

Beyond the diagnosis: An Update on Geriatric Syndromes in LTC

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Disclosures

- Dr. Little has no relevant financial conflicts of interest to report.
- Dr. Little will not be discussing any off-label or unapproved medications, devices, or therapeutics

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Objectives

1. Define geriatric syndrome
2. Distinguish syndrome-based from diagnosis-based approach to resident assessment
3. List and describe the 5Ms framework for resident-centered care
4. Apply short screening tools to assess for frailty, sarcopenia, falls, and incontinence
5. List the initial work-up and management of these geriatric syndromes

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The Story of Mr. C

84 y/o cis-gender male, AL resident for the past 3 years, with PMH moderate stage Alzheimer's Disease, BPH, HTN, CAD, COPD, tobacco abuse, and CKD stage 3b. Moved into your secured memory care unit last week.

The Story of Mr. C.

Will he fall?

How strict should I be on his chronic disease targets?

Will he die soon?



How can I keep him out of the hospital?

How quickly will he decline?

Should I get therapy involved?

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The Occam's Razor in A Nutshell

Occam's Razor states that one should not multiply entities beyond the number of entities.

Required to explain entities, and being being used to explain entities is often the best one.

The principle is also known as 13th century English philosopher William of Ockham.



Occam's Razor example: You hear hoofbeats.



The answer that requires the fewest assumptions is generally the correct one.

CORE PRINCIPLES IN PALTC



OCCAM'S RAZOR

"WHEN FACED WITH TWO POSSIBLE EXPLANATIONS, THE SIMPLER OF THE TWO IS THE ONE MOST LIKELY TO BE TRUE."



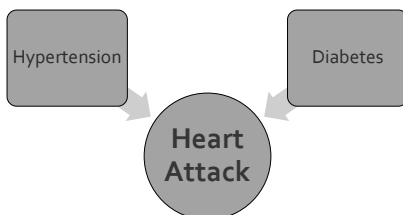
OCCAM'S Patient

"WHEN FACED WITH TWO POSSIBLE WAYS OF PRESENTING THE MORE COMPLICATED ONE TO THE ONE YOU DOLLARD, WILL MOST LIKELY DO."

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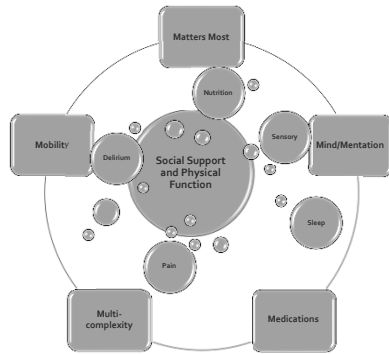
Co-Morbidity – How We Are Taught to Think



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The Geriatric Reality: 5Ms Framework

Multimorbidity: Many diseases of similar severity existing at the same time and overlapping in importance.

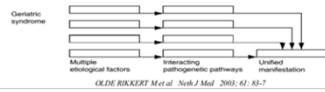


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Geriatric Syndromes

• From the Greek:

- Syn = together
- Dromos = running



- **Multifactorial** health conditions that occur when the accumulated effects of impairments in multiple organ systems render an older person **vulnerable** to situational challenges.

- Syndromes are not underlying diagnoses (although they do have ICD-10 codes for billing!)

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Geriatric Assessment

- Geriatric Assessment is a systematic, interprofessional approach to the older patient

- Diagnose **geriatric syndromes**
- Develop targeted treatment plans
- Improve patient outcomes

- Focus on function and quality of life

- Not based on chronological age but functional impairment and risk of future decline



Mobility



Mind



Medications



Multicomplexity



Matters Most

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Examples of Geriatric Syndromes

- Frailty*
- Sarcopenia*
- Falls*
- Incontinence*
- Weight loss/Anorexia of Aging
- Depression
- Delirium
- Dementia
- Polypharmacy



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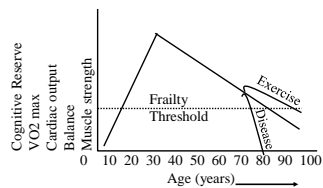
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Frailty Defined

- Frailty is a **medical syndrome** marked by reduced endurance, strength, and physiologic reserve, leading to increased **vulnerability** to functional decline, dependency, and death
- Lack of resilience when a stressor is applied to the system
- **Dynamic state**, influenced by a range of variables and losses within physical, psychological, or social domains, that increases the risk of adverse outcomes



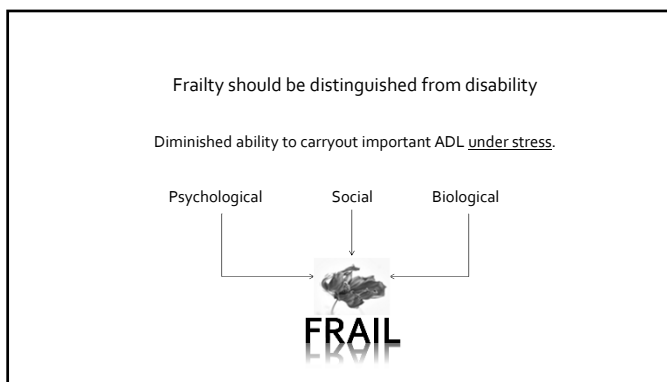
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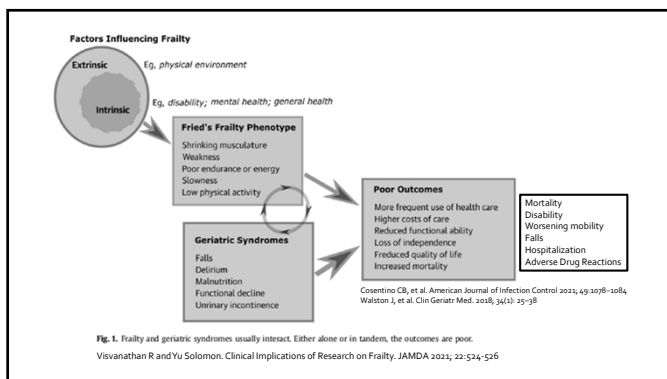
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**Value Based Care:
Frailty as a vital sign**

- Just as temperature, blood pressure, heart rate, and other conventional vital signs, frailty is a vital indicator of health.
- Clinicians need to be aware when an individual's Frailty Risk Score changes, identify what is driving those changes and generate a care plan to address those changes.

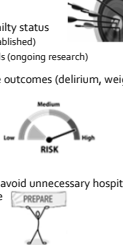


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Clinical Utility of Frailty Screening

- Chronic disease targets differ based on frailty status
 - Less stringent glycemic control (well-established)
 - Less stringent blood pressure target levels (ongoing research)
- Identify individuals at high risk for adverse outcomes (delirium, weight loss, PI)
 - Pre-operative
 - Cardiovascular interventions
 - Hemodialysis and/or transplant
 - Oncological treatments
- Optimize medication management
- Timely ACP and palliative care services to avoid unnecessary hospitalizations and futile interventions towards end of life
- Limitations to frailty screening
 - Variation in screening instruments and agreement between them to identify risks, e.g. Healthcare Associated Infections with CFS or FI but not Frailty Phenotype
 - Research to date on frailty screening has been less useful for informing clinical practice or the development of clinical interventions to prevent or treat frailty.



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Frailty Assessments

Table 2
Domains included in highly-cited frailty instruments.

Highly-cited Frailty Instrument	Physical Function (includes disability)?	Physical activity?	Cognition?	Comorbidity?	Weight loss?	Other (social, sensory, demographics, etc)?
Physical Frailty Phenotype	Yes (No)	Yes	No	No	Yes	No
Delirium Assessment Index	Yes (No)	No	Yes	Yes	No	Yes
G8 Frailty Measure	Yes (No)	No	No	No	No	No
Frailty Risk Assessment	Yes (No)	Yes	Yes	No	No	Yes
Clinical Frailty Scale	Yes (Yes)	Yes	No	Yes	No	Yes
Brief Frailty Instrument	Yes (No)	No	Yes	No	No	No
Vulnerable Elders Survey	Yes (Yes)	No	No	No	No	Yes
PRIS Scale	Yes (No)	No	No	Yes	No	No
Wingspread Screening Instrument	Yes (Yes)	No	Yes	Yes	No	Yes
Total (no. of items/instruments)	9 (8)	3	4	5	2	8

Butt BJ, Watson JD, Godwin JG, et al. Ageing Res Rev. 2016; 26:53–61.

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Selected instruments for frailty screening		
Instrument	Components	Scoring
Clinical Frailty Scale ^{4,15}	Clinical judgment, ranging from very fit to severely frail: 1 = Very fit; 2 = Well; 3 = Well, with treated medical disease; 4 = Apparently vulnerable; 5 = Mildly frail (some dependence on others for instrumental activities of daily living); 6 = Moderately frail (fully coded with instrumental and non-instrumental activities of daily living); 7 = Severely frail (total dependence on others for activities of daily living, or terminally ill)	Physician assigns score of 1 to 7 based on clinical judgment. Physicians making the initial assessment give scores to diagnoses and assessments related to these variables and other measures of comorbidity, function and associated features that inform clinical judgments about the severity of frailty. A secondary review and scoring is performed by a multidisciplinary team.
FRAIL Scale ^{16,17}	Self-reported fatigue, resistance (ability to climb a single flight of stairs), ambulation (ability to walk one block), clonus (more than five), loss of weight (more than 5%)	Score range 0 to 5. No frailty = 0 deficits. Intermediate frailty = 1 or 2 deficits. Frailty = 3 or more deficits.
Frailty Phenotype ^{11,14}	Five (5) criteria: weight loss, measured weakness, self-report exhaustion, measured slowness, low activity questionnaire	Score range 0 to 5. Frail: 3 criteria present. Intermediate or pre-frail: 1 or 2 criteria present. Robust or non-frail: 0 criteria present.
Gait Speed (in a single measure) ^{13,14}	Measured gait speed over 4 meters	Gait speed <0.8 m/s is cut point for increased risk of adverse health outcomes. Gait speed <0.7 m/s is cut point for extreme frailty.
Gonville Frailty Screening Tool ¹¹	Six questions to be answered by the practitioner/clinician about: 1) whether the patient lives alone; 2) whether the patient has lost weight; 3) whether the patient has felt over tired; 4) whether the patient has memory problems; 5) whether the patient has found it difficult to get around; and 6) whether the patient has a slow gait (<1m/s)	If the practitioner/clinician answer yes to any one of the six questions, the screening questionnaire asks for their clinical judgment on whether the patient is frail. If yes, a follow-up question is to be completed as to whether the patient is willing to be fully evaluated for frailty.
PRISMA Questionnaire ^{18,19}	Screens yes/no to self-reported questions about: 1) Age; 2) Sex; 3) Health problems that require a limit on activities; 4) Being slowed down recently; 5) Health problems that require one to stay at home; 6) Having someone to assist in dressing, eating, and 7) Regular use of an assistive device for walking.	Answering yes to three or more of the seven questions = potential disability/frailty
Timed Up-and-Go Test ^{20,21}	Measures of functional mobility (chair stand, 10 foot walk, and return the chair)	Frail = taking greater than 10s to complete the test.

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Decreasing activity

- 1 Very fit** – People who are robust, active, energetic and motivated. These people commonly exercise regularly. They are among the fittest for their age.
- 2 Well** – People who have **no active disease symptoms** but are less fit than people in category 1. Often they exercise or are very active occasionally, eg seasonally.
- 3 Managing well** – People whose medical problems are well controlled, but are not **regularly active** beyond routine walking.
- 4 Vulnerable** – While not dependent on others for daily help, often symptoms limit activities. A common complaint is being “slowed up” and/or being tired during the day.
- 5 Mildly frail** – These people often have **more evident slowing**, and need help in high order IADLs (finances, transportation, heavy housework, medications). Typically mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework.

Increasing dependency

- 6 Moderately frail** – People need help with **all outside activities** and with **keeping house**. Inside they often have problems with stairs and need help with bathing and might need minimal assistance (cuing, standby) with dressing.
- 7 Severely frail** – **Completely dependent** for personal care, from whatever cause (physical or cognitive). Even so, they seem stable and not at high risk of dying (within <6 months).
- 8 Very severely frail** – **Completely dependent**, approaching the end of life. Typically, they could not recover even from a minor illness.
- 9 Terminally ill** – Approaching the end of life. This category applies to people with a **life expectancy of <6 months**, who are **not otherwise evidently frail**.

Scoring frailty in people with dementia
The degree of frailty corresponds to the degree of dementia. Common **symptoms in mild dementia** include forgetting the details of a recent event, though still remembering the event itself, repeating the same questionnaire and social withdrawal. In **moderate dementia**, recent memory is very impaired, even though they generally can remember their past life events well. They can do personal care with prompting. In **severe dementia**, they cannot do personal care without help.

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The Simple “FRAIL” Questionnaire Screening Tool

(3 or greater = frailty; 1 or 2 = prefrail)

Fatigue: Are you fatigued?

Resistance: Cannot walk up one flight of stairs?

Aerobic: Cannot walk one block?

Illnesses: Do you have more than 5 illnesses?

Loss of weight: Have you lost more than 5% of your weight in the last 6 months?

From Morley JE, Vellas B, Abellan van Kan G, et al. J Am Med Dir Assoc 2013;14:392-397.



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Physical Performance Thresholds for Frailty

Physical Performance Measure	Threshold	Functional Correlates
Habitual Gait Speed	<0.4-0.6 m/s	Falls, Fractures, ↓ADLs, incontinence
Timed Chair Stands	> 14 sec	Falls, Fractures, ↓ADLs, incontinence
Tandem Stand	<3 sec	↓ADLs
Grip Strength	<27 kg	↓ADLs

Guralnik, et al. J Geront-Med Sci 1994;49:M85-M94; Guralnik, et al. NEJM 1995; 332:556-564; Tinetti, et al. JAMA 1995;273:1348-1353; Judge, et al. J Am Geriatr Soc 1996;44:1332-1341.

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FIGURE A1. Physical Frailty Scale—final prototype.

Note: Permission to use the copyrighted Physical Frailty Scale can be obtained by visiting the website: www.mcgill.ca/geriatrics/research.

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FRAIL-NH

	0	1	2
Fatigue	No	Yes	PHQ-9 ≥ 10
Resistance	Independent Transfer	Set Up	Physical Help
Ambulation	Independent	Walker	Not Able/WC
Incontinence	None	Bladder	Bowel
Loss of Weight	None	yes	xxxx
Nutritional Approach	Regular Diet	Mechanically Altered	Feeding Tube
Help with Dressing	Independent	Set Up	Physical Help
Total			0-13

Nonfrail (0-5), Pre frail (6-7), Frail (≥ 8)

Kaehr E, Viswanathan R, Malmstrom TK, Morley JE. Frailty in Nursing Homes: The FRAIL-NH Scale.
J Am Med Dir Assoc 2015;16(2):87.

The most frequent cut-off for defining frail and most frail residents were ≥ 2 and ≥ 6 , respectively.

When applying these definitions, between 15.1% and 79.5% of residents were frail, while 28.5% to 75.0% of residents were most frail.
Liu SJ, et al. J Nutr Health Aging 2023; 25(10): 5205-16

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FRAIL-NH

J Nutr Health Aging 2023;25(10):5205-16
Published online October 17, 2023 | <https://doi.org/10.1007/s12603-023-01864-3>
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Review

The FRAIL-NH Scale: Systematic Review of the Use, Validity and Adaptations for Frailty Screening in Nursing Homes

S.J. Liu^{1,2}, S. Lalle^{1,2}, R. Viswanathan^{1,2}, L.A. Dowse¹, J.S. Bell^{1,2}

Overall, the FRAIL-NH scale demonstrated good agreement with other well-established but more complex frailty scales.

- ✓ Does not require use of specific instruments (e.g. dynamometer to measure handgrip strength) or gait speed
- ✓ Utilizes routinely collected data in NHs.
- ✓ Specialist training is not required to administer FRAIL-NH.
- ✓ Can be retrospectively applied to existing datasets

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The FRAIL-NH Scale: Systematic Review of the Use, Validity and Adaptations for Frailty Screening in Nursing Homes

S.J. Liu^{1,2}, S. Lalle^{1,2}, R. Viswanathan^{1,2}, L.A. Dowse¹, J.S. Bell^{1,2}

Over a median follow-up of 12 months, FRAIL-NH scores were predictive of

- mortality
- falls
- hospitalization
- length of hospitalization
- functional or cognitive decline

Clinically-relevant medication associations

- Multiple antihypertensive use was associated with increased mortality among most frail residents
- Statin use was associated with fall-related hospitalizations in mild moderate and most frail residents.
- Among *non-users* of statins, fall-related hospitalizations were lowest in the frailest subset.

FRAIL-NH could guide development of individualized care plans to prevent falls, hospitalization and mortality

Using FRAIL-NH to detect pre-frail residents may help direct interventions to prevent functional dependence.



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The Story of Mr. C

84 y/o cis-gender male, AL resident for the past 3 years, with PMH moderate stage Alzheimer's Disease, BPH, HTN, CAD, COPD, tobacco abuse, and CKD stage 3b. Moved into your secured memory care unit last week.


FRAIL-NH

	0	1	2
Fatigue	Yes	No	PHQ-9 ≥ 10
Resistance	Independent	Set Up	Physical Help
Ambulation	Independent	Walker	Not Able/WC
Incontinence	None	Minor	Bowel
Loss of Weight	None	Yes	xxxx
Nutritional Approach	Regular Diet	Mechanically Altered	Feeding Tube
Help with Dressing	Independent	Set Up	Physical Help
Total			0-13

Nonfrail (0-5), Prefrail (6-7), Frail (8-13)

Gait Speed with walker 0.3 m/s

What next?



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Operationalizing Frailty Prevention and Treatment

- Education of residents and families – manage expectations, ACP
- Function and deficits focused, not disease focused
- Patient-focused care planning
- Manage and document unavoidable decline
- Frailty-based acuity scores to define facility case-mix

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PHYSICIAN PROGRESS NOTE WHEN DECLINE OCCURS

Per state surveyor perspective

- **Keep it simple.**
- If decline is occurring, **and**, upon your review of current frailty status-score, your own clinical assessment, and current treatment plan, and, per your best clinical judgment, you determine current decline is unavoidable, state that in your progress note.
- Mention key potential reversible frailty deficits treating for, efficacy of current plan. Mention any new treatments for potentially reversible deficits.
- Discuss current frailty status, current decline, and treatment plan with resident-family and mention this discussion in your progress note. Indicate in note, resident-family's level of understanding of current status and acceptance of treatment plan.

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PHYSICIAN PROGRESS NOTE WHEN DECLINE OCCURS

Per state surveyor perspective

Example: This resident's most recent level of frailty has advanced with time, age. Most recent frailty score was 52 on the Frailty Index we have been using since her admission, up from 48. There is a decline in her mobility and transfer abilities. Current decline is unavoidable, per assessed frailty status. Will continue to try treatments to address those frailty deficits which are potentially reversible. The most pressing deficit is fatigue. Treating fatigue with new targeted PT program to increase muscle mass, adding additional calories to all meals, to enhance nutritional intake, and new C-PAP regimen for recently diagnosed sleep apnea. Discussed current frailty status with resident and family, discussed what deficits are potentially treatable. Resident and family, daughter, agreed to new plan of care.

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Operationalizing Frailty: Risk Meetings, Best Practices

- At least weekly discussion of highest risk residents in the population.
- Current status, progress;
 - Any new stressors (medical, infection, environmental, possible procedures etc.)
 - Changes in usual patterns: (sleep, oral intake, functional changes, cognitive changes)
- Input from Direct care and licensed nursing staff, resident, family, Medical Director, Pharmacist, Social Services, Dietary, Activities, Therapy input, true IDT team.
- Based on assessment-discussion above, as appropriate new interventions identified
- Any barriers to providing existing treatment plan identified
- IDT Risk Note written immediately in progress notes summarizing above
- Care plan, physician orders, updated immediately
- Care plan changes communicated to floor staff via huddles alert messaging, updating electronic care plan, electronic kardexes, other communication methods.

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"...a logical path forward would embrace a "both-and" approach, rather than "either-or." Measured by phenotype or index, frailty is highly predictive of adverse outcomes for older adults, including hospitalizations, falls, disability, institutionalization, and mortality.

Even if face-to-face clinical assessments outperformed EHR-based and other automated measures, there remains the question of scalability: the modest number of geriatricians in the United States cannot possibly assess the frailty status of the millions of adults aged 65 and older or even 75 years."

"I would propose nephrology as our metaphor. As a first-pass, automated tool, creatinine and estimated glomerular filtration rate (eGFR) guide much of our clinical decision-making, even without knowing the underlying nephropathology. Similarly, an EHR-based frailty index can identify which older adults merit a reappraisal—consideration of our clinical even if the "cause" of frailty is not yet clear."

Kathryn E. Callahan MD, MS
Department of Internal Medicine, Section on Gerontology and Geriatric Medicine
Wake Forest School of Medicine
Winston-Salem, North Carolina
The future of frailty: Opportunity is knocking. J Am Geriatr Soc. 2022;70:78-80.

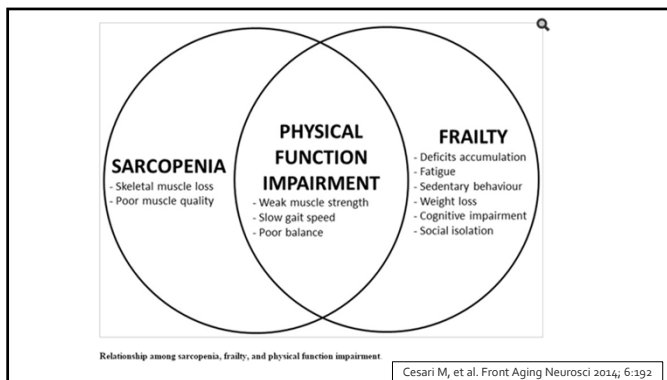
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Falls and Sarcopenia

- Sarc = flesh
- Penia = poverty

Decrease in muscle structure AND function

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Falls and Sarcopenia

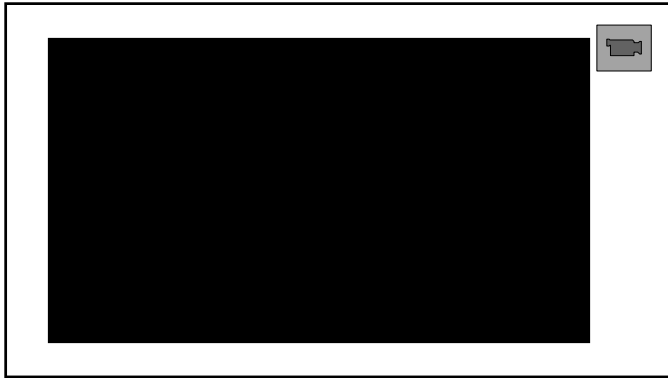
Table 1: SARC-F Screen for Sarcopenia

Component	Question	Scoring
Strength	How much difficulty do you have in lifting and carrying 10 pounds?	None = 0 Some = 1 A lot or unable = 2
	How much difficulty do you have walking across a room?	None = 0 Some = 1 A lot, use aids, or unable = 2
Rise from a chair	How much difficulty do you have transferring from a chair or bed?	None = 0 Some = 1 A lot or unable without help = 2
	How much difficulty do you have climbing a flight of ten stairs?	None = 0 Some = 1 A lot or unable = 2
Falls	How many times have you fallen in the last year?	None = 0 1-3 falls = 1 4 or more falls = 2

From Malmstrom TK, Morley JE. J Frailty and Aging 2013;2:55-6.

Score > 4 is positive

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The Story of Mr. C

84 y/o cis-gender male, AL resident for the past 3 years, with PMH moderate stage Alzheimer's Disease, BPH, HTN, CAD, COPD, tobacco abuse, and CKD stage 3b. Moved into your secured memory care unit last week.

Gait Speed with walker 0.3 m/s

FRAIL-TLH7 (Preform)

Table 1. SARC-F Screen for Sarcopenia

Component	Question	Scoring
Strength	How much difficulty do you have in lifting and carrying 10 pounds?	None = 0 Slight = 1 A lot or unable = 2
Avoidance in walking	How much difficulty do you have walking across a room?	None = 0 A few steps, or unable = 2
Rise from a chair	How much difficulty do you have transferring from a chair to bed?	None = 0 Slight = 1 A lot or unable without help = 2
Climb stairs	How much difficulty do you have climbing a flight of ten steps?	None = 0 Slight = 1 A lot or unable = 2
Falls	How many times have you fallen in the last year?	0 falls = 0 1 fall = 1 2 or more falls = 2

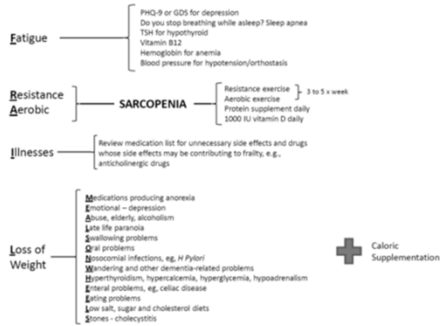
From Melstrom TK, Mosley JE. J Frailty and Aging 2013;2:55-6.



What next?

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Initial Work-up and Management of Frailty, Sarcopenia, and Weight Loss



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Group Exercise
PT evaluation
Restorative aides

Polypharmacy reduction
High-risk medication reduction
Consultant pharmacy review

Matching activities to interests
Providing choices
Advance care planning

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The Story of Mr. C

In the first two weeks after admission, Mr. C had two non-injury falls in his room. One was in the middle of the night and one following lunch. Both times, he was found between his bed and the bathroom and had been incontinent of urine.

The Mr.

FRAIL-NH

	0	1	2
Fatigue	No	Yes	PHQ-9 ≥ 10
Resistance	Independent	Set Up	Physical Help
Ambulation	Independent	Wither	Not Able/WC
Incontinence	None	yes	Bowel
Loss of Weight	None	yes	xxxx
Nutritional Approach	Independent	Mechanically Altered	Feeding Tube
Help with Dressing	Independent	Set Up	Physical Help
Total			0-13

Nonfrail (0-5), Pre frail (6-7), Frail (8-13)

Kavali G, Vasanthaiah K, Mahalingam M, Marudhi R. Frailty in Nursing Homes: The FRAIL-NH Scale. J Adv Nurs. 2019;103(10):1007-1017.

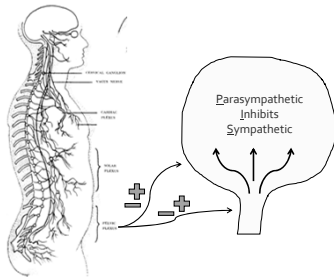
Gait Speed with walker 0.3 m/s

What next?



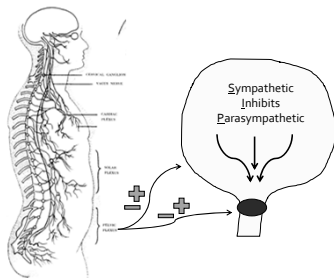
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Incontinence

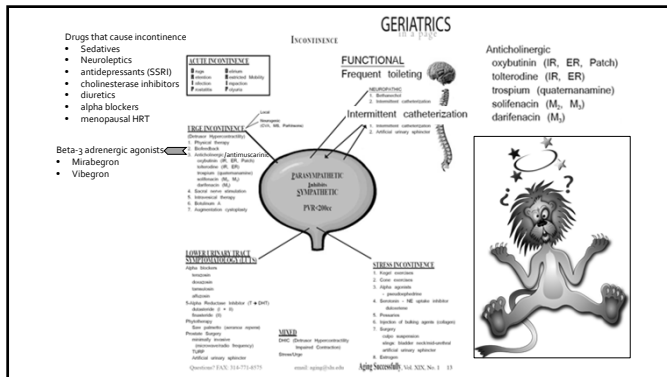


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Incontinence




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Kaplan's Pearls



- Screen for geriatric syndromes at least every 6 months in LTC
 - FRAIL-NH and SARC-F are quick screens
 - Anyone with high FRAIL-NH or SARC-F scores should have a fall reduction plan in place
 - Frailty status can help identify risk and guide decision-making
- Consider forming a high-risk Frailty interprofessional team meeting to prevent and address decline in high-risk residents
- Avoid antimuscarinics in urinary incontinence due to anticholinergic side effects. Instead...
 - Focus on deprescribing and non-pharmacologic management
 - Use Beta-3 adrenergic agonists as first line medications (Vibegron if risk of malignant hypertension)
- The 5Ms Framework belongs in PALTC too!

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QUESTIONS?



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