Assessing Functional Status, Frailty and Fall Risk in the Older Adult with Cancer

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Objectives

- Define and relate functional status, frailty and falls to the care of the older person.
- Identify functional status, frailty and fall risk screening tool appropriate for clinical practice (inpatient and outpatient).
- Identify three types of recommendations based on functional status, frailty and fall risk screening tools.

Functional Status

- The extent to which a person can perform basic and more complex tasks which are central to independence (Rubenstein et al., 1984).

Functional Status Assessment and Importance to Oncology Care

- Functional status is predictive of other problems such as:
  - Falls (Overcash & Beckstead, 2008).
  - Longer hospital stays (Partridge et al., 2015, Gilardi et al., 2018).
  - Disease-related symptoms (Whitson et al., 2009).
  - General health status (Kutner, Zhang, Huang, & Painter, 2015).
  - Mortality in one year of cancer diagnosis (Schmidt et al. 2018).

Functional Status and Importance to Oncology Care

- Functional Status tends to decline for patients treated for lung, breast, colorectal cancers in the first year post-diagnosis, which may be due to cancer treatments (Petrick et al. 2014).
- Cognitive impairment is associated with poor functional status (Ramnath et al, 2018).

Importance of Functional Status Assessment
Classic Studies

- Functional status, and not chronological age, is an important indicator of cancer treatment tolerance (Garman & Cohen, 2002; Chen et al., 2003)
- Changes in functional status may help determine cancer treatment tolerance or disease progression (Given et al., 2001; Wyrwich & Wolinsky, 2000)
- Assessment of physical function can identify those patients who have an increased risk of hospitalization (Wyrwich & Wolinsky, 2000).

When Functional Status Diminishes…

Functional Reserve (Balducci, 2007)

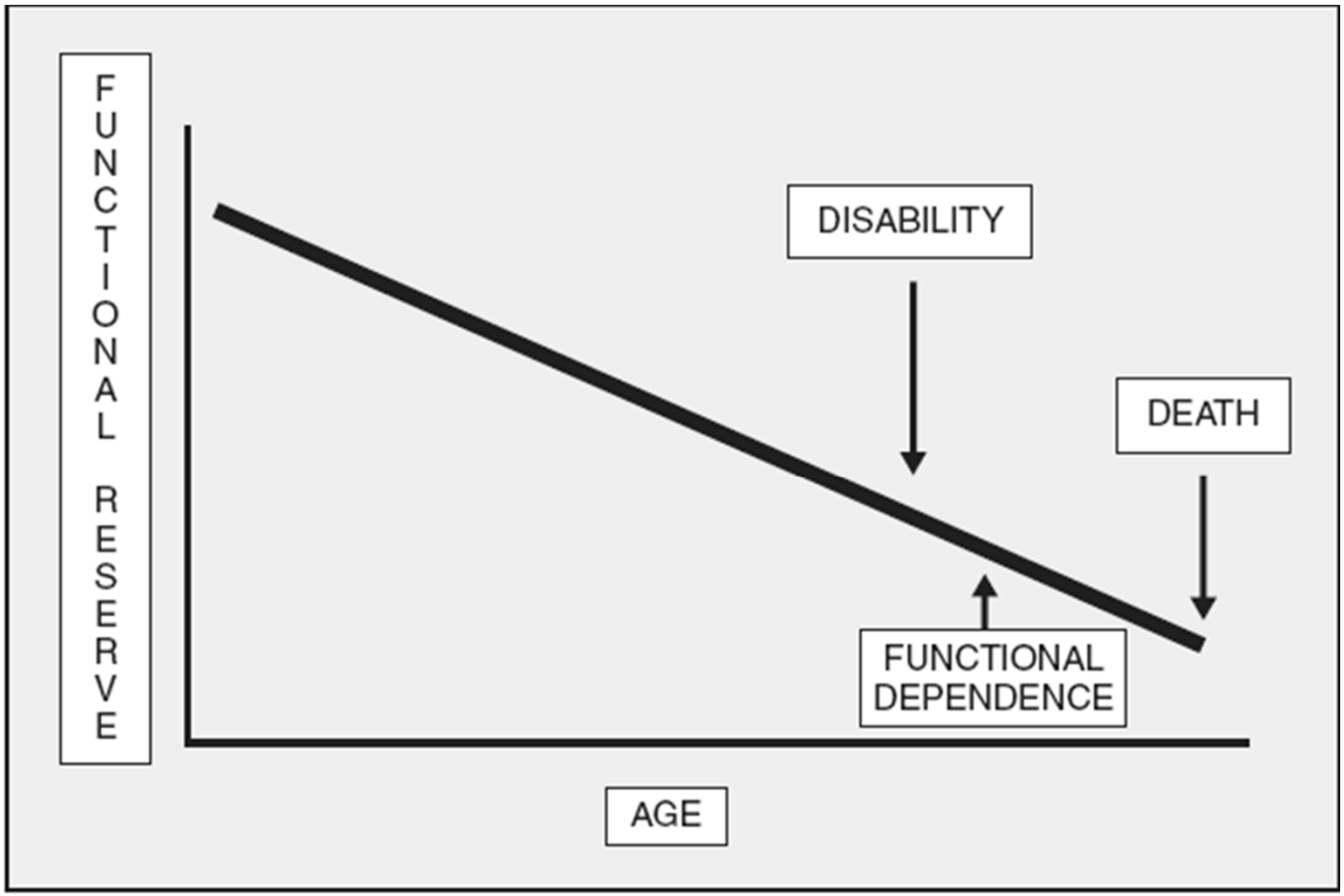


Fig 1. — The trajectory of aging.

Assessing for Functional Status Deficit

Functional Assessment Instruments

- Activities of Daily Living/Instrumental Activities of Daily Living (Katz, 1970), (Lawton, 1969).
- Timed Up & Go (Podsiadlo & Richardson, 1991).
- Grip Strength (Kim, et al., 2015).
- Barthel Activity Index (Wade & Collin, 1988).
- Balance, Gait, Chair Stands Performance Battery (Bernabeu-Mora, et al., 2015).

Management Options for Functional Deficits (Fairhall et al., 2011).

- Functional deficits can be mitigated.
- Support should be individually tailored to address each underlying problem.
- Support should be delivered over time in the presence of acute health events.
- Intervention should aim to improve physical, cognitive and social functioning and extend frail older individuals' length of time in independence.

Interventions for Functional Deficits

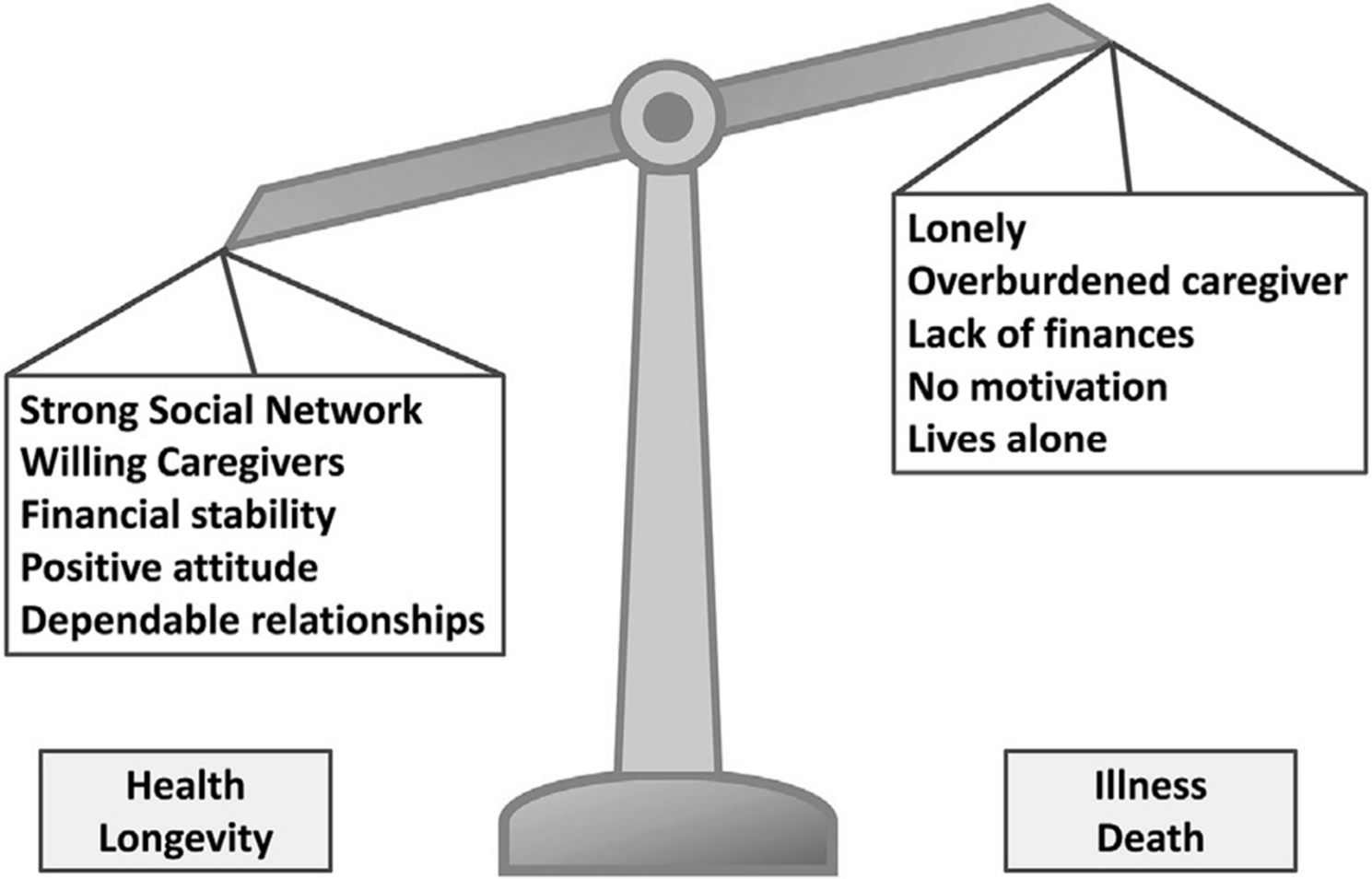
- Hospitalized Elders
  - Staff education in general geriatrics results in 14% more discharges to home (versus nursing home) minimal ADL loss and a decrease in pressure ulcers (Lee et al. 2013).

Interventions for Functional Deficits

- Hospitalized Elders
  - Acute Care Units for Elders reduced length of stay (X 1 day) and maintained functional abilities while hospitalized (Barnes, et al., 2012).

Frailty

Resilience
Robinson et al. 2015



Resilience
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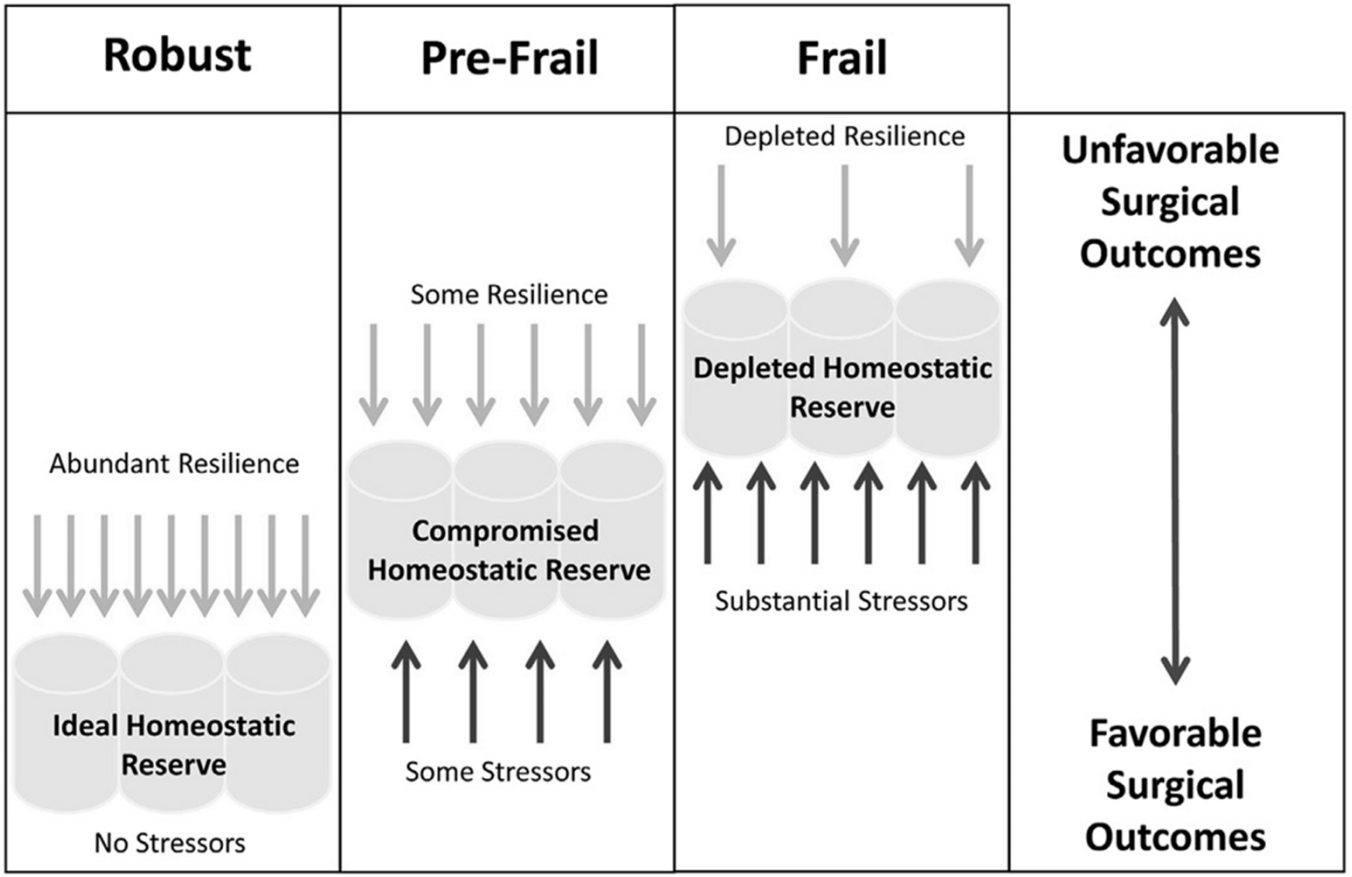


Frailty

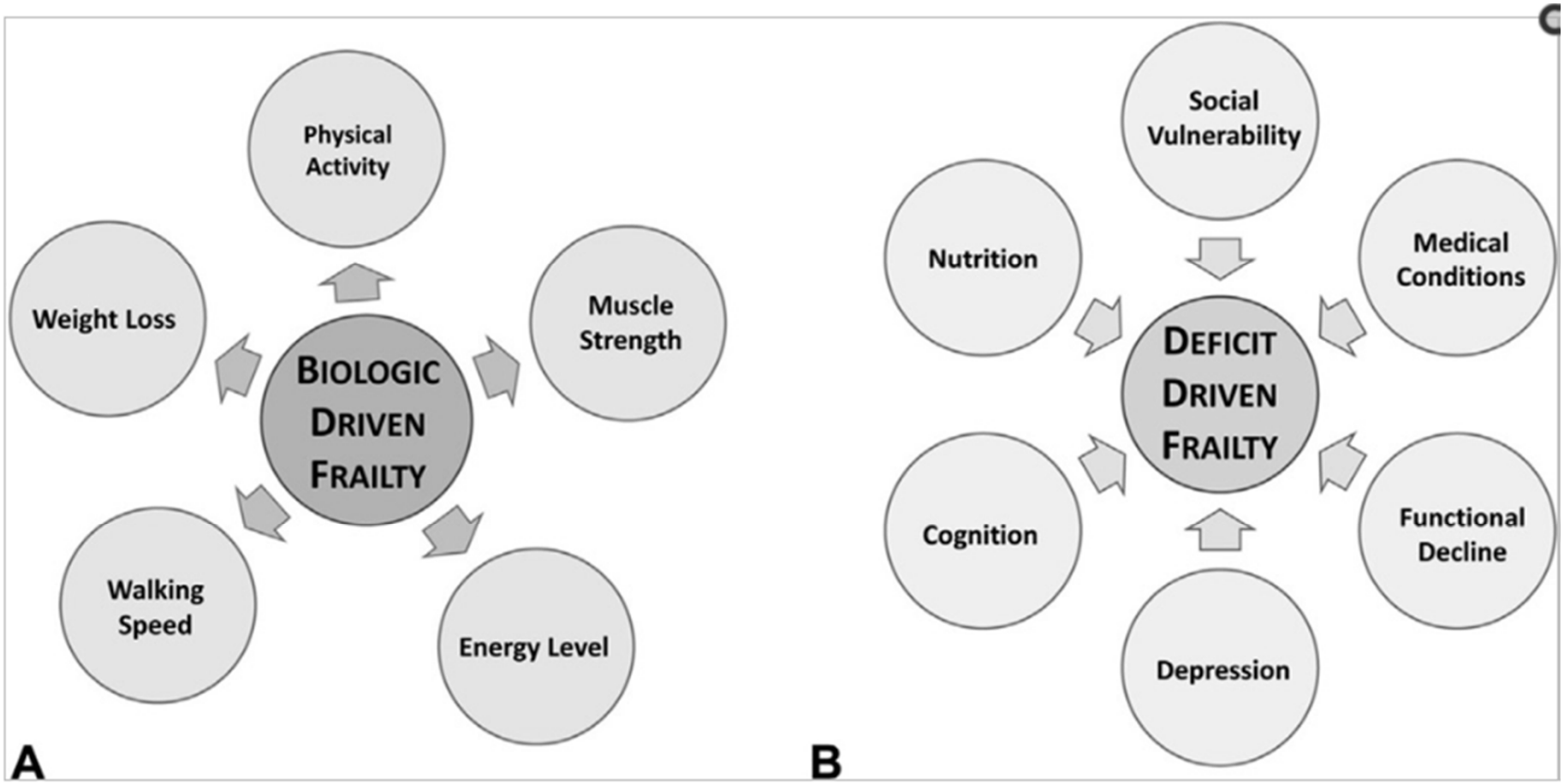
- Descriptors (Fried et al. 2001)
  - Syndrome
  - Disability
  - Comorbidity
  - Age
  - Deconditioning
  - Cognitive Decline
  - Dependence
- Descriptors (Rockwood, 2011).
  - Accumulation of deficits
  - Risk of adverse health outcomes
  - Diminished ability to respond to stress

Frailty

- Frailty is a predictor of mortality and hospitalizations (Gilardi et al., 2018).
- Sleep disturbances are associated with frailty (Moreno-Tamayo, et al. 2018).
- Low impact exercise is effective in the treatment of frailty (Sahin et al., 2018).
- Resistance training is effective in increasing the strength of frail elders (Nagai, K., et al., 2018).

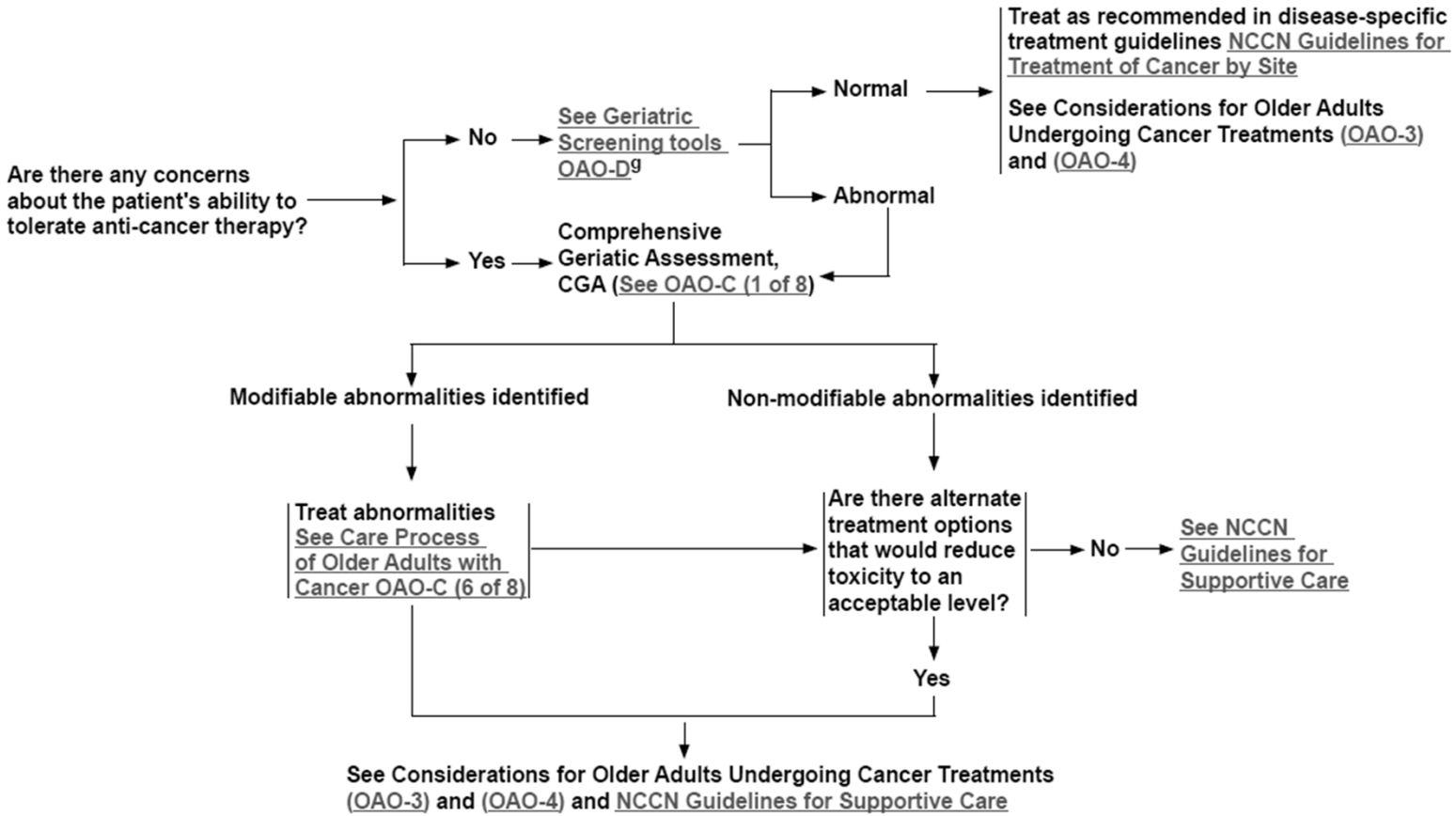
Biologic Frailty and Deficit Frailty

Robinson, et al. 2015



How does frailty impact cancer care?

PRE-TREATMENT EVALUATION



Measuring Frailty

- The Frail Scale (Abellan et al. 2008)
  - F Fatigue (Are you fatigued?)
  - R Resistance (Can you climb 1 flight of stairs?)
  - A Ambulation (Can you walk 1 block?)
  - I Illness (Greater than 5)
  - L Loss of weight (Greater than 5%)

Phenotypic Frailty (Fried 2001, Chow et. al 2012)

Table 4. Phenotypic Frailty: 10 to 15 Minutes[8,15]

Criteria and scoring	Measurement
Frailty criteria	
Shrinking (weight loss)	≥10-pound weight loss in past year
Weakness	Grip strength in lowest 20% based on sex and BMI
Exhaustion	Self-reported exhaustion
Slowness	Walking speed over 15 feet in lowest 20%
Low activity	Kilocalories per week expended in lowest 20%
Scoring for surgical patients[8]	
Robust	0 or 1 abnormalities
Intermediate or pre-frail	2 or 3 abnormalities
Frail	4 or 5 abnormalities

Deficit Accumulation Index (Rockwood, et al., 2005)

Table 5. Deficit Accumulation Frailty Index — Range Of Time

Frailty characteristic	Measurement
Mobility	Walking speed
	Number of falls in past six months
Cognition	History of dementia
	Mini-Cog Test or Mini-Mental Status Exam
Function	Dependence in activities of daily living
	Dependence in instrumental activities of daily living
Exhaustion	Energy level
	Tiredness
Burden of chronic disease	Charlson Index
	> 5 chronic medications
Nutritional status	>10 lbs weight loss in past 6 months
	Low albumin
	Poor appetite
Mood	Depression
	Sadness
	Anxiety
Social vulnerability	Presence of social support
	Lack of interactions with other people

Common strategies to score an accumulation of deficits frail score are twofold: (1) Sum the number of abnormal characteristics and reference to published "cutoff" score; and (2) calculate the ratio of abnormal frail characteristics and divide by the number of total assessed characteristics.

Falls and Fall Risk

Falls and Fall Risk

- Falls are an unplanned descent to the floor (or extension of the floor) resulting in injury or no injury. Falls include assisted and unassisted falls. *Joint Commission's Implementation Guide for the National Quality Forum Endorsed Nursing-Sensitive Care Performance Measures.*

Falls

- Pain, fatigue and other symptoms of cancer treatment may enhance the fall risk in older cancer patients (Wildes & Fiala, 2018; Holley, 2002).
- Approximately 50% of adults with advanced cancer will fall while hospitalized (Stone et al 2012).
- 17% of cancer patients fall within 6 months of a cancer diagnosis (Huang, et al., 2017; Puts et al 2012).
- One out of three adults age 65 and older fall each year, but less than half tell their healthcare providers (Haousshoff et al 2001).

Falls and Cancer in Community-Dwelling Seniors

- Approximately, 23% of seniors diagnosed with cancer experience a fall
  - receiving chemotherapy 31%
  - in general geriatrics 45% (Overcash, 2007).
- Active seniors who perform vigorous activity have increased rates of falls (Kelsey, et al 2013).
- Cancer survivors who fall, reported a lower QOL (Pandya et al., 2016).

Risk Factors for Falls for Community-Dwelling Seniors

- For people ages 65 and older, most falls occur in or around the home (Nevitt 1989; Wilkins 1999).
- Being female (Baker 1992; Tromp 1998).
- Being white (Baker 1992).
- Having had a previous fall (AGS 2001).
- Having lower body weakness or gait or balance problems (Stenhagen, et a. 2012).

Risk Factors for Falls for Community-Dwelling Seniors

- Being cognitively impaired (Tromp 2001).
- Wearing shoes with thick, soft soles (e.g., jogging shoes) (Robbins 1994).
- Taking more than four medications or using psychoactive medications (Cumming 1998).

Risk for Fall in Hospitalized Elders

- Decompensation
- Delirium
- Pain
- Fatigue
- Not always related to age…..

Model of Factors Associated with Prior Falls Among Older Adults with Cancer

- Poor functional status
- Poor performance status
- Depression
- Multiple medications
- Poor renal function

- Wildes et al. 2018

Assessment

- Falls
  - TUAG
  - Berg Balance Scale (Berg et al., 1992).
  - Observation of gait (Tinetti et al. 1994)

Interventions for Functional Status, Frailty and Falls

- Physical Therapy/Occupational therapy
- Pre-fall education
- Mind Body Movement Exercise
  - Tai Chi (Galantino et al., 2013)
- Weight bearing exercise (Zhu et al., 2016)
- Muscle strengthening, balance, flexibility exercises 30 minute, X2/week for 1 year in cognitively impaired patients improved balance (Kovacs et al., 2013).
- Cognitive motor training increases balance (Kao et al., 2018)

Conclusion

- Assessment of functional status, frailty and falls are central in caring for the older person with cancer.
- Management of functional limitations, falls and frailty are important to the care of the older person with cancer.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