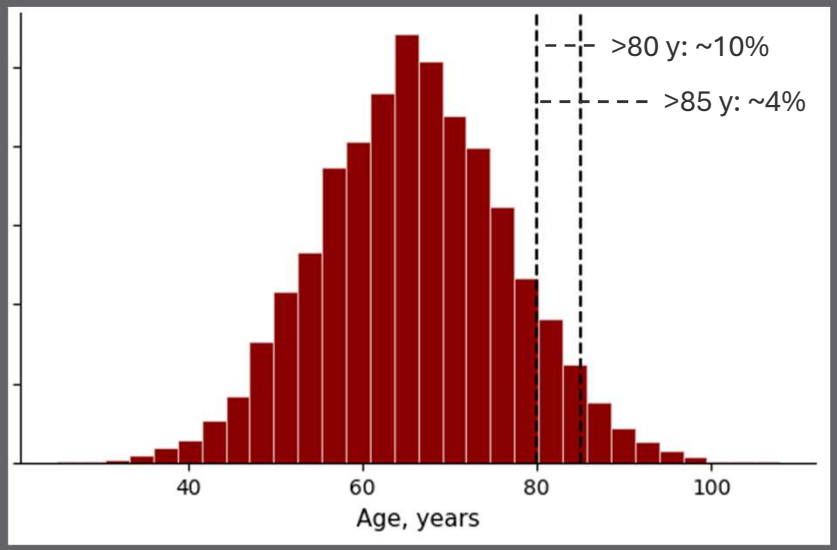
# GDMT in Heart Failure with Reduced LVEF

| | Trial | Treatment arms | Age (yrs) | Primary outcome | Absolute risk reduction |
|---|---|---|---|---|---|
| RASi – ACEi | SOLVD Treat | | | | 5% |
| RASi – ARB | ELITE II (200 | | | | oninferior |
| RASi – ARNI | PARADIGM- | | | | 5% |
| β-Bl | CIBIS-II (199 | | | | 5% |
| β-Bl | MERIT-HF (1 | | | | 4% |
| β-Bl | COPERNICU | | | | 6% |
| MRA | RALES (1999 | | | | 11% |
| MRA | EMPHASIS-H | | | | 8% |
| SGLT2i | DAPA-HF (2( | | | | 5% |
| SGLT2i | EMPEROR-R | | | | 6% |

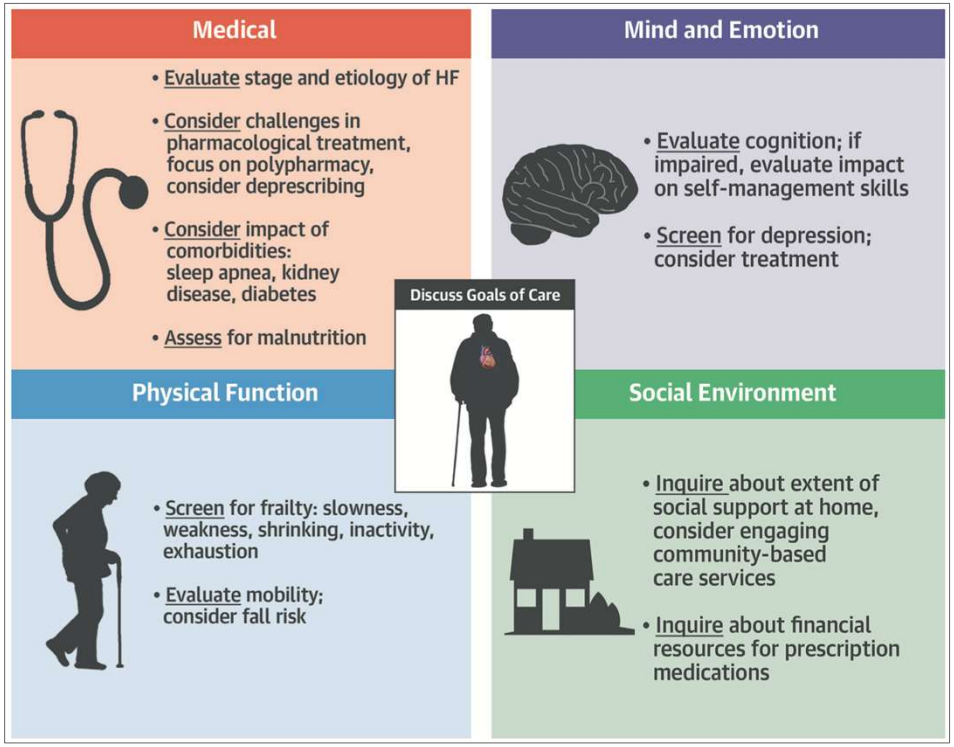
With a mean age of 66±11 years:
Only ~10% >80 y.o.
Only ~4% >85 y.o.

Enrollment limitations based on impaired renal function, anemia, lung and liver disease, hyperkalemia

Limited capture of non-CV comorbidities

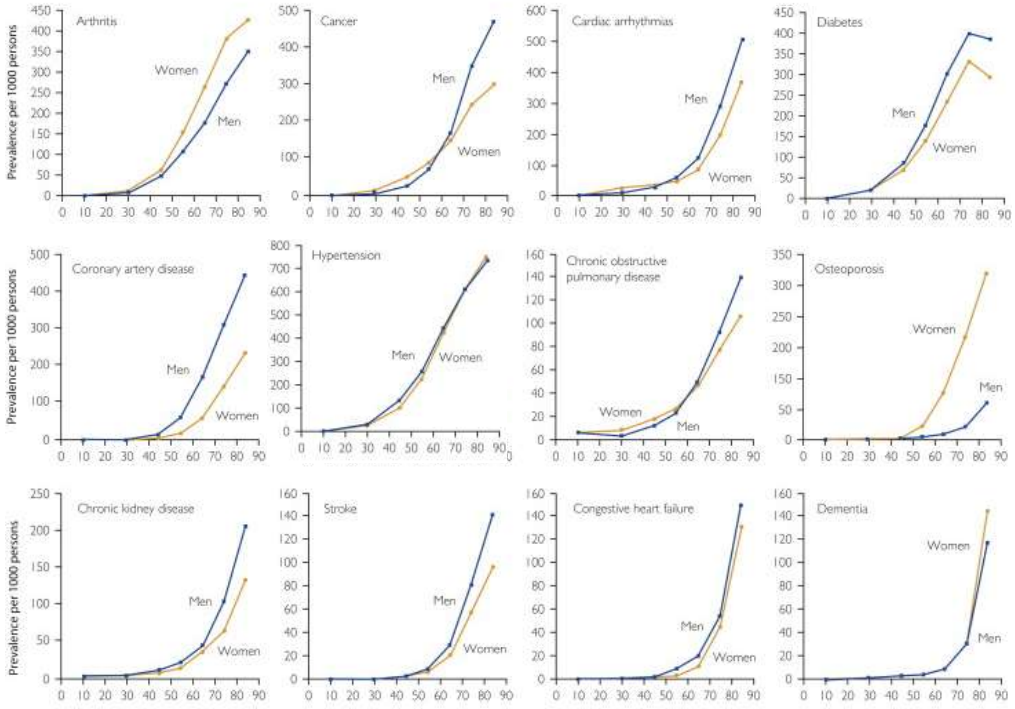


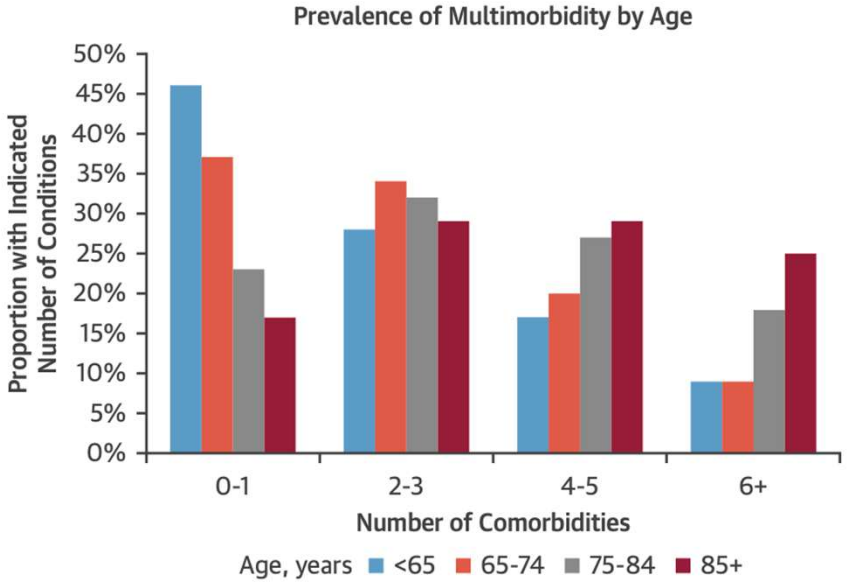
# Domain-Based Management Approach to Heart Failure in Geriatric Patients




Gorodeski et al. *J Am Coll Cardiol* 2018;71:1921-36

# Multimorbidity in Geriatric Patients

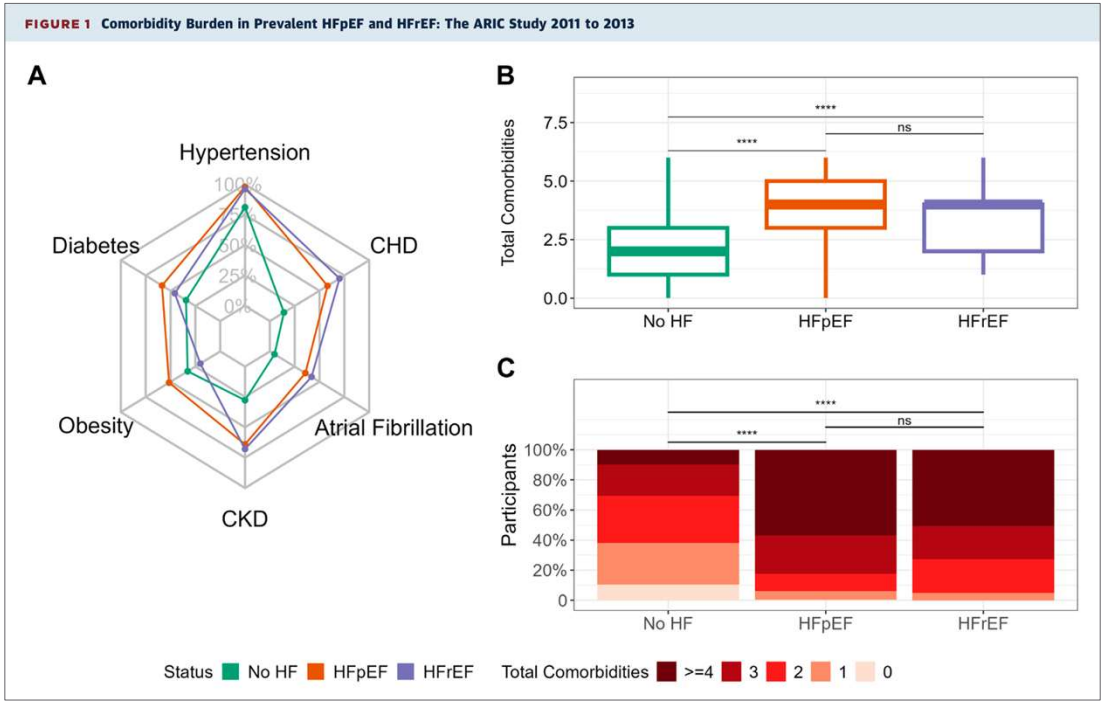



Rocca et al. *Mayo Clin Proc* 2014;89:1336-49
Forman et al. *J Am Coll Cardiol* 2018;71:2149-61

# Multimorbidity in Geriatric Patients with Heart Failure

Mean age 76±5 yrs




Guigni et al. *JACC HF* 2025;13:102483

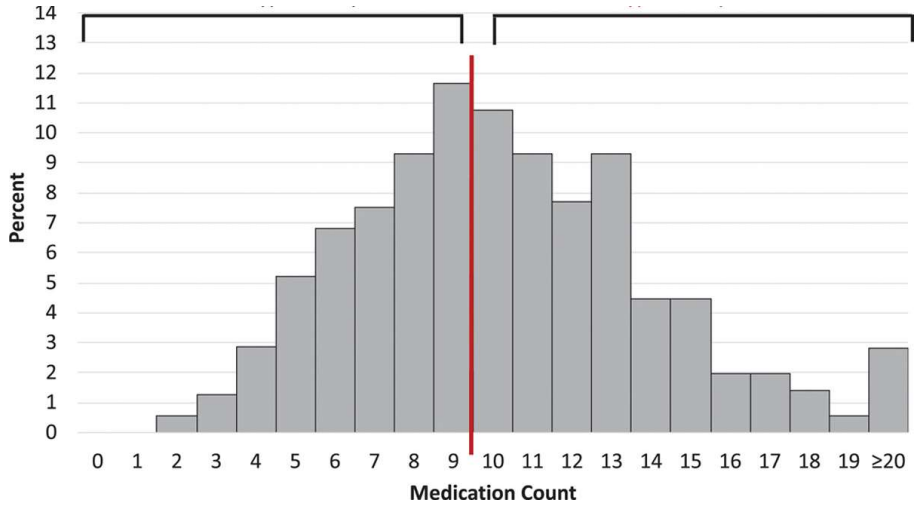
# Implications of Multimorbidity in Heart Failure

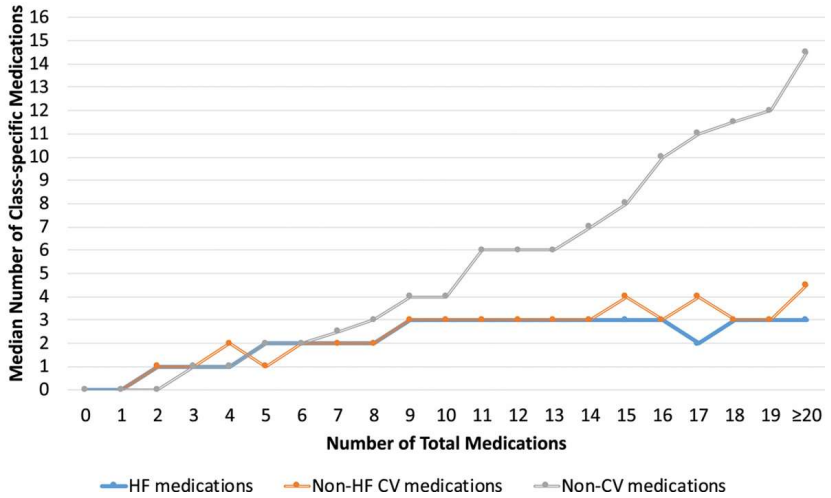
- Multimorbidity is associated with higher risk of mortality in HF regardless of LVEF
  - Synergistic effects of some comorbidity combinations on prognosis
- In addition to adverse disease-disease interactions, increases the risk of:
  - Disease-drug interactions
  - Drug-drug interactions
  - Therapeutic competition

Dewan et al. *Eur J Heart Fail* 2023;25:687-97
Yang et al. *Circ Heart Fail* 2025;18:e011598

# Polypharmacy

- Use of ≥5 medications is nearly universal in HF patients

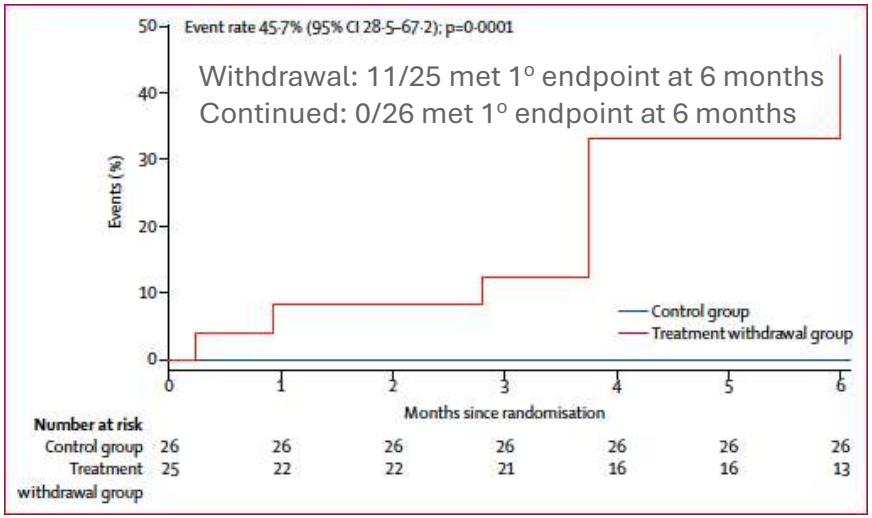



Unlu et al. *Circ Heart Fail* 2020;13:e0006977

# Polypharmacy

- Emphasis should be on inappropriate or low benefit medications
  - Framework: (1) Medication reconciliation; (2) Identify potentially inappropriate medications [BEERs, STOPP/START]; (3) Assess time-to-benefit; (4) Align with patient goals
- Very little data regarding deprescribing GDMT for HF
  - TRED-HF is a cautionary note

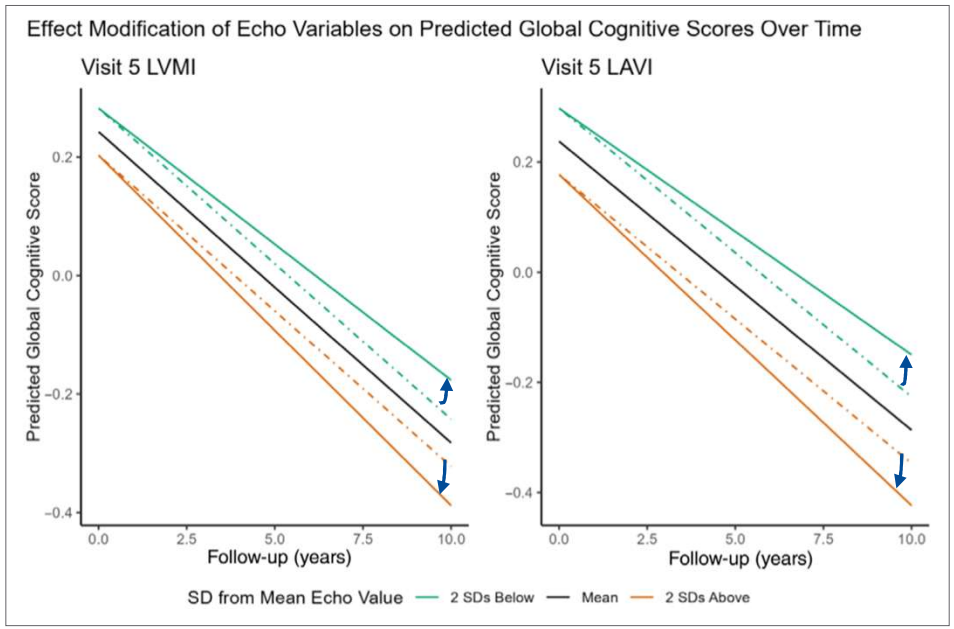



Halliday et al. *Lancet* 2019;393:61-73

# Intersection with cognition

- Cognitive impairment is present in 22-78% of HF patients, depending on the screening tools used
- Patients with HF demonstrate greater declines in cognitive function over time

Rate of decline in cognitive function over 10 years





Goyal et al. *J Card Fail* 2024;30:488-504
Witt et al. *J Gen Intern Med* 2018;33:1721-8
Dehghan et al. *Alzheimer's Dement* 2026;22:e71089

# Implications of cognitive impairment

1. Impaired self-care, including maintenance (dietary adherence), tracking (following weights), and management (adjusting diuretics)
2. Medication errors and nonadherence
3. Less of independence and reduced QoL

Goyal et al. *J Card Fail* 2024;30:488-504

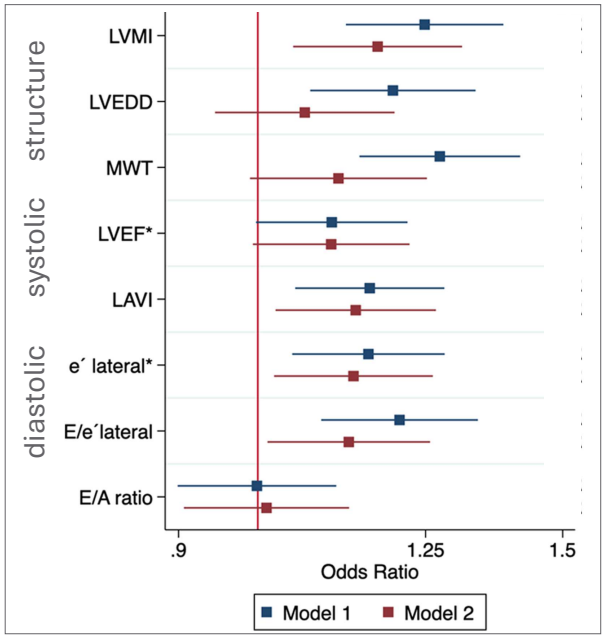
# Implications of cognitive impairment

- Screen for cognitive impairment (e.g. Mini-Cog)
- Exclude confounders, including depression (present in ~20% of HF patients) and sleep disturbance (OSA)
- Disclose to patient and consider referral to a specialist (e.g. neurologist or geriatrician) if detected
- Accommodate deficiencies:
  - Activate social network (family, friends, caregivers)
  - Optimize medications, regimen, and adminstration

# Intersection with physical functioning & frailty

- Bidirectional relationship between HF and frailty related to sarcopenia and cachexia
- Frailty is prevalent in ~50% of HF patients and associated with 1.5-fold to 2-fold increased risk of HF hospitalization and death

Risk of incident frailty at 5 years



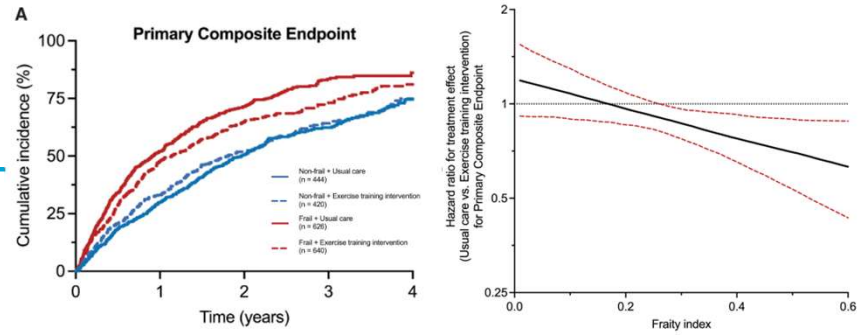


Talha et al. *J Cachex, Sarcop, Muscle* 2023;14:1959-72
Segar et al. *J Am Geriatr Soc* 2021;69:2486-97
Ramonfaur et al. *J Am Heart Assoc* 2023;12:e029458

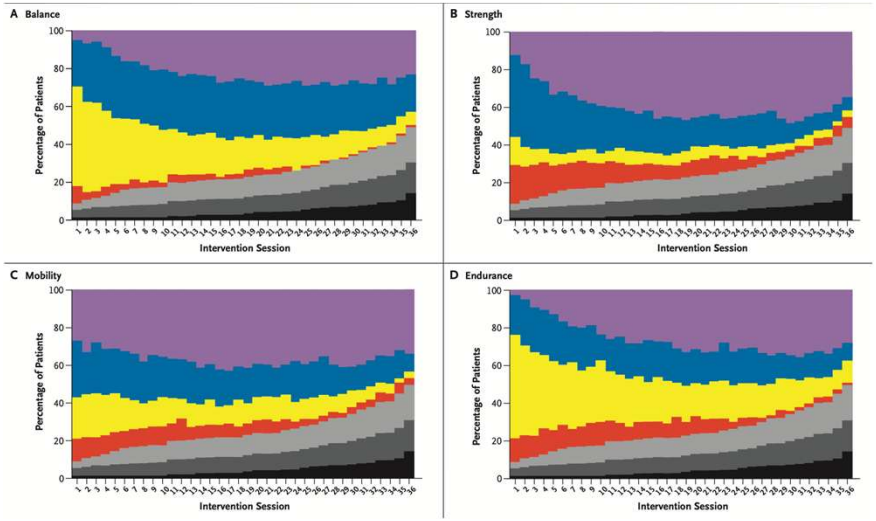
# Implications

- Frail HF patients prescribed fewer ACEi/ARB and Bbl
- Efficacy of HF GDMT appears equivalent in frail vs non-frail patients
  - Higher rates of discontinuation
  - Possible enhanced treatment effect in frail patients for some agents (e.g. SGLT2i)

ACTION-HF (HFrEF), post-hoc



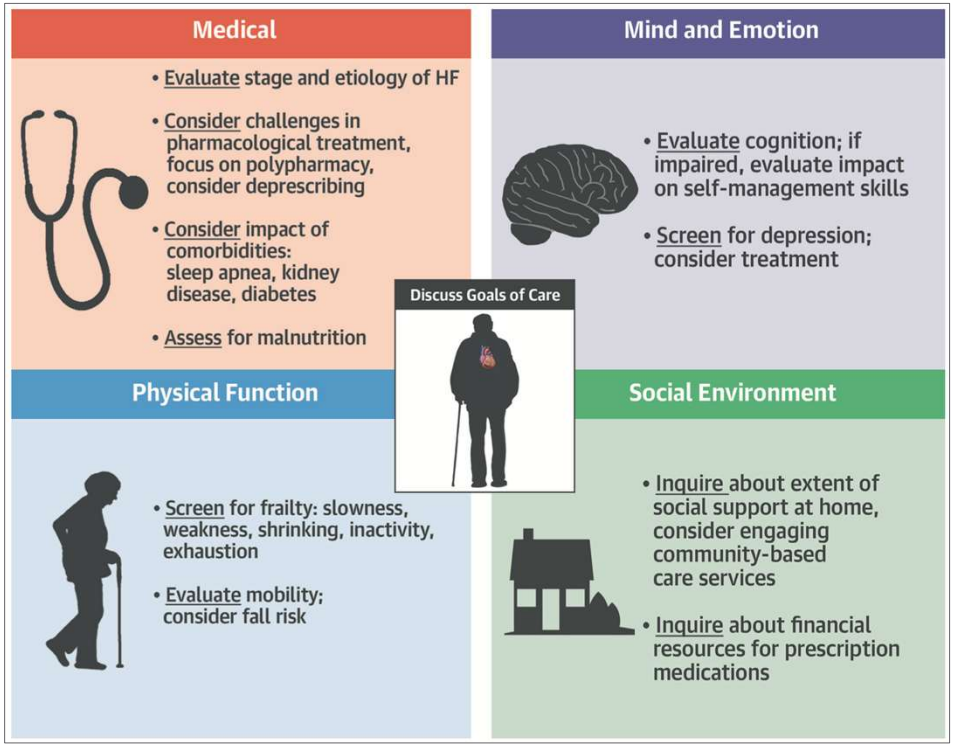

REHAB-HF (HFpEF)





Talha et al. *J Cachex, Sarcop, Muscle* 2023;14:1959-72
Pandey et al. *Circulation* 2022;146:80-90
Kitzman et al. *N Engl J Med* 2021;385:203-16

# Domain-Based Management Approach to Heart Failure in Geriatric Patients




| Medical Issues | Mind and Emotions |
|---|---|
| Standard HF evaluation | The Mini-Cog |
| Comorbidity screen | PHQ-2 |
| Medication intake/reconciliation | |
| Nutritional assessment (MNA SF) | |
| **Physical Function** | **Social Environment** |
| ADLs/IADLs | Social support |
| Gait speed over 5 meters | Adaptable/safe environment plan |
| Timed Up and Go test | Access to nutrition |
| FRAIL questionnaire | Access to transportation |
| | Medication management |

Gorodeski et al. *J Am Coll Cardiol* 2018;71:1921-36

# Case Presentation

- 82-year-old woman history of CAD with remote MI, diabetes, hypertension, CKD3 who is following up from first hospitalization with ADHF 2 months ago, diagnosed with HFrEF (LVEF 30%, ischemic). Feels well overall, mild fatigue and dyspnea with climbing a flight of stairs.
- Mini-Cog is normal. PHQ-2 screen negative for depression
- Strong handshake, no trouble getting up from chair
- Lives alone, manages her medications, goes to senior center most days, adult children are local

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- Mini-Cog suggests MCI. Reports feeling lonely most days.
- Weak handshake, Gets up from chair slowly and with support.
- Lives alone, daughter assists with medications, does not leave the home often, adult children are local

# Case Presentation

**Scenario 1**

- Mini-Cog is normal. PHQ-2 screen negative for depressio
- Strong ha o from chair
- Lives alone, manages her medications, goes to senior center most days, adult children are local

- Optimize GDMT (valsartan->sac/val; metformin->empa) and d/c HCTZ to minimize polypharmacy
- Discuss referral to cardiac rehab
- Discussion re ICD evaluation in the context of her priorities/goals
- Identify surrogate decision maker and wishes regarding resuscitative efforts

**Scenario 2**

- Mini-Cog suggests MCI. Reports feeling lonely most days.
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- Optimize GDMT and d/c HCTZ
- Strongly consider referral to cardiac rehab
- More thorough depression screen; discuss potential MCI as possible referral
- Engage family regarding more support for medication adherence and self-care
- Family meeting to discuss preferences for ICD

# Conclusions

1. Cardiovascular aging is characterized by increased arterial and ventricular stiffness, reduced cardiac reserve, and reduced beta-adrenergic function
2. Optimizing health behaviors and factor (Life's Essential 8) at all ages is the best way to optimize cardiovascular aging
3. Medical status, cognitive and emotional state, physical function, and the social environment are each essential domains to assess to develop patient centered management approach to geriatric cardiovascular patients

# Thank You



UT Southwestern
Medical Center

# Update in Internal Medicine 2026

**Saturday, May 2 • 8 a.m. – 4 p.m.**

UT Southwestern Medical Center, T. Boone Pickens Medical Education & Conference Center

## Caring for Older Adults with Breast Cancer

Shifa Kanjwal, MD
Assistant Professor, Internal Medicine
Breast Medical Oncology
Division of Hematology/Oncology

UT Southwestern Medical Center

# Caring for Older Adults With Breast Cancer

# Outline

- Assessment of functional status in patients undergoing cancer treatment
- When should should screening mammography stop?
- Common cancer therapies (chemotherapy, endocrine therapy) and considerations in older adults with breast cancer

# Clinical Case 1

A 78 yo woman presents with symptom-detected Stage II triple negative breast cancer. She is very hesitant to receive any chemotherapy and asks if it would be better for her to proceed with surgery alone. She has a hx of well controlled hypertension and ECOG 0-1. She is independent, employed, drives to appointments, and lives alone with her cat. She wants to prolong her life without compromising her quality of life.

# Clinical Case 1 Question

**How would you recommend she proceed for treatment of her triple negative breast cancer?**

A. As her age is >70, it would be best to proceed with surgery alone due to high toxicity potential from chemotherapy

B. A comprehensive geriatric assessment should be performed to develop the most appropriate treatment plan

C. She should receive multi-agent chemotherapy to improve her chances of survival

D. Her prognosis is very limited, so palliative intent therapy should be discussed

# Clinical Case 2

A 68 yo woman with hx of morbid obesity (BMI 46), HTN, HLD, DMII (Hgb A1c = 9) is diagnosed with a screen-detected Grade 1 papillary carcinoma, ER+/PR+/HER2 negative. She undergoes a lumpectomy revealing Stage I invasive papillary carcinoma and is worried about breast cancer recurrence and asks what she can do to prevent this.

# Clinical Case 2 Question

**How would you counsel this patient?**

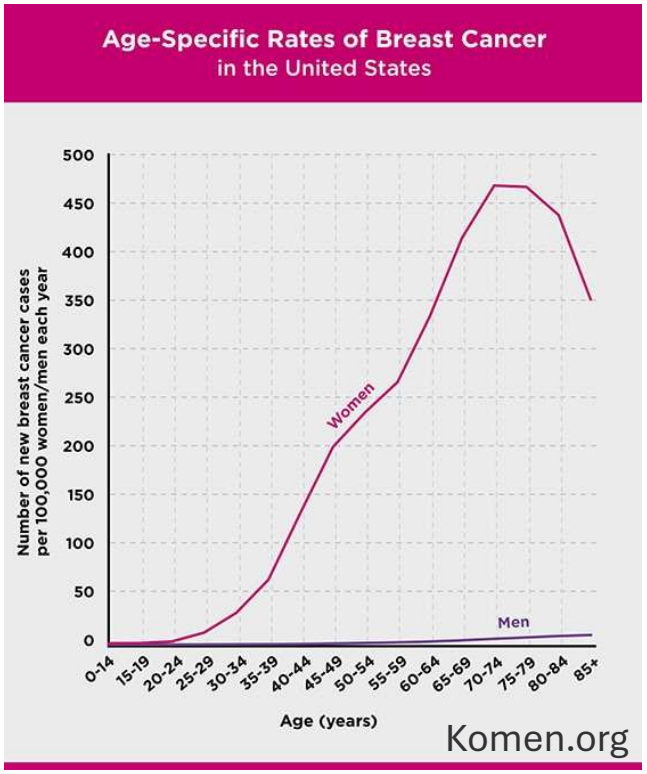
A. Endocrine therapy for her ER+ breast cancer can worsen her cardiometabolic health

B. Exercise and weight reduction can reduce her risk for recurrent breast cancer

C. Her risk of cardiovascular mortality is likely higher than her risk of cancer-related mortality

D. All of the above

# Epidemiology




- Risk of breast cancer increases with age
- Nearly ½ of breast cancer diagnosed in patients 65+
- Aging population = rising prevalence
- Improved survival due to screening and better treatments

# Chronologic Age v. Physiologic Age

**Factors to consider:**

Independence/ADL's

Frailty

Mobility

Cognition

Comorbidity

Life Expectancy

| Grade | ECOG Performance status |
|---|---|
| 0 | Fully active, able to carry out all pre-disease performance without restriction |
| 1 | Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature, for example, light house work, office work |
| 2 | Ambulatory and capable of all self-care but unable to carry out any work activities; up and about more than 50% of waking hours |
| 3 | Capable of only limited self-care; confined to bed or chair more than 50% of waking hours |
| 4 | Completely disabled; cannot carry on any self-care; totally confined to bed or chair |
| 5 | Dead |

Cameron J *Journal of Radiotherapy in Practice*. 2022

# Comprehensive Geriatric Assessment: CARG Toxicity Tool

**Higher CARG-BC score associated with :**

- ≥G3 chemo toxicity
- Hospitalization
- Dose reduction/delay
- Early treatment discontinuation
- Reduced relative dose intensity

**Table 1.** Prediction Model and Scoring Algorithm for Chemotherapy Toxicity

| Variable | Value/Response | Score |
|---|---|---|
| Age of patient | ≥ 72 years | 2 |
| | < 72 years | 0 |
| Cancer type | GI or GU cancer | 2 |
| | Other cancer types | 0 |
| Planned chemotherapy dose | Standard dose | 2 |
| | Dose reduced upfront | 0 |
| Planned No. of chemotherapy drugs | Polychemotherapy | 2 |
| | Monochemotherapy | 0 |
| Hemoglobin | < 11 g/dL (male), < 10 g/dL (female) | 3 |
| | ≥ 11 g/dL (male), ≥ 10 g/dL (female) | 0 |
| Creatinine clearance (Jeliffe, ideal weight) | < 34 mL/min | 3 |
| | ≥ 34 mL/min | 0 |
| How is your hearing (with a hearing aid, if needed)? | Fair, poor, or totally deaf | 2 |
| | Excellent or good | 0 |
| No. of falls in the past 6 months | ≥ 1 | 3 |
| | None | 0 |
| Can you take your own medicine? | With some help/unable | 1 |
| | Without help | 0 |
| Does your health limit you in walking one block? | Somewhat limited/limited a lot | 2 |
| | Not limited at all | 0 |
| During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc)? | Limited some of the time, most of the time, or all of the time | 1 |
| | Limited none of the time or a little of the time | 0 |

NOTE. See Hurria et al.[2]
Abbreviation: GI, gastrointestinal; GU, genitourinary.

Nishijima et al, 2018

# Adjuvant Chemotherapy Outcomes in Older Adults With Nonmetastatic Triple-Negative Breast Cancer

- Adjuvant chemo associated with improved Breast-Cancer Specific Survival (HR, 0.69) and Overall Survival (HR, 0.55) in older women with nonmetastatic TNBC.
- Chemo use increased from 35.8% to 48.7% 2010-2021
- Despite worse BCSS and OS with increasing age, increasing age was associated with lower odds of adjuvant chemotherapy.

Anampa et al, *JAMA Netw Open* 2026

# Clinical Case 1 Question

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# Outline

- Assessment of functional status in patients undergoing cancer treatment
- **When should should screening mammography stop?**
- Common cancer therapies (chemotherapy, endocrine therapy) and considerations in older adults with breast cancer

# At What Age Should Screening Mammography be Discontinued?

- Chronologic age alone should not determine whether screening stops
- Consider stopping when:
  - Life expectancy <5-10 years
  - Significant frailty/advanced dementia
  - Severe competing illness
  - Patient would decline treatment if cancer found

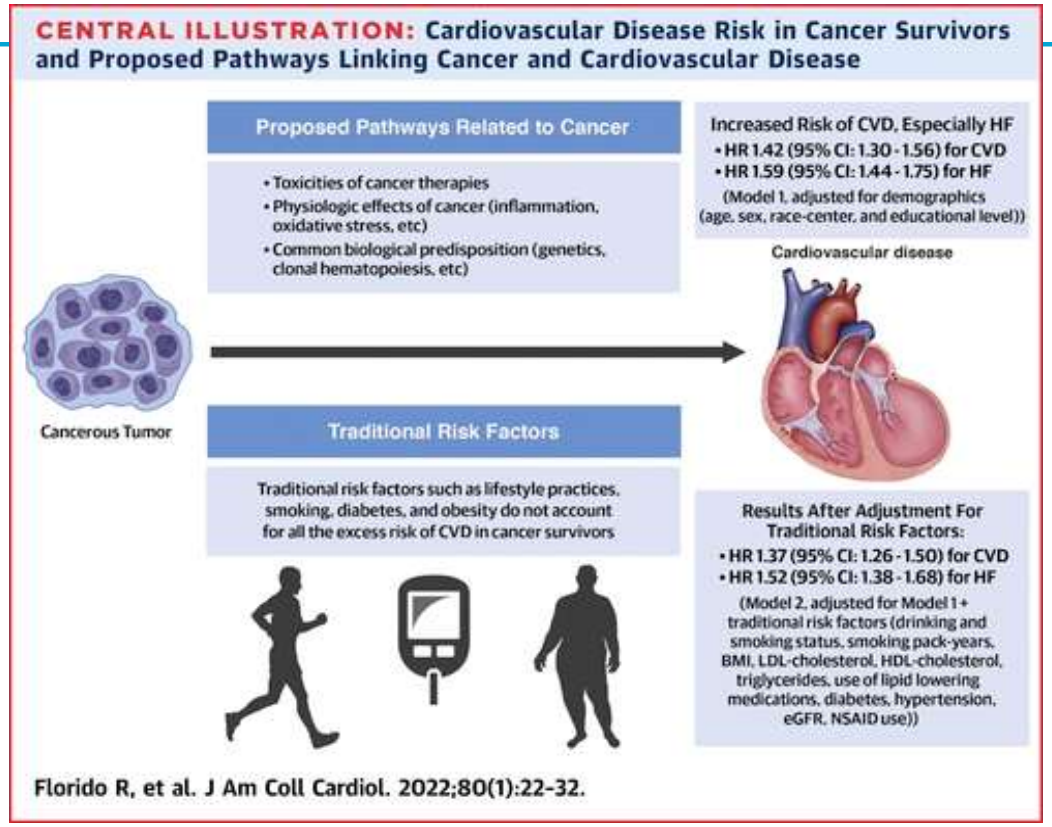
# Outline

- Assessment of functional status in patients undergoing cancer treatment
- When should should screening mammography stop?
- **Common cancer therapies (chemotherapy, endocrine therapy) and considerations in older adults with breast cancer**

# Common Breast Cancer Therapies

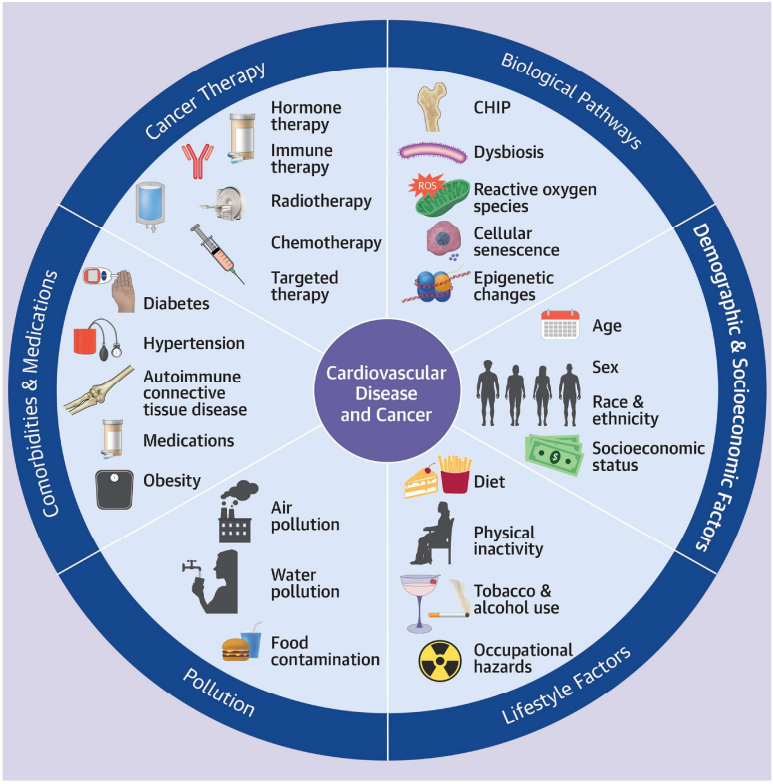
- Surgery (partial mastectomy, total mastectomy)
- Radiation (partial v. whole breast +/- RNI)
- Chemotherapy
- **Endocrine therapy** (aromatase inhibitors, tamoxifen)
- HER2-targeted therapy (trastuzumab, pertuzumab, trastuzumab-deruxtecan)

# Cardiovascular Disease is a Competing Risk Factor for Cancer Survivors



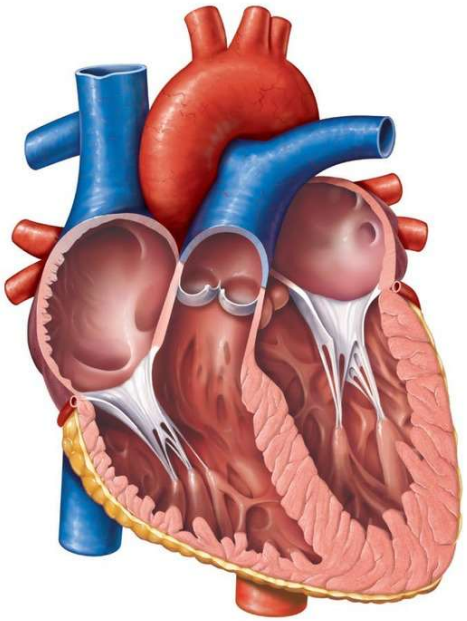
# Predisposing Risk Factors are Similar in CVD and Cancer

**CENTRAL ILLUSTRATION: Drivers of the Cancer-Cardiovascular Disease Bidirectional Relationship**




Alhuneafat L, et al. JACC CardioOncol. 2025;7(5):453-469.

# CV Toxicity of Breast Cancer Therapy



(e)



## Pump (LV):

- Conventional chemotherapy (anthracyclines, alkylating agents)
- HER-2 directed agents (including ADC's)
- Radiation
- ICI (myocarditis)

## Vessel (Coronary Arteries):

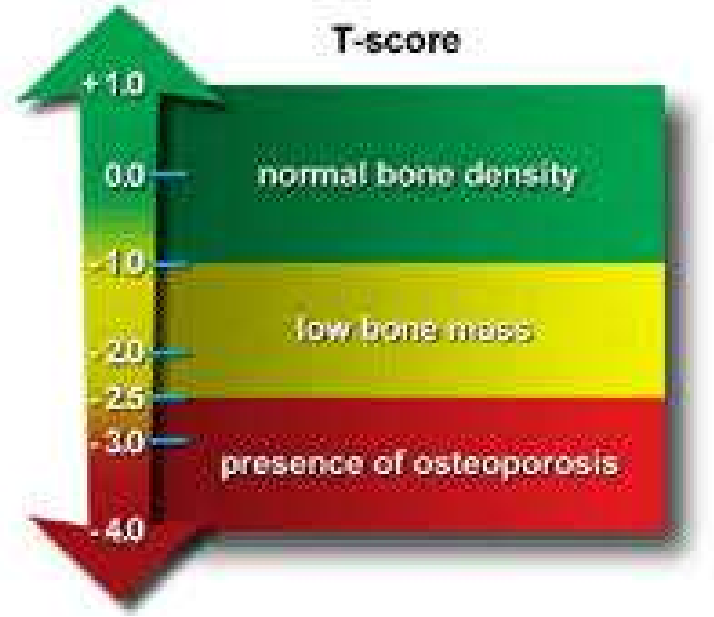
- Hormonal therapy (aromatase inhibitors)
- Antimetabolites (5-FU/capecitabine: vasospasm)
- Radiation
- ICI (vasculitis, thrombosis)

## Rhythm:

- Ribociclib
- Chemo (anthracyclines, alkylating agents, taxanes, 5-FU/cape)
- Radiation
- ICI

# Aromatase Inhibitors

- Letrozole, anastrozole, exemestane
- Side effects include:
  - Arthralgias
  - **Decline in bone density**→adjuvant zometa for higher-risk postmenopausal ER+ BC
  - Hyperlipidemia, **metabolic dysfunction**
  - Vaginal/skin dryness: vaginal estrogen is safe
- Primary endocrine therapy may be used in patients who are not surgical candidates



# Tamoxifen

- Increased risk of endometrial cancer, especially in postmenopausal women. Annual GYN follow-up recommended.
  - No clear role for surveillance pelvic US in asymptomatic patients
- VTE risk
- Drug interactions (avoid SSRI's)

# Clinical Case 2

A 68 yo woman with hx of morbid obesity (BMI 46), HTN, HLD, DMII (Hgb A1c = 9) is diagnosed with a screen-detected Grade 1 papillary carcinoma, ER+/PR+/HER2 negative. She undergoes a lumpectomy revealing Stage I invasive papillary carcinoma and is worried about breast cancer recurrence and asks what she can do to prevent this.

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# Summary

- Consider a patient's life expectancy, comorbidity and personal preferences when ordering screening mammograms in older adults
- Older age is not a contraindication to receiving chemotherapy, but involves careful assessment of chemo toxicity risk (comprehensive geriatric assessment) and careful selection of cancer therapies
- Declining bone health and cardiometabolic risk are major competing risk factors in postmenopausal patients with lower-risk, early-stage hormone-positive breast cancer

# Update in Internal Medicine 2026

**Saturday, May 2 • 8 a.m. – 4 p.m.**

UT Southwestern Medical Center, T. Boone Pickens Medical Education & Conference Center

## Holistic Care to Support Aging Well

Luigi Bernabela MD, RhMSUS

Division of Rheumatic Diseases

UT Southwestern Medical Center

# Current Perspective and Management of Large Vessel Vasculitis (GCA) and Polymyalgia Rheumatica

# Objectives

Current Perspective in Diagnosis and Management of Large Vessel Vasculitis (GCA) and Polymyalgia rheumatica (PMR)

- When to consider PMR and GCA
- New diagnostic modalities
- New treatment options to consider

# Case 1

# Case presentation

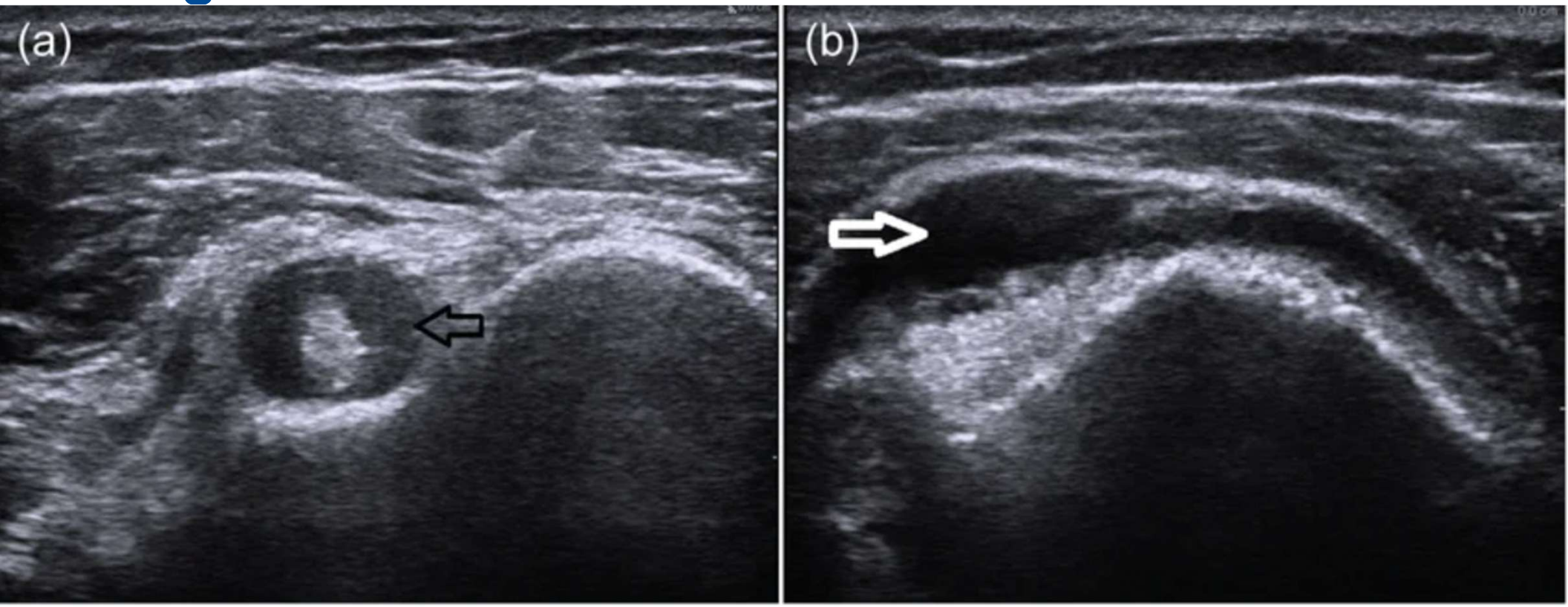
- John, a 72-year-old male presents for evaluation of bilateral shoulder pains and stiffness which started 3 weeks ago. He feels like he got "old very quickly". Stiffness is worse with inactivity and sleep.  He has glaucoma, hypertension, hyperlipidemia and CKD.
- Medications: Losartan, pravastatin
- Examination: Vitals normal. BMI 32. Limited ROM with abduction of the shoulders due to pain. No other joint swelling and exam otherwise normal
- Labs: CCP normal , RF <14, CRP 32 mg/L (<10)
- You suspect PMR

**What diagnostic modality can aid in making the diagnosis?**

**What diagnostic modality can aid in making the diagnosis?**

A) Shoulder XRs
B) High sensitivity CRP
C) Shoulder Ultrasound
D) ANA test

# Diagnosis of PMR




collaborative initiative. Ann Rheum Dis. 2012 Apr;71(4):484-92

# Polymyalgia Rheumatica

- Arthritis, enthesitis, periarthritis of shoulder and hip girdles
- Most common rheumatic disease after Age >50
- Peaks ~70-80 years
- 2-3 times more frequent in females

- PMR associated with Giant cell arteritis, 5-10%
- Primary or isolated PMR is 3 times more common than GCA

Espígol-Frigolé et al. Polymyalgia rheumatica. Lancet. 2023

# Clinical presentation and Diagnosis PMR

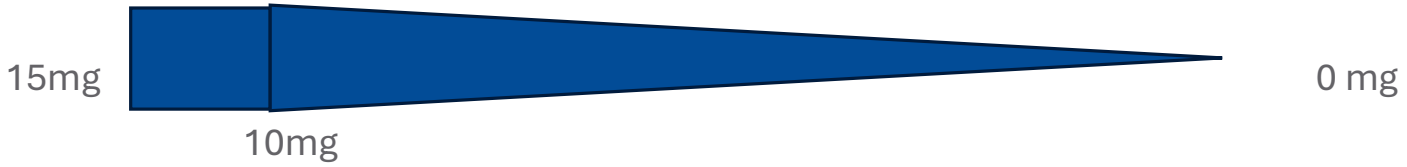
- Inflammatory hip and shoulder stiffness.
- Elevated ESR
- CRP is nearly always elevated in PMR
- Antibodies are negative, no distal arthritis

- Clinical diagnosis
- Dramatic response to glucocorticoids. Lack thereof, alternate diagnosis.
- Imaging not necessary but PET/CT, MSK ultrasound quite supportive.

Espígol-Frigolé et al. Polymyalgia rheumatica. Lancet. 2023

# PMR treatments- Glucocorticoids (GC) - Practical tips

- Initial prednisone dose 10-15mg/day
- No standardized tapering regimen




- Taper regimen usually go over >12 months. >50% of patients don't tolerated GC
- 40-50% patients flare during tapering of glucocorticoids
- GC-related toxicity in 65-75% of patients
- Most PMR cases can be managed my generalist.

# Case 2

# Case 2

- John presents for follow up. He has experienced remarkable improvement since initiation of prednisone for his PMR.
- He tapered and currently is on 7mg of prednisone but has been experienced recurring PMR symptoms every time he reduces his prednisone to 6mg/day.
- His Blood pressure has been more difficult to control you are considering adding amlodipine. He has also gained 10 lbs since starting prednisone.

**What medication changes, if any, would you recommend for his PMR?**

**What medication changes, if any, would you recommend for his PMR?**

A) Continue prednisone regimen

B) Start methotrexate

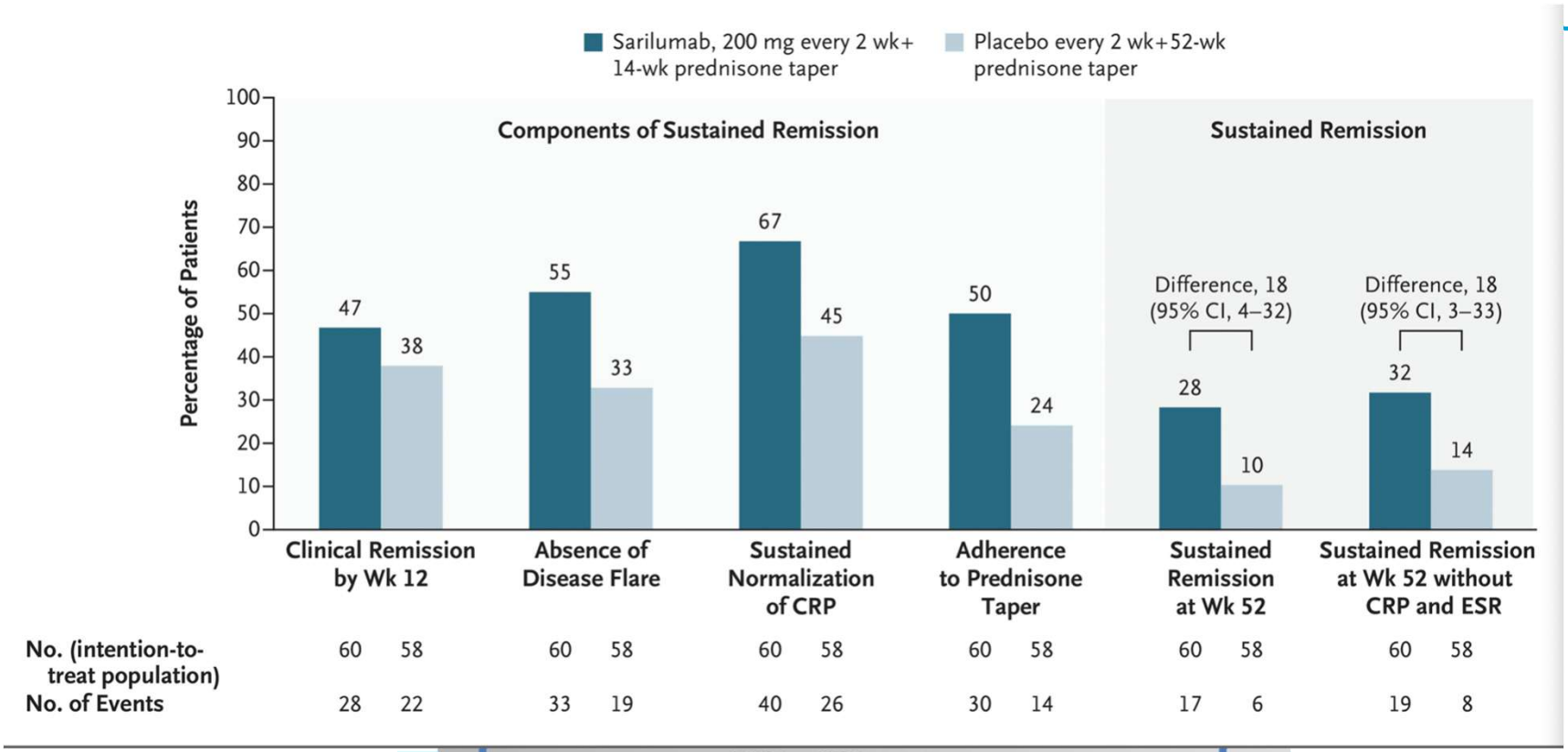
C) Start Sarilumab

D) Start Naproxen

# Methotrexate

- Whether methotrexate is effective for polymyalgia rheumatica (PMR) remains unclear
- Role may be more on steroids sparing effect rather than efficacy.
- Not associated with actual reduction in glucocorticoid-related adverse events

# Sarilumab- First FDA approved medication for PMR




18% difference
95% CI 4-32; p=0.02

1)Demonstrated significant efficacy in achieving sustained Remission.

2) Reduced the cumulative GC dose in patients with a relapse of PMR during GC tapering.
Less treatment related Adverse events

# Take Home points- PMR

- Remains clinical diagnosis but MSK Ultrasound of the hips or shoulder can be helpful.
- Glucocorticoid associated adverse effects occur in ~50% of patients
- Consider addition of Sarilumab (Kevzara) in patients with relapsing disease or glucocorticoid adverse reactions

# Case 3

# Case 3

- 83-year-old female with diabetes, hypertension, CHF, presents for new onset headache. She also experiences jaw discomfort with chewing. For the last 2 months she experienced low grade temperatures at home with ongoing feeling of malaise and stiffness in the shoulders and hips.
- Examination: R temporal artery tenderness. Significant shoulder tenderness noted . Labs : ESR 93 mm/hr, CRP 72 mg/L Hb 10g/dL.
- You recommend temporal artery biopsy but patient and family refuses any surgical interventions.



**What diagnostic modality can aid in making diagnosis ?**

## What diagnostic modality can aid in making diagnosis ?

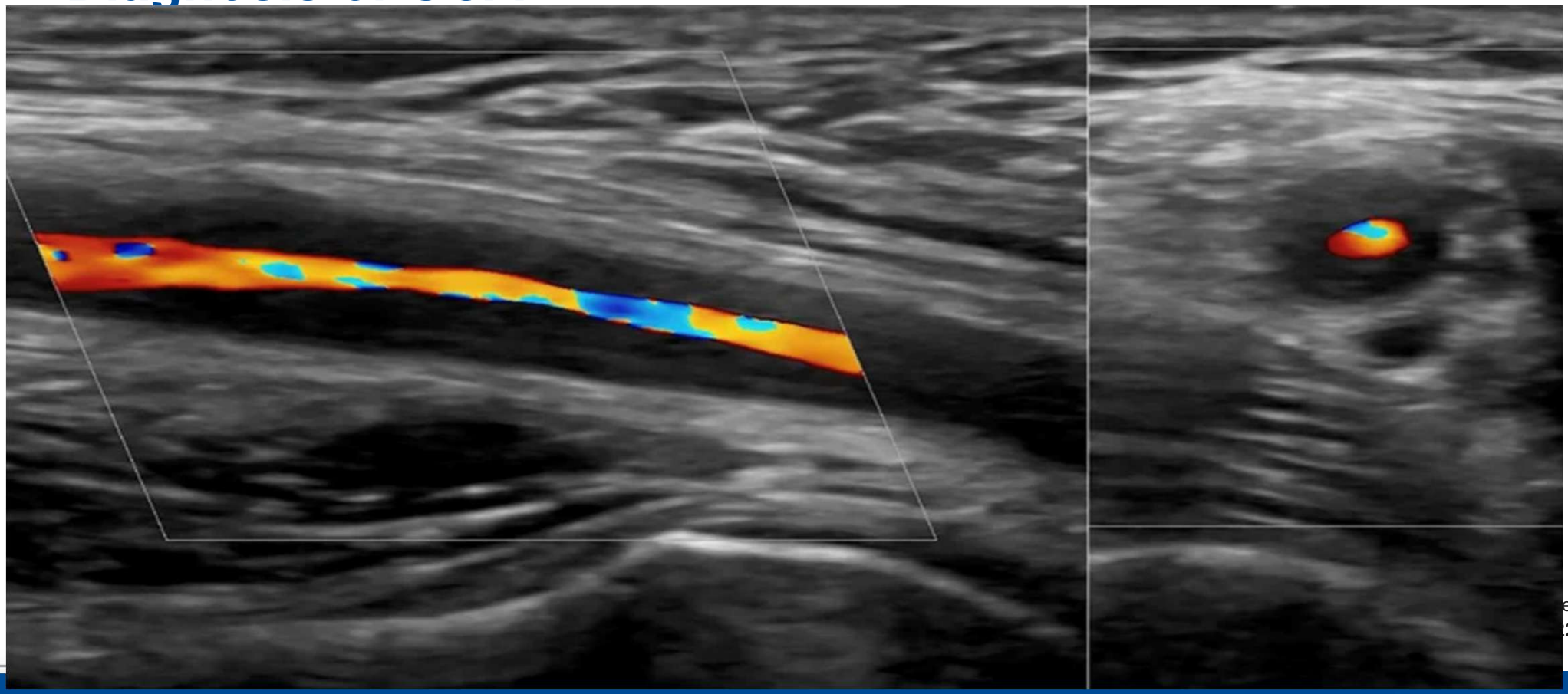
A) MRI of the Brain

B) Temporal artery ultrasound

C) IR guided CSF evaluation

D) No further interventions – respect the patient's wishes

# Diagnosis of GCA



ell
2

# GCA - Large Vessel Vasculitis

Giant cell arteritis

- >50 , peaks 70-80
- 3:1 female preponderance
- 17 per million in US
- Scandinavian decent
- Cranial arteries (historically)
- Extra-cranial Large vessel ~ 55%
- PMR association ~50%
- Risk for CVA and vision loss

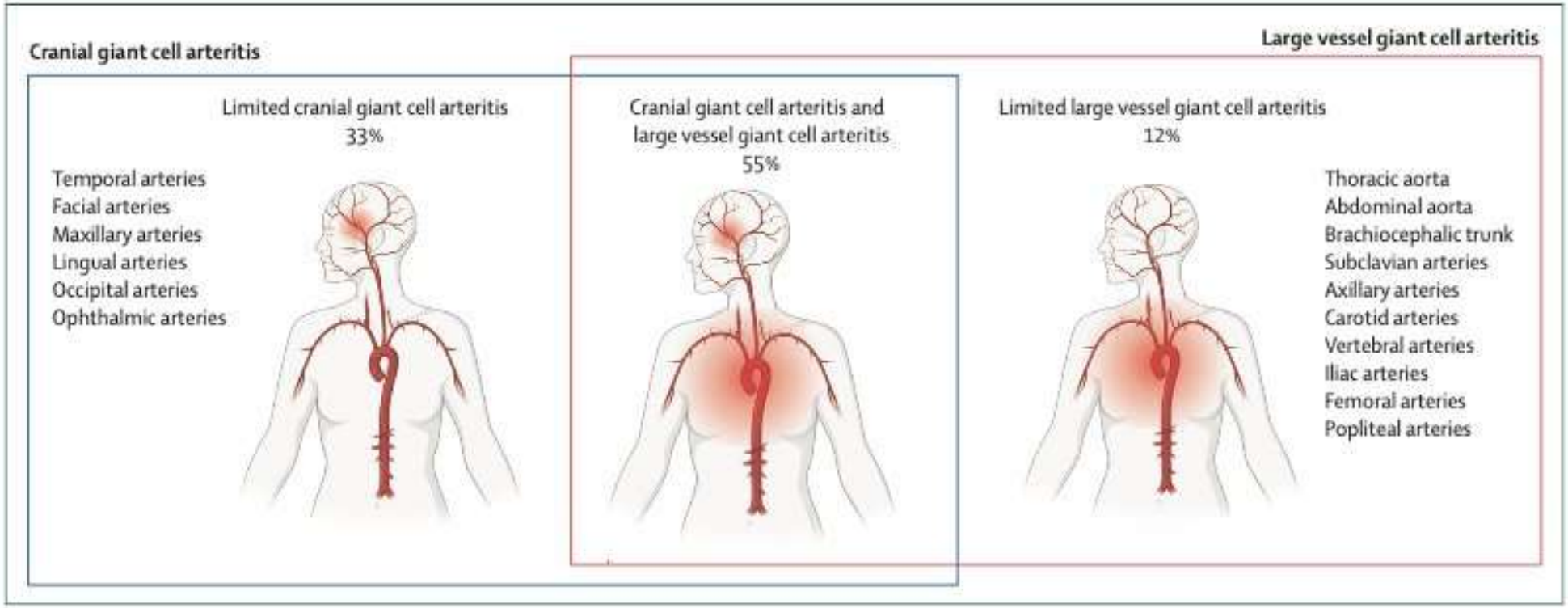
Scalp Hypersensitivity

Headache

Jaw Claudication

Vision loss (painless)

# Presentation phenotypes of Giant cell arteritis



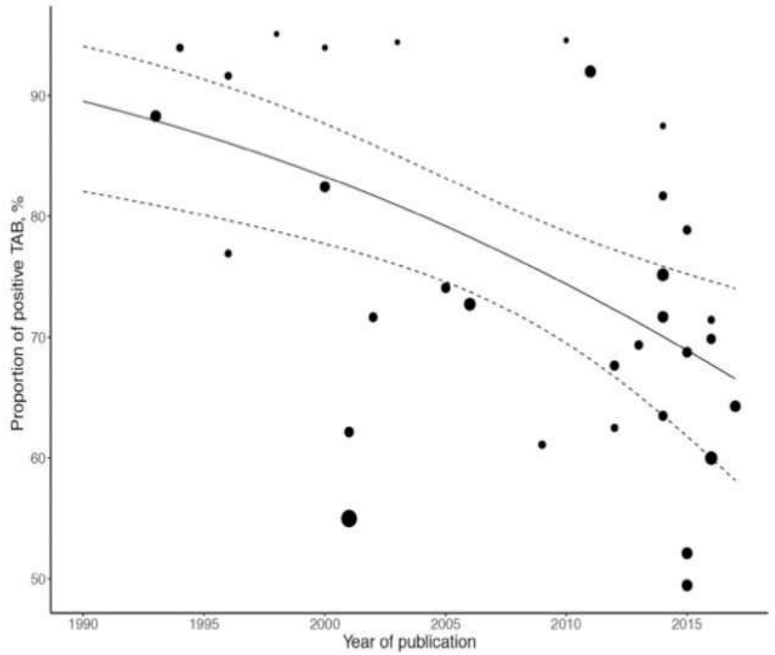

van der Geest KSM,et al. Large vessel giant cell arteritis. Lancet Rheumatol. 2024 Jun;6(6).

# Diagnosis- Temporal artery biopsy

- Historically known as Gold standard for diagnosis of GCA
- ~ 70-77 % sensitivity but this has declined with recent literature
- Negative biopsy in clinically positive patients are more common than previously thought.
- Skipped lesion
- Timing of the biopsy relative to steroid use
- Extra-cranial disease
- ACR has declared a 2 weeks time window to obtain a TAB

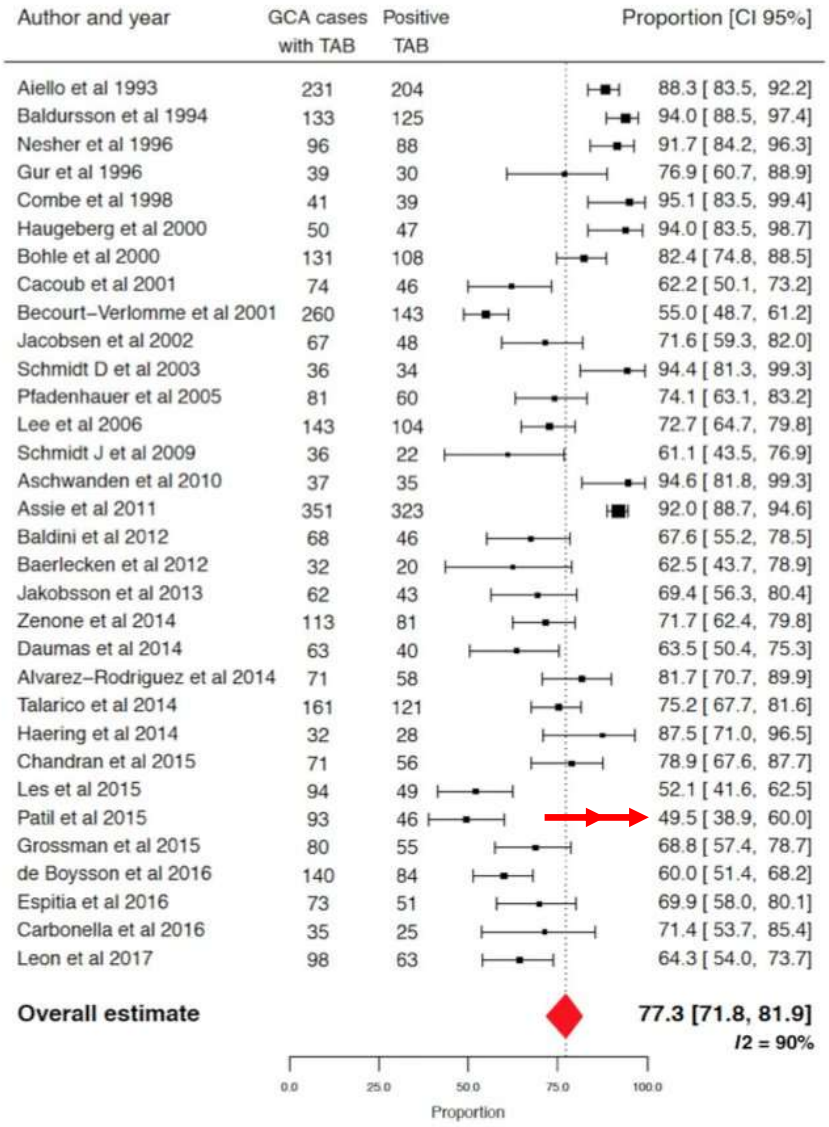
# Temporal artery biopsy

Fig. 3 Relationship between the proportion of cases of GCA with positive TAB and year of publication

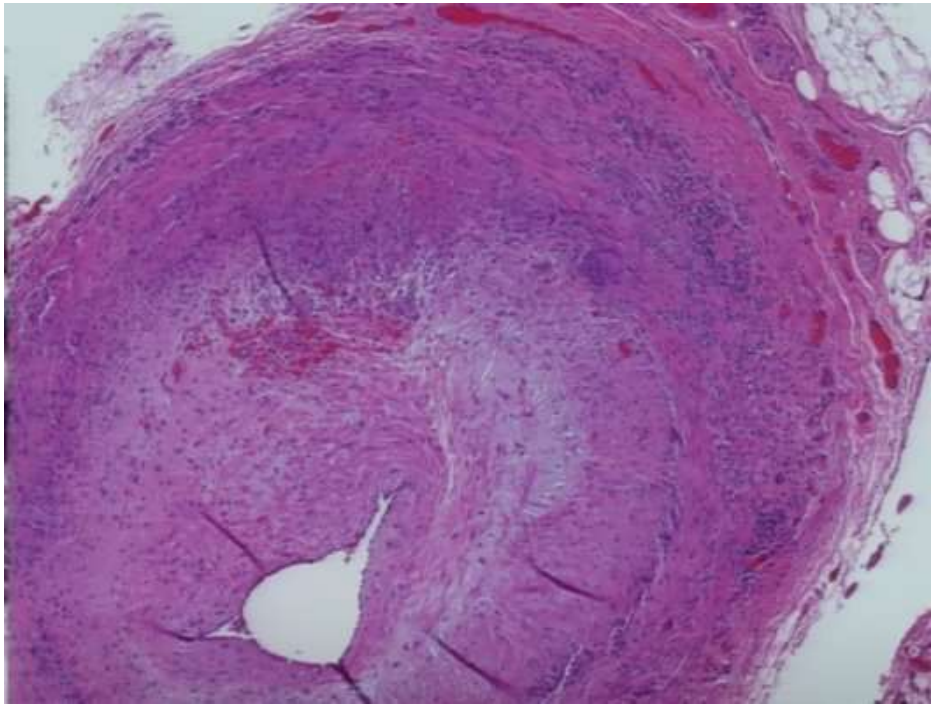


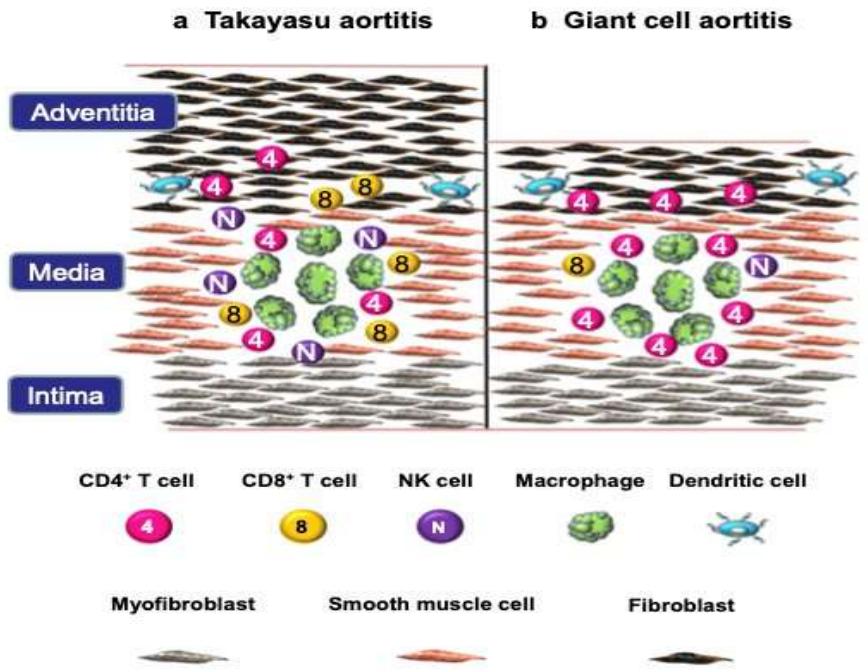

**p Sensitivity ~ 77%**

Fig. 2 Forest plot showing the estimated proportion of cases of GCA with positive TAB



# Temporal artery Biopsy





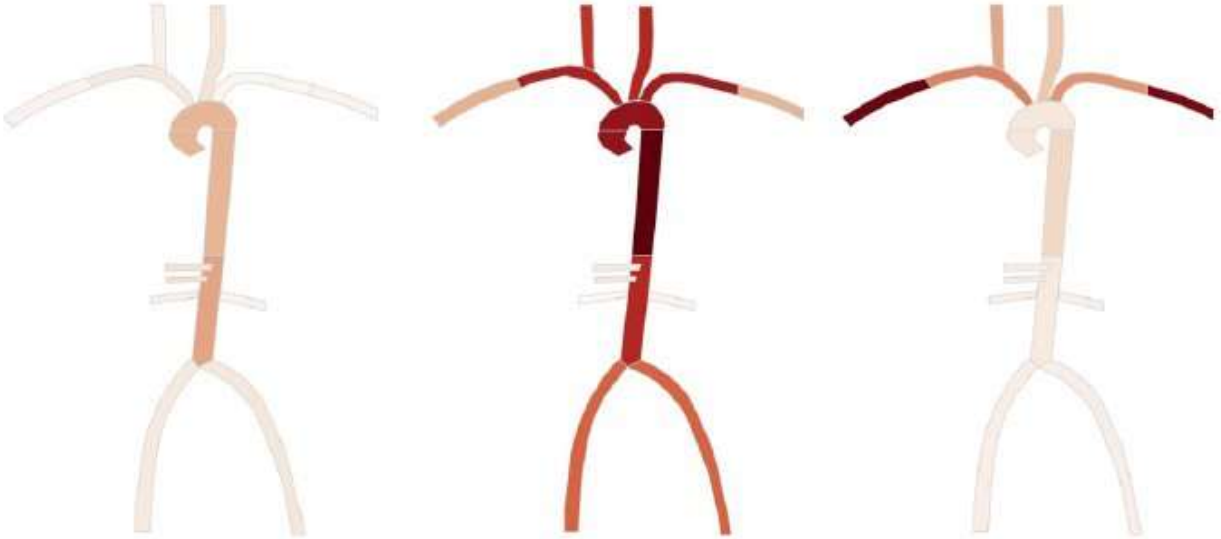

Watanabe R, Weyand CM. Pathogenesis of GCA and TAK Arteritis, Curr Rheumatol Rep. 2020 Aug 26;22(10):68

# New perspectives in diagnosis of GCA

- Suspected GCA, an early imaging test is recommended to support the clinical diagnosis of GCA
- MRA,  FDG-PET, Temporal artery ultrasound have diagnostic utility in GCA
- With high clinical suspicion of GCA and a positive imaging result, a diagnosis of GCA may be made without an additional test e.g a tissue biopsy (TAB).

Dejaco et al EULAR recommendations for the use of imaging in large vessel vasculitis in clinical practice: 2023 update. Ann Rheum Dis. 2024 May 15;83(6):741-751.

# Patterns of GCA on imaging



**Cluster Four**
33.6% TAK
66.4% GCA

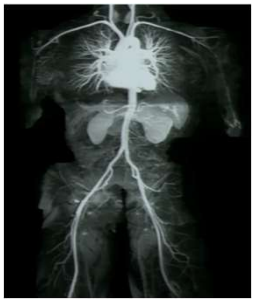
**Cluster Five**
16.2% TAK
83.8% GCA

**Cluster Six**
14.5% TAK
85.5% GCA

Gribbons KB, et al . Patterns of Giant Cell Arteritis. Arthritis Care Res (Hoboken). 2020 Nov;72(11):1615-1624.

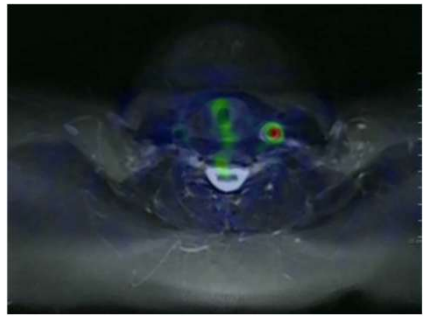
# DIAGNOSIS GCA

**MRA or CTA of Entire aorta w/ runoff**

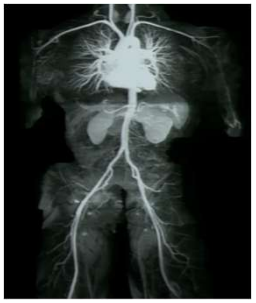


**<u>Useful</u> to assess stenosis, occlusion, aneurysm**

Carotid wall thickening and edema on MRI and PDG-PET in patient with Jaw claudication and scalp tenderness

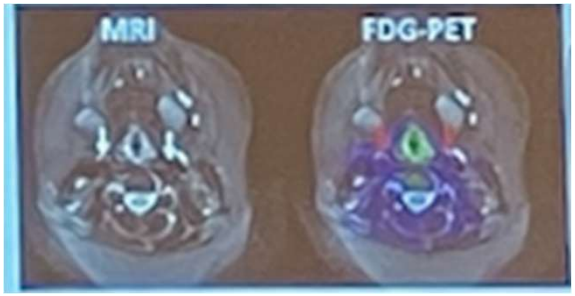
## TREATMENT RESPONSE



**<u>Useful</u> to assess luminal change**

Improve cranial disease symptoms

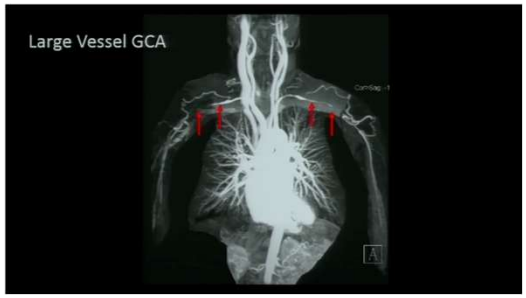
**Focus on symptom improvement**




**Useful to monitor treatment response**

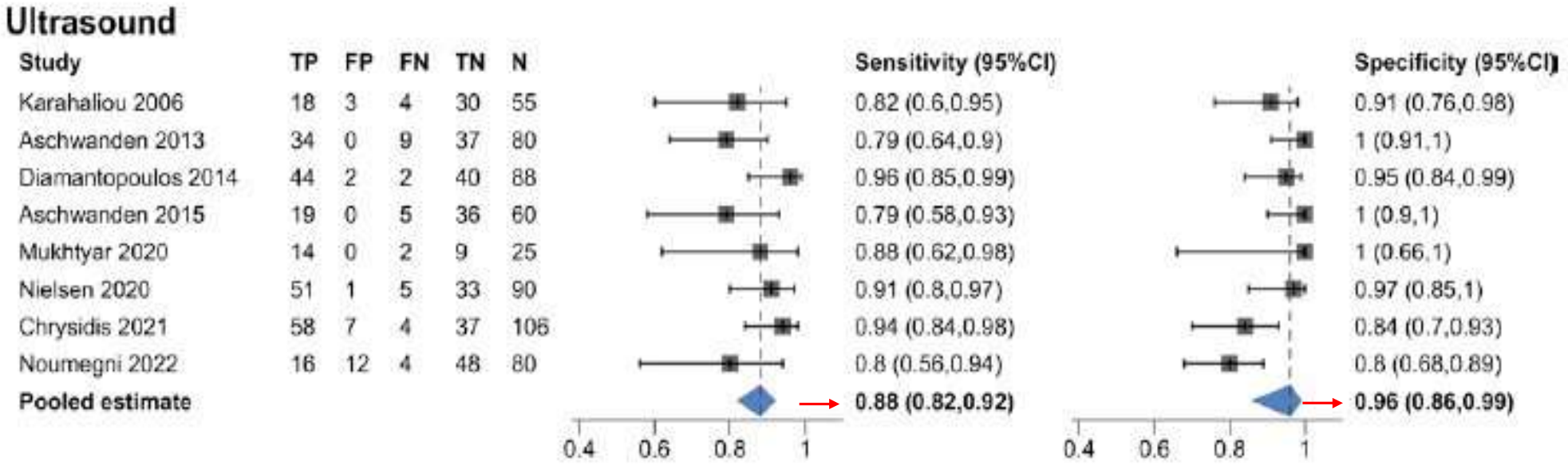
## SERIAL MONTITORING IN CLINICAL REMISSION

Follow up MRA or CTA of Entire aorta w/ runoff




**<u>Unclear</u> value of repeat scan in asymptomatic disease**

# Diagnostic performance of ultrasound in comparison with clinical diagnosis of GCA




TA ultrasound : pSensitivity 88%.
Vs ~77% TAB

p Specificity 96%

**The estimated sensitivity of temporal artery ultrasound is not inferior to sensitivity estimates for temporal artery biopsy.**

# Case 4

- 83-year-old female with diabetes, hypertension, CHF, presents for new onset headache. She also experiences jaw discomfort with chewing. For the last 2 months she experienced low grade temperatures at home with ongoing feeling of malaise and stiffness in the shoulders and hips.
- Examination: R temporal artery tenderness. Significant shoulder tenderness noted . Labs : ESR 93 mm/hr, CRP 72 mg/L Hb 10g/dL.
- Temporal artery ultrasound has revealed temporal artery and axillary wall thickening and positive Halo signs.

**What medication, if any, would you like to be started in addition to glucorticoids?**

**What medication, if any, would you like to be started in addition to glucorticoids?**

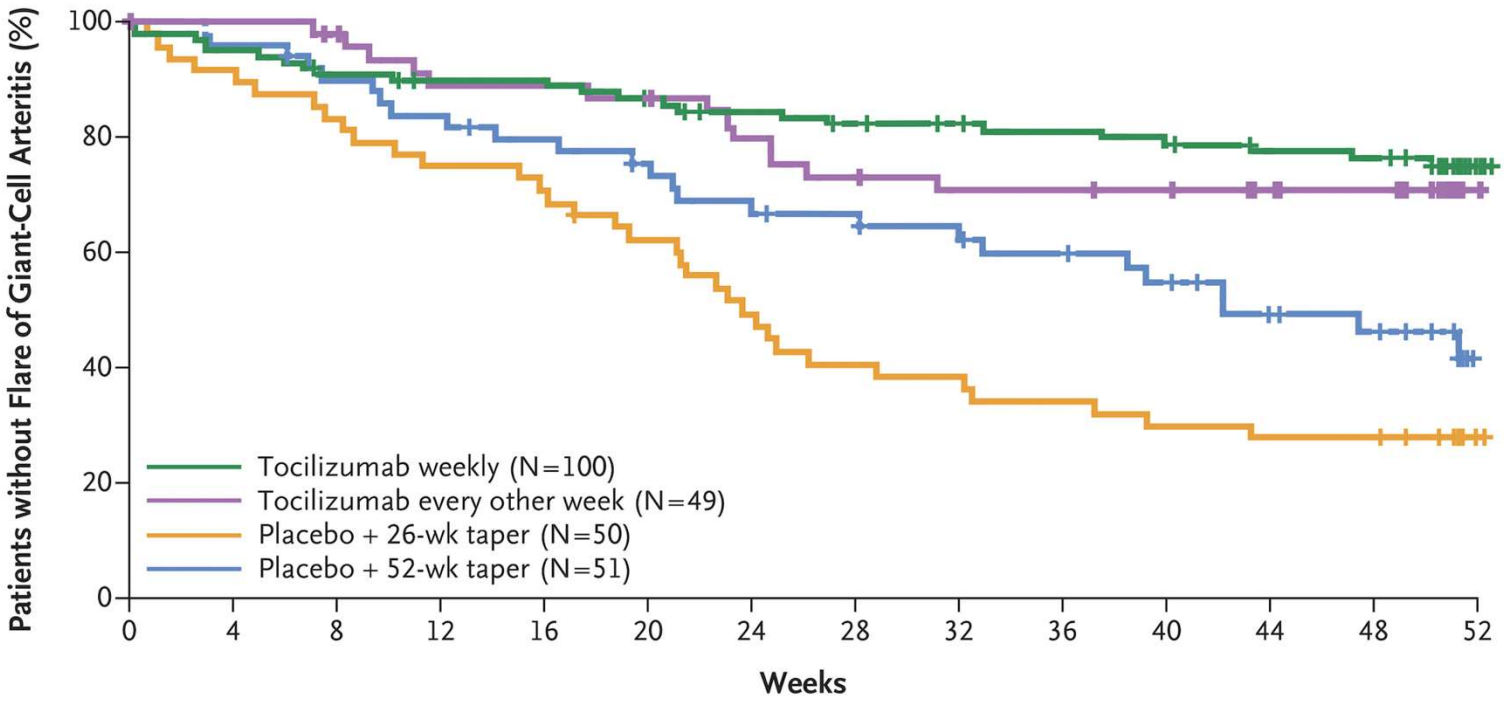
A) Tocilizumab

B) Methotrexate

C) Continue current steroid regimen

D)Hydroxychloroquine

# Tocilizumab- First FDA approved medication for GCA




-Sustained remission at 52 weeks 53/56 % vs 14% in placebo group

**Strong steroid** sparing effect at 52 wks
Placebo ~3300mg
Tocilizimab group ~ 1900mg

Stone et al. Trial of Tocilizumab in Giant-Cell Arteritis. N Engl J Med. 2017 Jul 27;377(4):317-328.

# Other treatments

- Rinvoq (Upadacitinib) - FDA approved 2025
- Methotrexate

# Management of Giant cell arteritis – Practical Tips

- Unilateral temporal artery biopsy, segment >1cm
- Try to obtain biopsy within 14 days. Consider Temporal artery US
- IV steroids for impeding vision loss, No cranial ischemia PO > IV steroids at 1mg/kg.
- New dx of GCA start steroids + Tocilizumab
- Statins not recommended at dx of GCA
- Use of Aspirin with cranial GCA.

# Take home points - GCA

- Extracranial disease in GCA is quite common
- CTA/MRA, MRI, Temporal artery ultrasound aid in diagnosis and identify extent of large vessel involvement.
- Glucocorticoid adverse reactions are very common
- Tocilizumab and upadacitinib reduce cumulative dose of steroids needed to treat GCA with higher sustained remission.

# Thank you