Atypical Presentation – Part II

- Atypical Presentation in Acutely Ill Older Adults
- Head to Toe Assessment
- General Weakness/FTT
- The Frailty Syndrome/Phenotype

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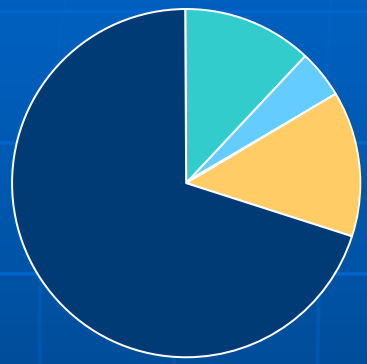
Physical Examination

Younger	Older
	“The Other Hand”
	Vision, hearing
	Skin status
	Lying/standing BP

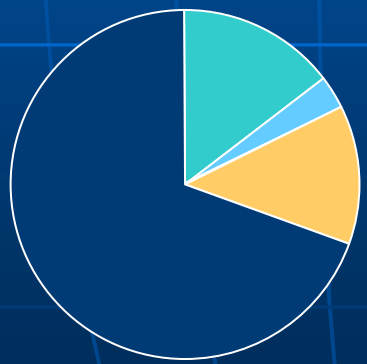
Physical Assessment

Younger	Older
	Hydration status
	Protein malnutrition
	Balance & Gait, walking speed
	Establish cognitive baseline, mental state
	Grip Strength
	Environment!!

Oral vs. Aural vs. Rectal



- Rect Feb, Tymp Afeb
- Rect Feb, Tymp Afeb <1C
- Rect Afeb, Tymp Feb
- Rect Feb Tymp Feb
- Rect Afeb, Tymp Afeb



- Rect Feb, Oral Afeb
- Rect Feb, Oral Afeb <1C
- Rect Afeb, Oral Feb
- Rect Feb, Oral Feb
- Rect Afeb, Oral Afeb

Malnutrition

- Anthropometric indices
- Grip strength or subjective assessment of muscle mass

- Intake Hx

- Swallowing assessment
- Strategies to boost intake

Baseline Investigations

- CBC, E7, U/A & C/S
- CXR, EKG, troponin
- CPK if fall

- TSH, albumin, Ca, PO4, Mg, B12

- CT head

Atypical Presentations Follow-up

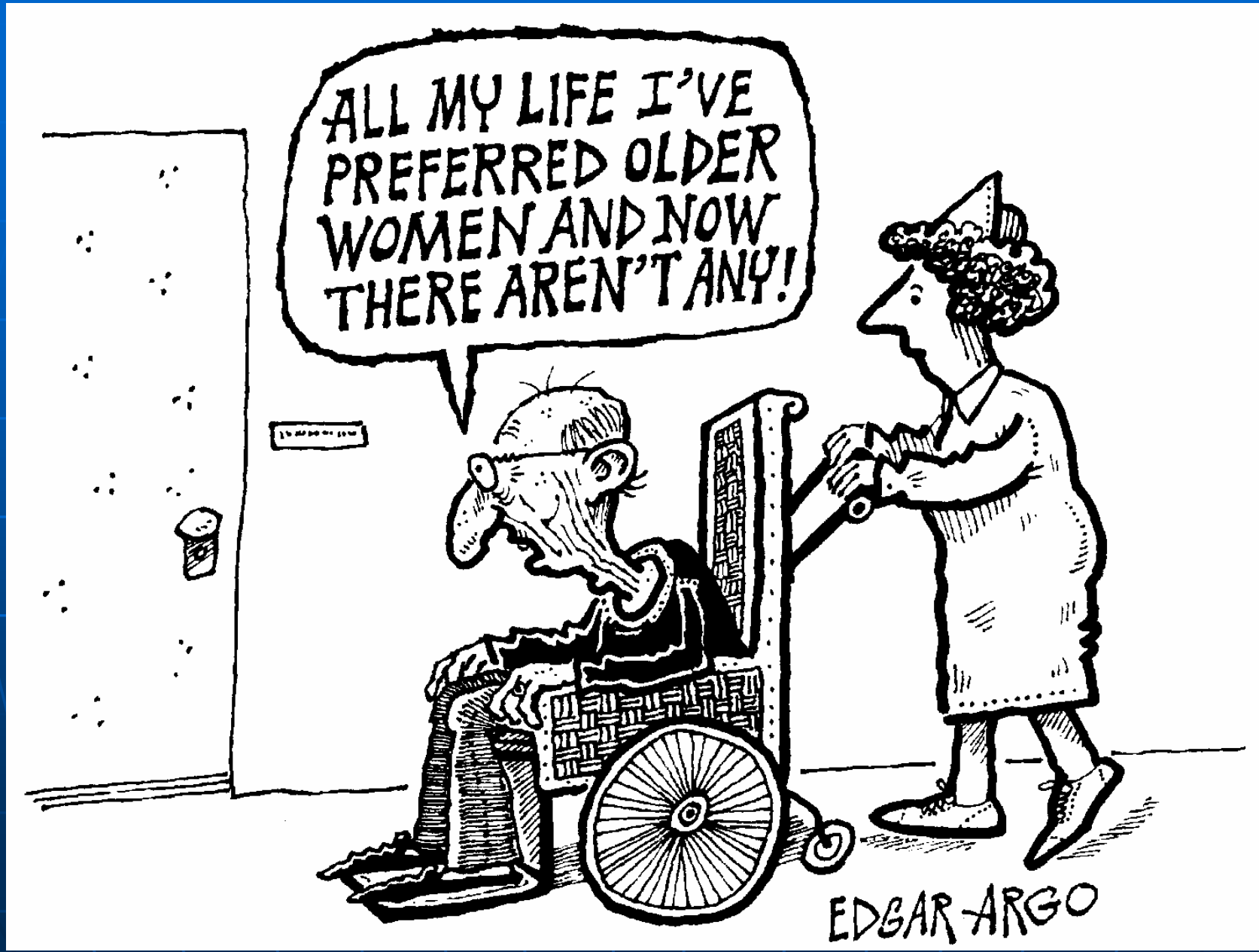
- Need to identify cause, and provide management
- “Simple” – delirium, due to hyponatremia
- “Complex” – “faller” with malnutrition, chronic pain and excess medication use

General Weakness / Failure to Thrive

- “not the red light”, but around the planet 17,000 times
- Summation of deficits, characterised by diagnostic difficulty, BUT ALSO limited or slow response to all forms of therapy

The “Difficult” FTT

- Mental State: dementia, delirium, depression
- CHF
- Occult Tumour
- Underestimating Pain/Immobility
- Hormonal: e.g. hypogonadism
- Role of Renal Disease


ALL MY LIFE I'VE PREFERRED OLDER WOMEN AND NOW THERE AREN'T ANY!
EDGAR ARGO

Infections In The Elderly

UTI and bacteruria in the Elderly

- UTI's most common type of infection
- Most frequent cause of gram-negative bacillary sepsis
- Frequency of bacteriuria in ambulatory:
  - 10% to 30%: women
  - 5% to 10%: men
- Frequency of bacteriuria in LTC:
  - 25% to 50%: women
  - 15% to 20%: men

Asymptomatic bacteriuria

- $\geq 10^5$ CFU/mL bacteria in urine
- not associated with clinical signs and symptoms of infection
- frequently transient or intermittent. Often pyuria is lacking as well
- long-term sequelae of asymptomatic bacteriuria unclear
- In the absence of chronic urinary obstruction, asymptomatic bacteriuria in aging adults should not be treated with antibiotics
- Adjunctive Rx's e.g. cranberry, oestrogen

Clinical Presentation

- An uncomplicated, symptomatic community-acquired UTI can present with fever, dysuria, frequency, and urgency, or, less typically, as weakness and fatigue, anorexia, or change in mental status.

Clinical Presentation

- Complicated UTI's - structural or functional abnormalities of the urinary tract
- Frequently caused by organisms that are resistant to different antibiotics. C/S essential
- May recur with either relapse or reinfection and may require prolonged treatment of 4 to 6 weeks

Pneumonia

Pneumonia

- Leading infectious cause of mortality in the elderly
- Fourth leading cause of mortality in those over age 75
- Compared with younger adults, the elderly have a five- to tenfold increased risk of developing pneumonia

Pneumonia

- Majority secondary to micro- or macro-aspiration of oral pharyngeal flora in patients with compromised host defenses (e.g., diminished cough reflex, waning cellular immunity)
- Causes of pneumonia differ from younger – gram negative more likely, *S. pneumoniae* still most likely in more active community patients
- Hospital-acquired pneumonia more likely to be caused by mixed flora
- oropharyngeal colonization by staphylococci and aerobic gram-negative bacilli increases with decreasing functional status and increasing level of care

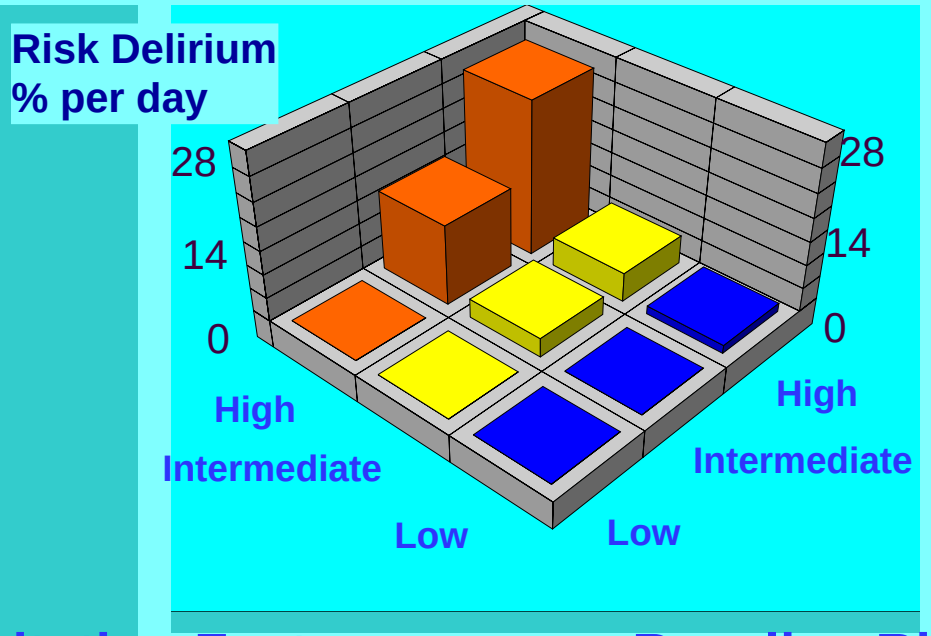
Pneumonia

- Diagnosis masked: esp. in debilitated elderly patients
- Cough and fever may be diminished or absent
- Tachypnea and tachycardia are sensitive but not specific findings
- Atypical:
  - altered mental status
  - decline in functional status
- Physical examination often no signs of consolidation
- CHF/COPD confound
- CXR with Hx and PX often
- Higher mortality rates for pneumonia in the elderly should not discourage aggressive therapy in appropriate patients – outcomes can be comparable in selected patients to younger pts

Heart Failure

- Heart failure - most common reason for hospitalization and recurrent hospitalization in patients over 65 years of age
- Incidence of new cases approximately doubles with each decade from age 45 to age 84. After age 85, the incidence of new cases increases four- to six-fold.
- Commonly, elderly patients with heart failure who become mildly symptomatic during exertion tend to curtail their daily activities and become relatively asymptomatic. Therefore, in elderly patients, the diagnosis of clinical heart failure is usually made at a later stage in the disease process than in middle aged and younger patients.

Interrelationship of Baseline & Precipitating Factors



Precipitating Factors

- Use Physical Restraints
- Malnutrition
- >3 Meds Added
- Indwelling catheter
- Any Iatrogenic Event

Baseline Risks

- Impaired Vision
- Severe Illness
- Cognitive Impairment
- High BUN/CR


NURSE
PRIEST
LAWYER
Kilgore

Frailty

- State of high vulnerability for adverse health outcomes, including disability, dependency, falls, need for LTC, and mortality

Frailty – interchangeable syndromes??

- Disability: Difficulty or dependency in carrying out activities essential ot independent living
- Comorbidity: concurrent presence of two or more medically diagnosed diseases – high prevalence – doesn't account for impact of each comorbidity
- Frailty

Evolving Definitions of Frailty

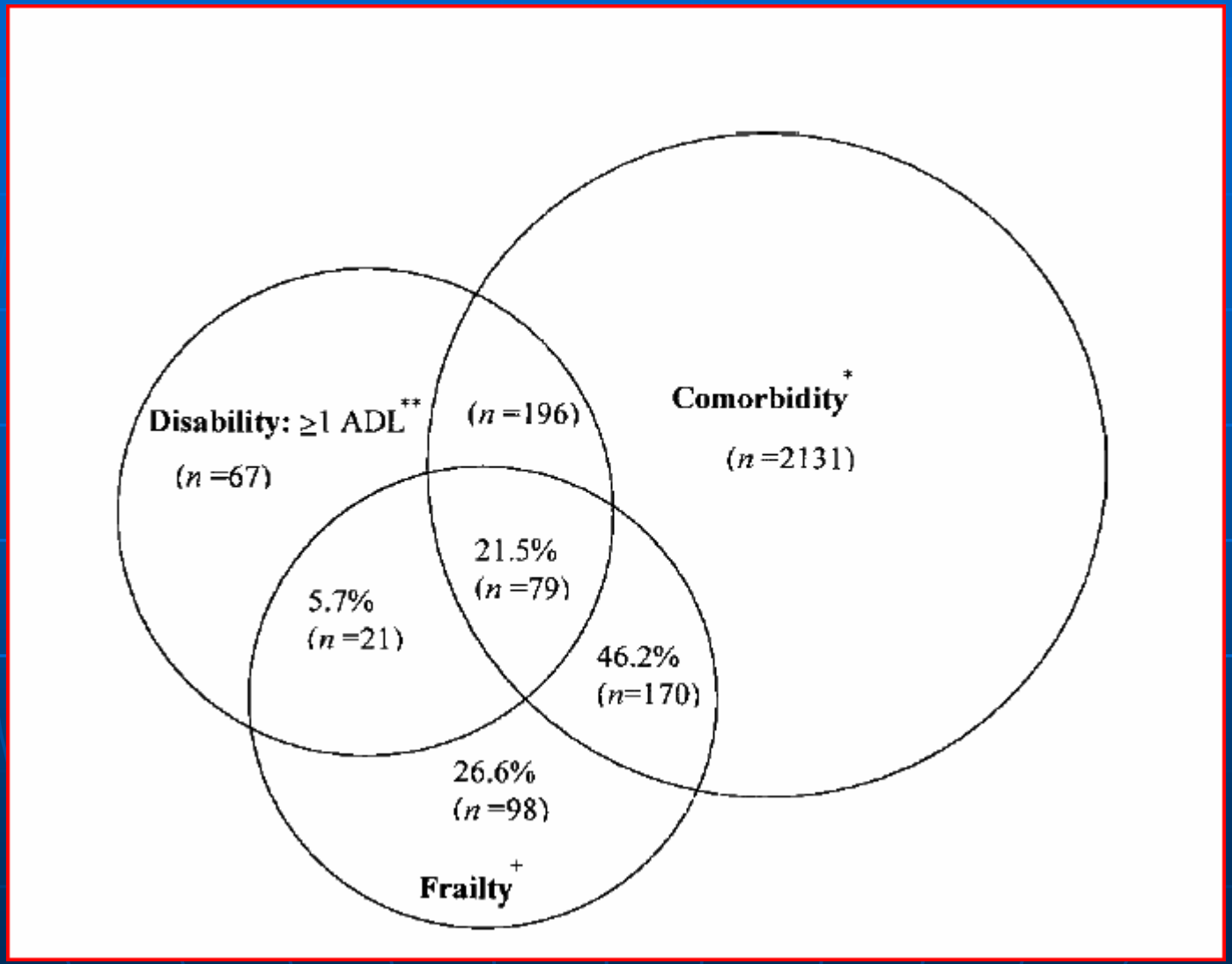
- >5 meds
- Dementia
- Incontinent
- Falling
- Needing personal care
- Residential care

- recent weight loss
- self-reported exhaustion
- poor grip strength
- slow walking speed
- low physical activity

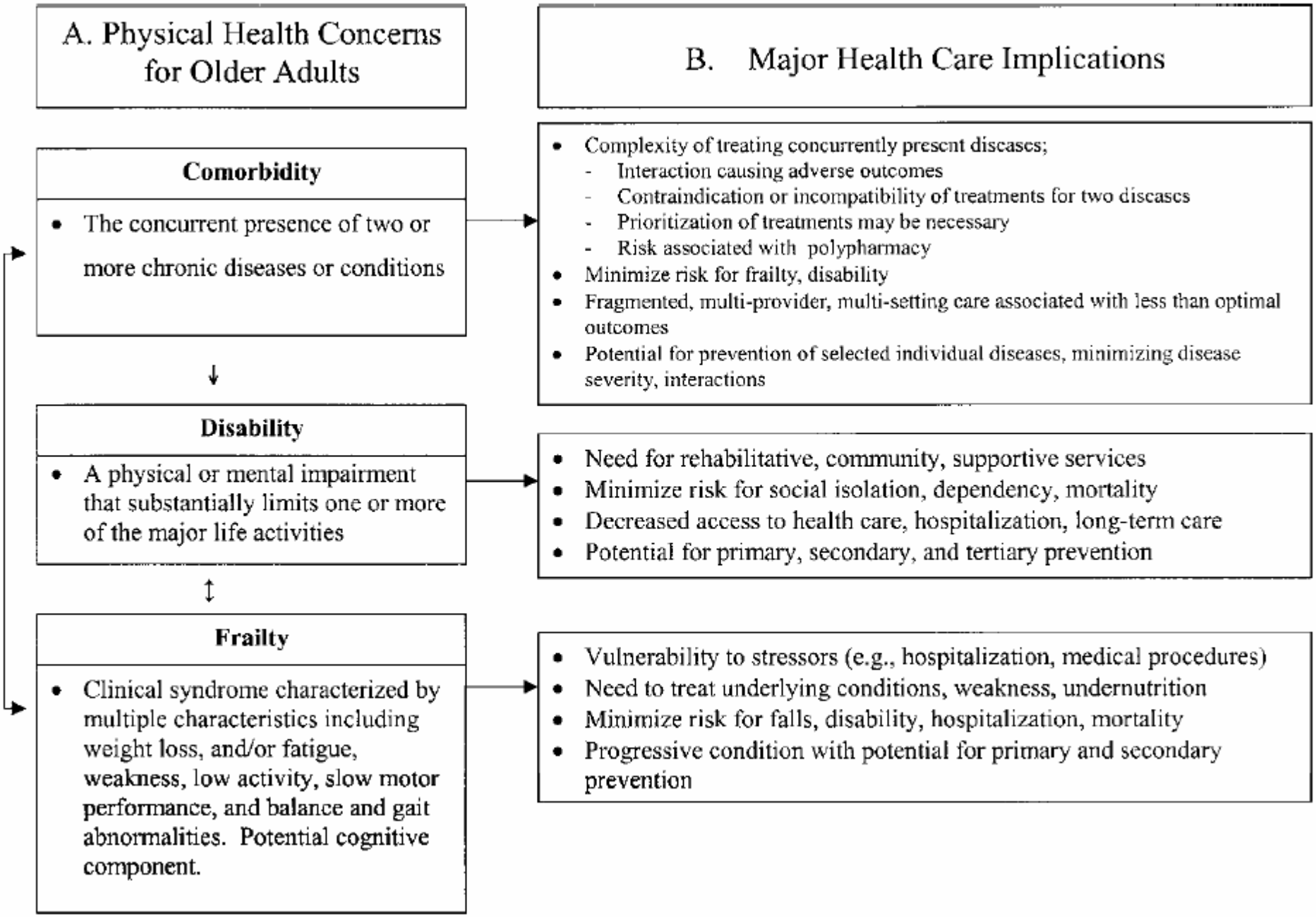
Frailty vs. the ISAR

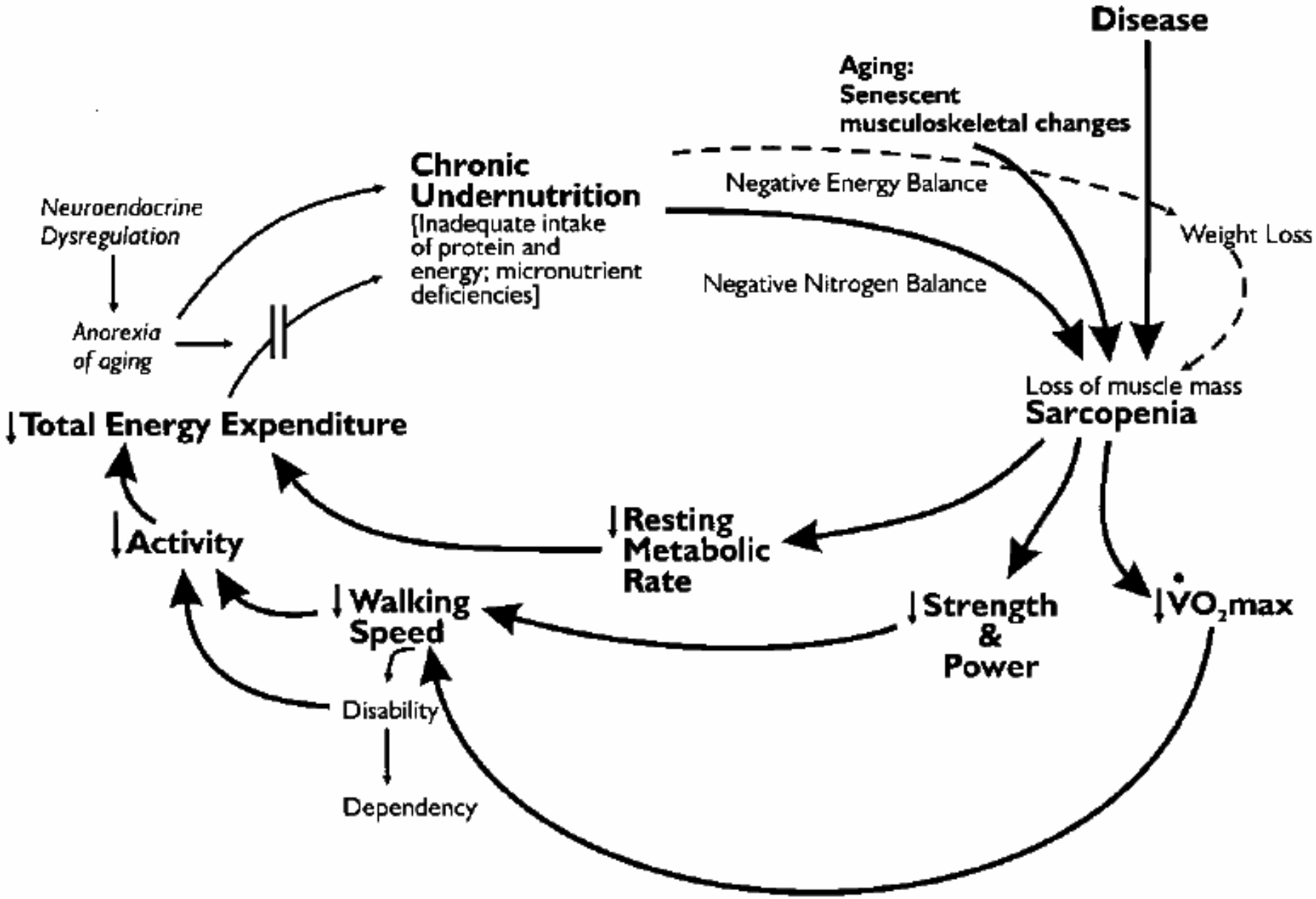
- recent weight loss
- self-reported exhaustion
- poor grip strength
- slow walking speed
- low physical activity

- Pre-morbid function
- Acute function
- Hospitalization in last 6 months
- Visual impairment
- Memory impairment
- >3 medications

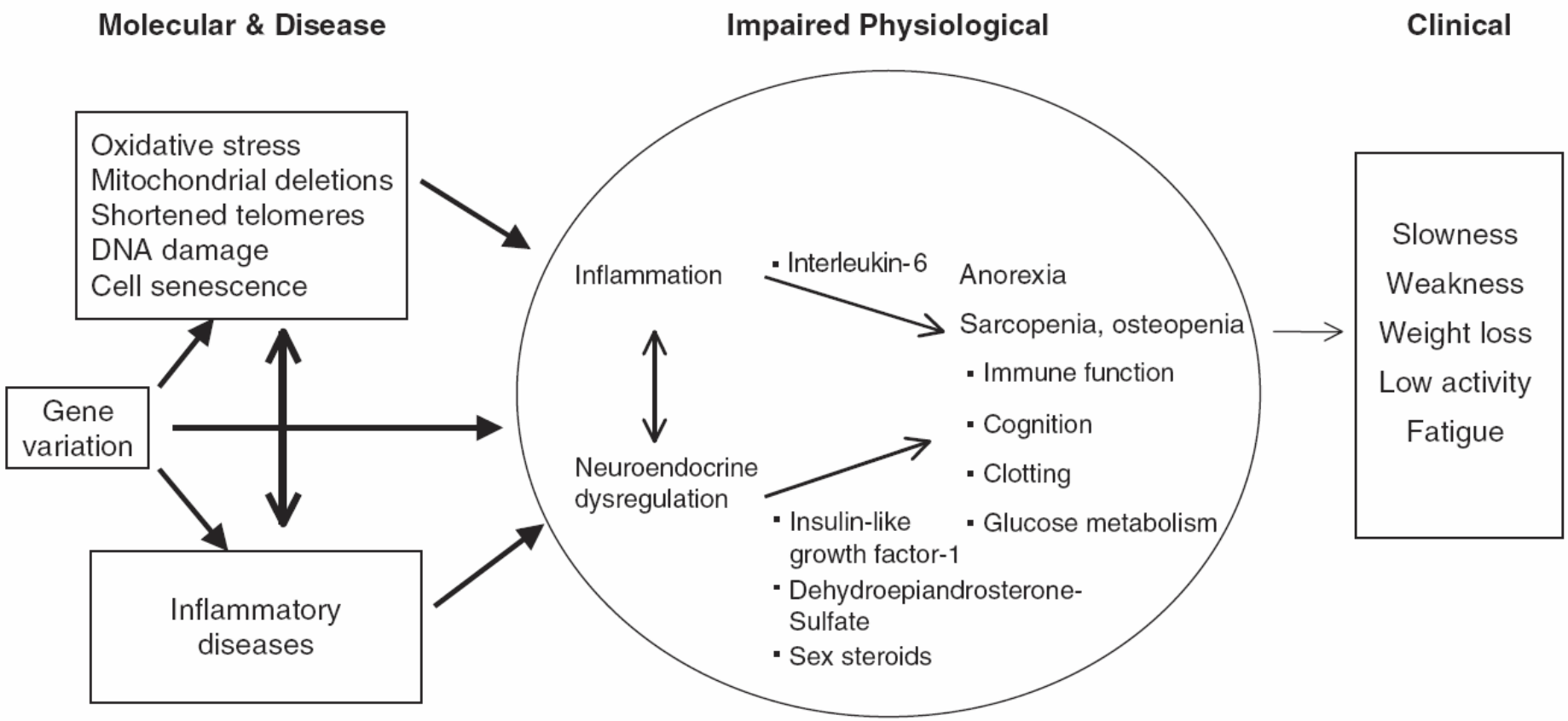


Cardiovascular Health Study
N=2762


A. Physical Health Concerns for Older Adults
B. Major Health Care Implications
Comorbidity
The concurrent presence of two or more chronic diseases or conditions
Complexity of treating concurrently present diseases;
Interaction causing adverse outcomes
Contraindication or incompatibility of treatments for two diseases
Prioritization of treatments may be necessary
Risk associated with polypharmacy
Minimize risk for frailty, disability
Fragmented, multi-provider, multi-setting care associated with less than optimal outcomes
Potential for prevention of selected individual diseases, minimizing disease severity, interactions
Disability
A physical or mental impairment that substantially limits one or more of the major life activities
Need for rehabilitative, community, supportive services
Minimize risk for social isolation, dependency, mortality
Decreased access to health care, hospitalization, long-term care
Potential for primary, secondary, and tertiary prevention
Frailty
Clinical syndrome characterized by multiple characteristics including weight loss, and/or fatigue, weakness, low activity, slow motor performance, and balance and gait abnormalities. Potential cognitive component.
Vulnerability to stressors (e.g., hospitalization, medical procedures)
Need to treat underlying conditions, weakness, undernutrition
Minimize risk for falls, disability, hospitalization, mortality
Progressive condition with potential for primary and secondary prevention


Disease
Aging:
Senescent
musculoskeletal changes
Chronic
Undernutrition
[Inadequate intake
of protein and
energy; micronutrient
deficiencies]
Negative Energy Balance
Weight Loss
Neuroendocrine
Dysregulation
Negative Nitrogen Balance
Anorexia
of aging
Loss of muscle mass
Sarcopenia
↓Total Energy Expenditure
↓Activity
↓Resting
Metabolic
Rate
↓Walking
Speed
↓Strength
&
Power
↓$\dot{V}O_2$max
Disability
Dependency

Overview of hypothesized molecular, physiological, and clinical pathway to frailty



Lower Extremity Function and Subsequent Disability

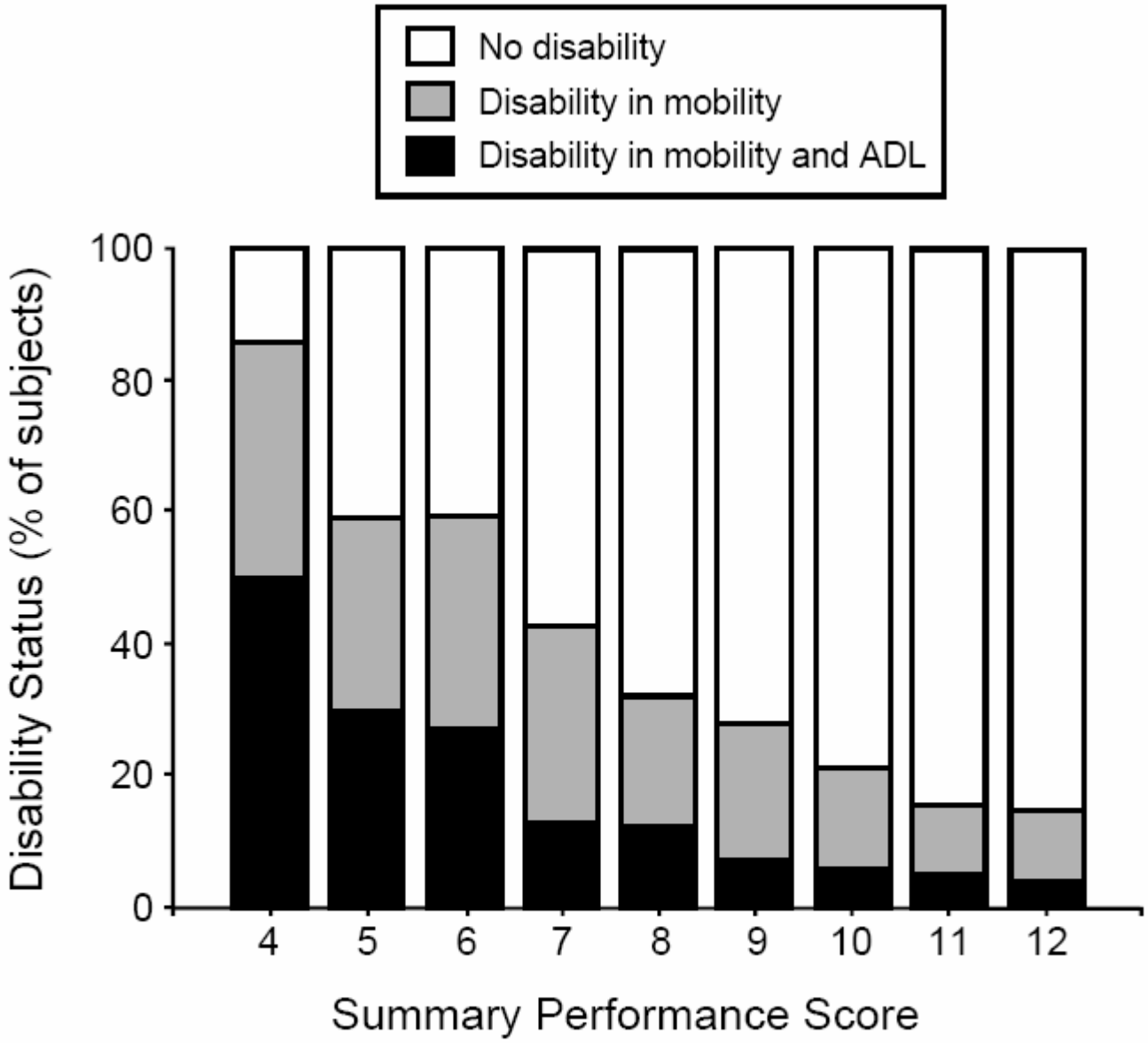


Figure 1. Disability Status at Four Years According to the Base-Line Summary Performance Scores among 1121 Subjects with No Disability at Base Line.

Guralnik JM, 1995

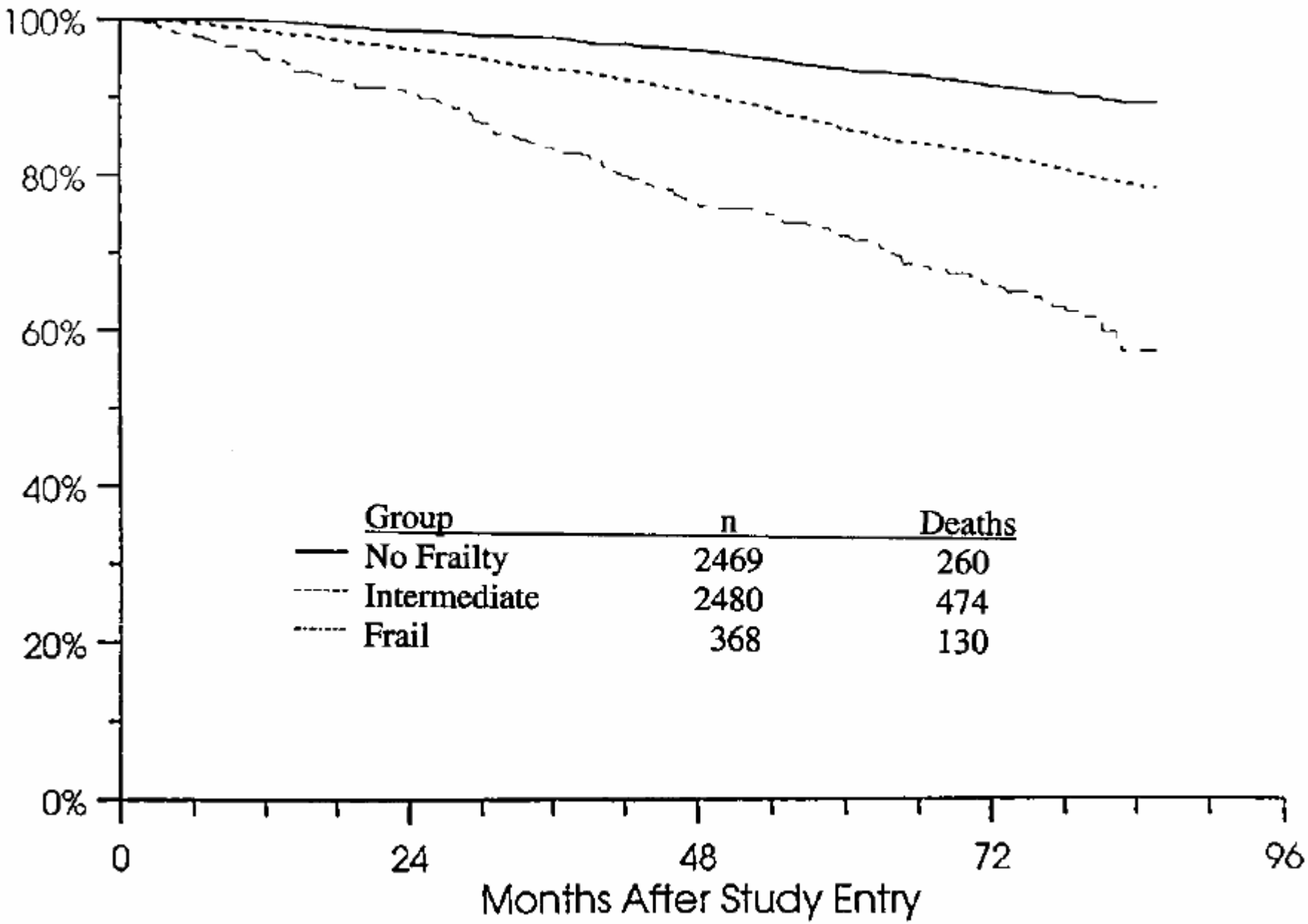
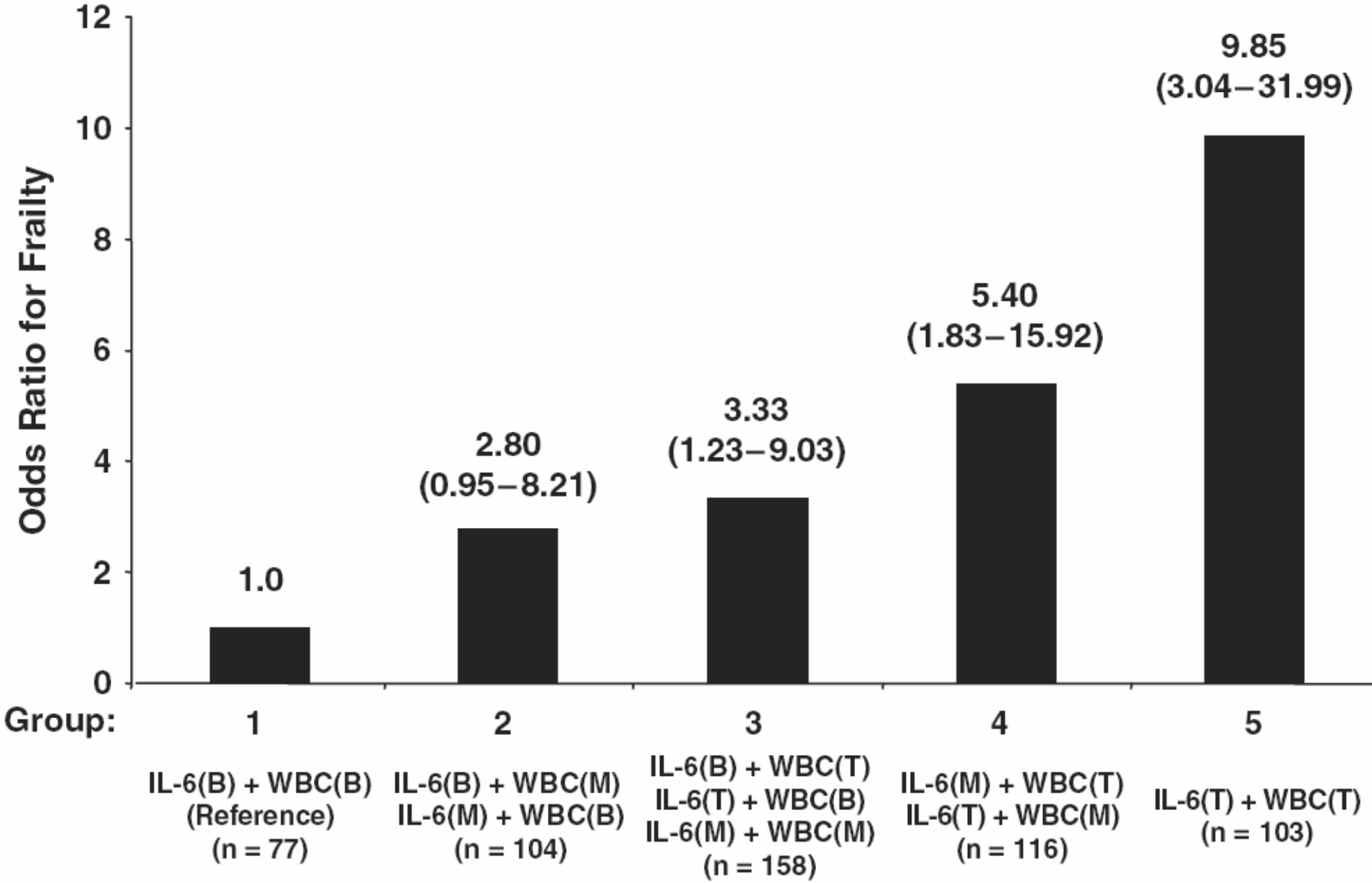

100%
80%
60%
40%
20%
0%
Group
n
Deaths
No Frailty
2469
260
Intermediate
2480
474
Frail
368
130
0
24
48
72
96
Months After Study Entry

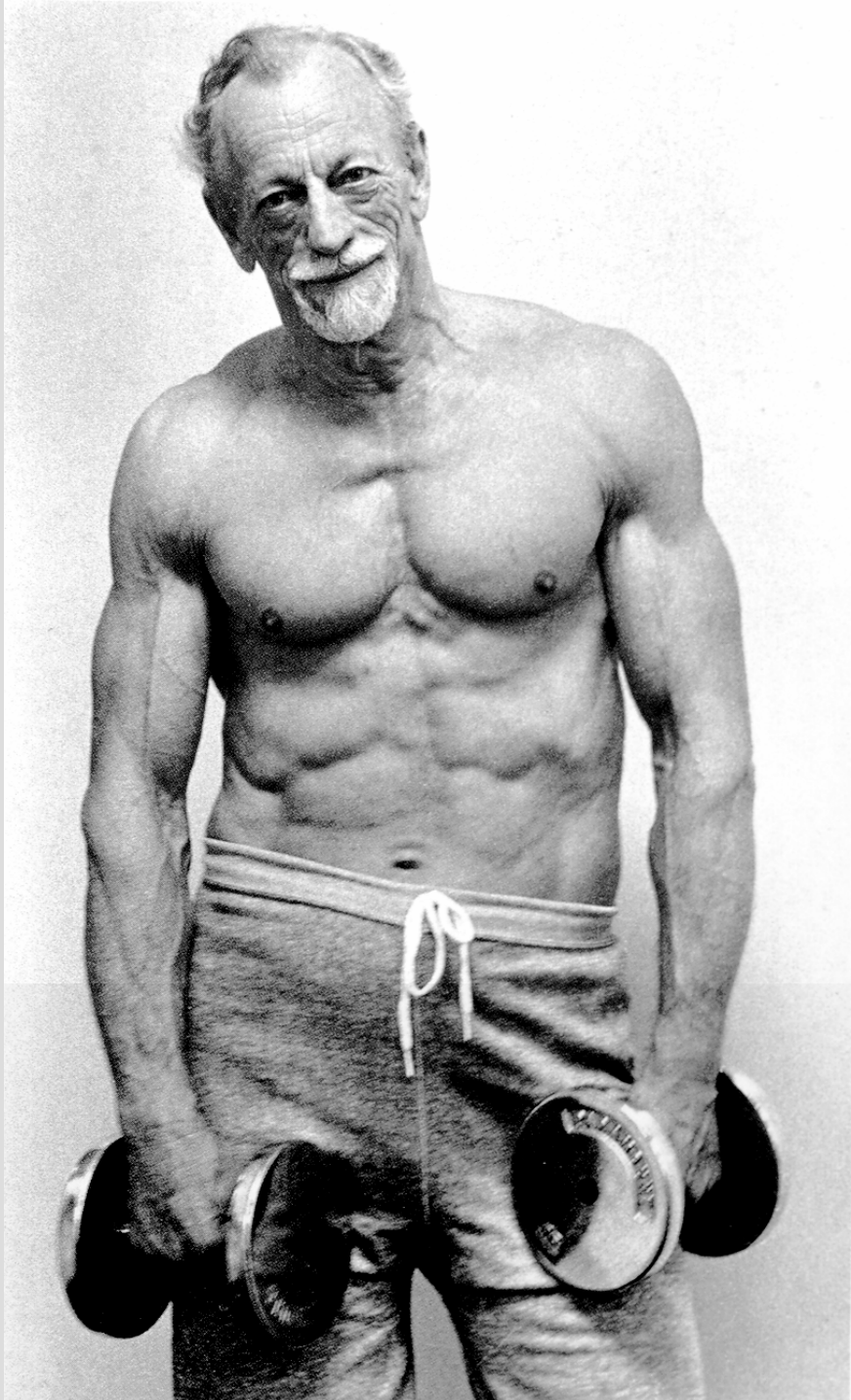
Table 5. Baseline Frailty Status Predicting Disability, Falls, Hospitalizations, and Death over 3 Years: Community-Dwelling Men and Women Aged 65 Years and Older, Cardiovascular Health Study

	Hazard Ratios* Estimated Over 3 Years Frail*** (Versus Not Frail)
Worsening mobility disability	1.50**
Worsening ADL disability	1.98**
Incident fall	1.29**
First hospitalization	1.29**
Death	2.24**


Odds Ratio for Frailty
12
10
8
6
4
2
0
1.0
2.80
(0.95–8.21)
3.33
(1.23–9.03)
5.40
(1.83–15.92)
9.85
(3.04–31.99)
Group:
1
2
3
4
5
IL-6(B) + WBC(B)
(Reference)
(n = 77)
IL-6(B) + WBC(M)
IL-6(M) + WBC(B)
(n = 104)
IL-6(B) + WBC(T)
IL-6(T) + WBC(B)
IL-6(M) + WBC(M)
(n = 158)
IL-6(M) + WBC(T)
IL-6(T) + WBC(M)
(n = 116)
IL-6(T) + WBC(T)
(n = 103)

Summary

- Atypical Presentation - ?predictable
- Physiological Instability
- Features in Hx and Px
- UTI, pneumonia, cardiac
- Investigations
- Approach to the “Difficult” FTT
- Frailty



Additional Slides

What is Frail?

- recent weight loss
- self-reported exhaustion
- poor grip strength
- slow walking speed
- low physical activity

Fried, Linda

Systolic vs. Diastolic Heart Failure

- Type of ventricular dysfunction found different between elderly and younger
- Approximately 40% to 50% of elderly patients with heart failure have normal left ventricular systolic function with predominantly diastolic dysfunction

Cardiac Ischaemia and MI

- **Angina and equivalents**
  - Exertional angina - most common manifestation of myocardial ischemia in young and middle-aged
  - In elderly, dyspnea also common
  - Asymptomatic, although silent ischemia also frequent - demonstrable by stress testing or Holter monitoring.

Cardiac Ischaemia and MI

- **Acute MI**
  - **45% of MIs were silent or unrecognized**
  - **percentage increased with the patient's age in males (Framingham)**
  - **Instead of chest pain, elderly patients more commonly complain of dyspnea or have vague symptoms of confusion, abdominal pain, or generalized weakness at the time of acute MI.**
  - **Main cause of death in elderly patients**

Factors that contribute to the atypical presentation of infection in the elderly

- *Underreporting of illness*
- *Compromised cognition*
- *Coexisting diseases* mask
- *Altered physiologic responses*

Table 4 Association of frailty criteria with development of new-onset dependence in activities of daily living

Frailty criteria		Incidence rate of dependency (per 100 person-years)	Unadjusted hazard ratio (95% confidence interval)	Adjusted hazard ratio* (95% confidence interval)
Number				
0		7.7	1.0	1.0
1		11.7	1.54 (0.96–2.48)	1.33 (0.82–2.16)
2		16.7	2.21 (1.40–3.49)†	1.62 (1.00–2.60)†
3		25.2	3.40 (2.12–5.45)†	2.23 (1.34–3.71)†
4–5		37.9	5.18 (3.09–8.67)†	2.38 (1.33–4.25)†
Specific criteria				
Shrinking	No	13.3	1.0	1.0
	Yes	27.9	2.15 (1.65–2.80)†	1.60 (1.20–2.12)†
Weakness	No	12.8	1.0	1.0
	Yes	18.7	1.47 (1.14–1.88)†	1.06 (0.81–1.39)
Slowness	No	8.6	1.0	1.0
	Yes	20.6	2.45 (1.83–3.28)†	1.96 (1.43–2.70)†
Low physical activity	No	12.0	1.0	1.0
	Yes	23.1	1.95 (1.54–2.48)†	1.44 (1.12–1.87)†
Exhaustion	No	15.5	1.0	1.0
	Yes	19.5	1.26 (0.94–1.70)	0.94 (0.67–1.31)

*Adjusted for age, race, education, self-reported health status, baseline difficulty with ≥ 1 activities of daily living, baseline difficulty walking one-quarter mile or up 10 steps, presence of ≥4 chronic conditions, Mini-Mental State Examination score, Geriatric Depression Scale score, and hospitalization.

†*P* value <.05.