Clinical Decision Making in Vascular Surgery When Caring for Frail and Vulnerable Adults: Is it Ethical to Not Offer Them an Operation?

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PACIFIC NORTHWEST ENDOVASCULAR CONFERENCE

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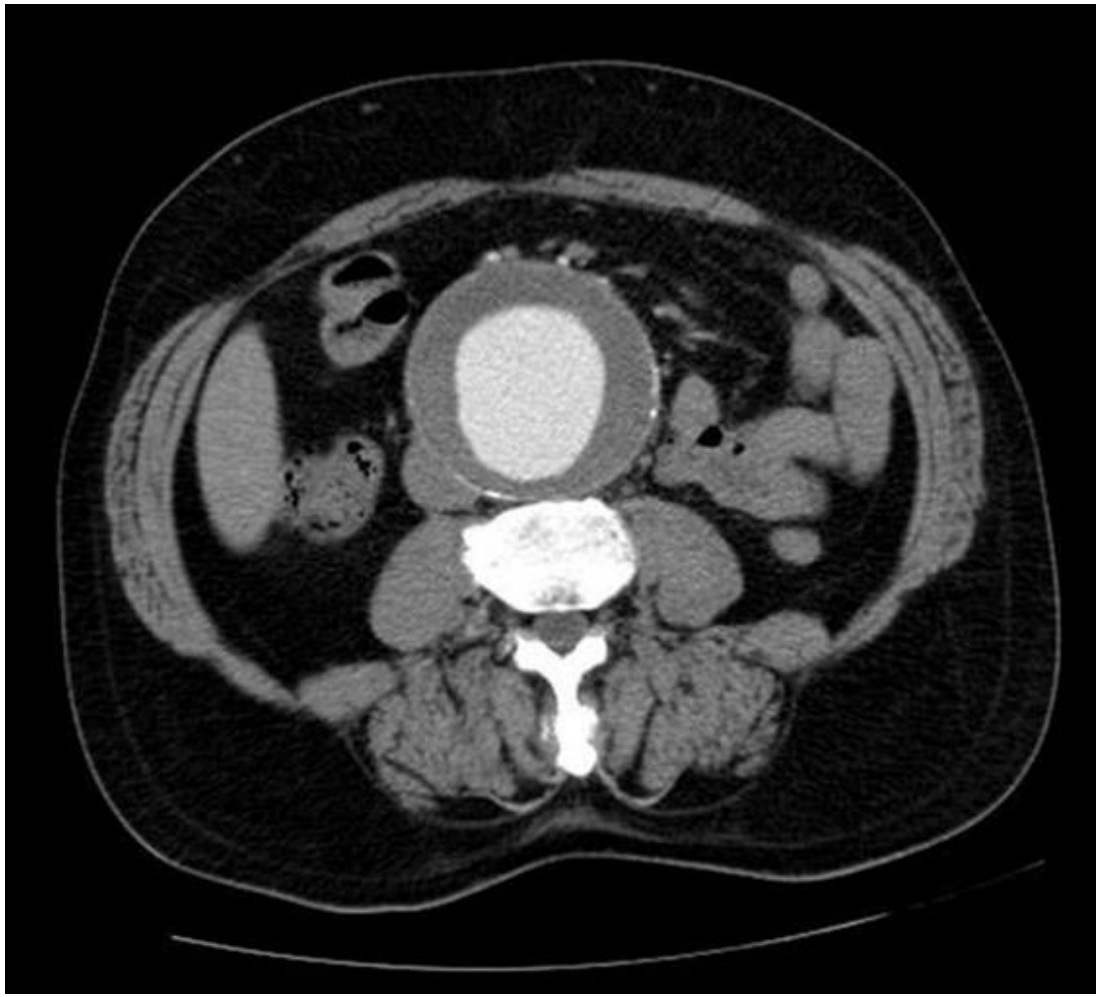
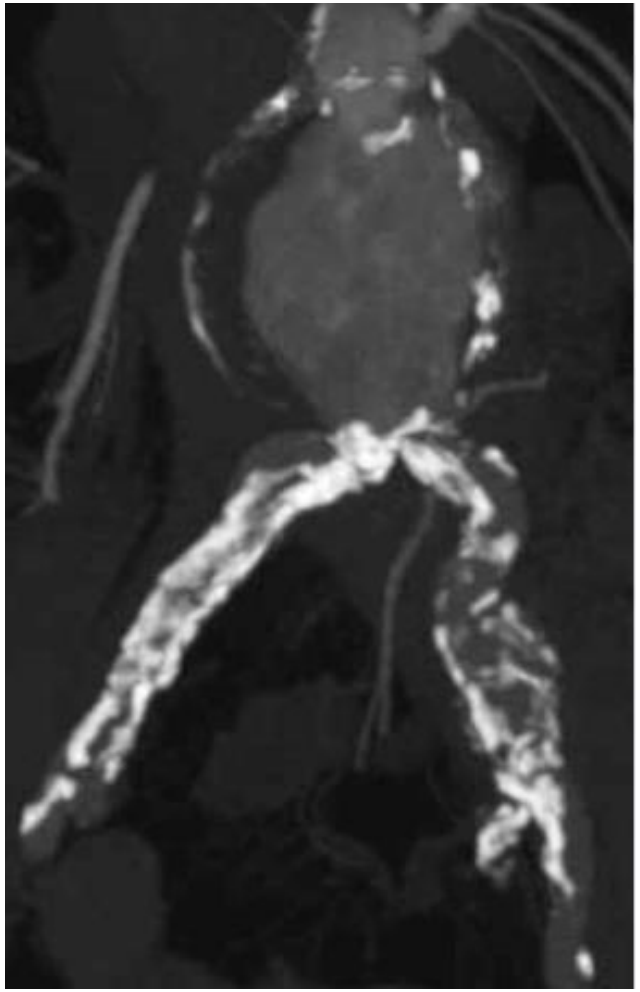
DISCLOSURE

Benjamin Brooke, MD, PhD

- No relevant financial relationship reported





Is it ethical to not offer Mr. Jones an operation?

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Principles of Biomedical Ethics

For medical decision making to be considered "ethical", it must respect all four of these principles:

1. Justice
   - *Patients should be treated equally and fairly*

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4. Respect for Autonomy
   - *Patients have the right to make choices*

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Pre-operative Evaluation of Vulnerability

- ✓ Functional Decline
- ✓ Limited Mobility
- ✓ Depressed Cognition
- ✓ Poor Nutrition
- ✓ Multi-Morbidity

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} Frailty

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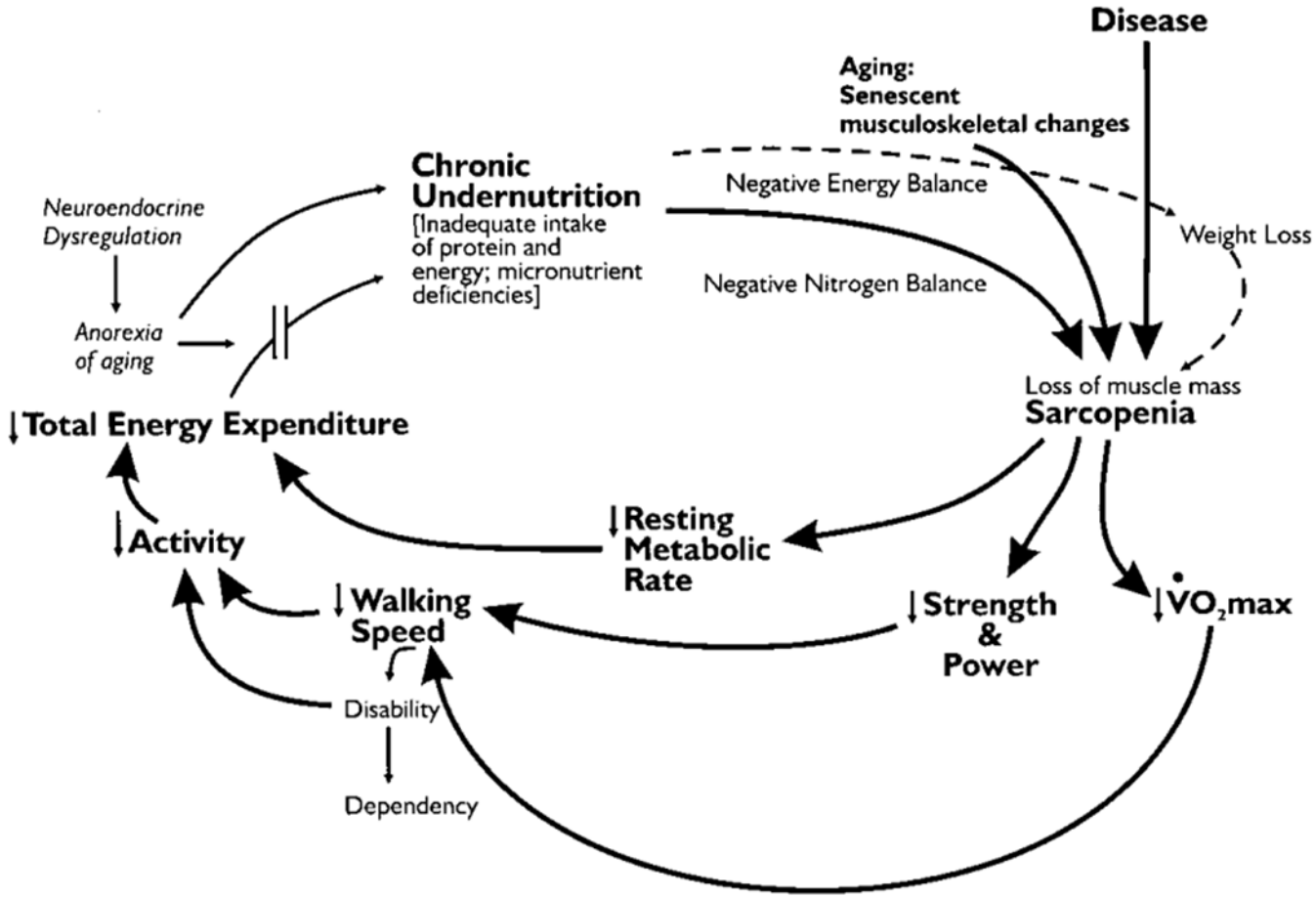
Frailty = Multifactorial Syndrome



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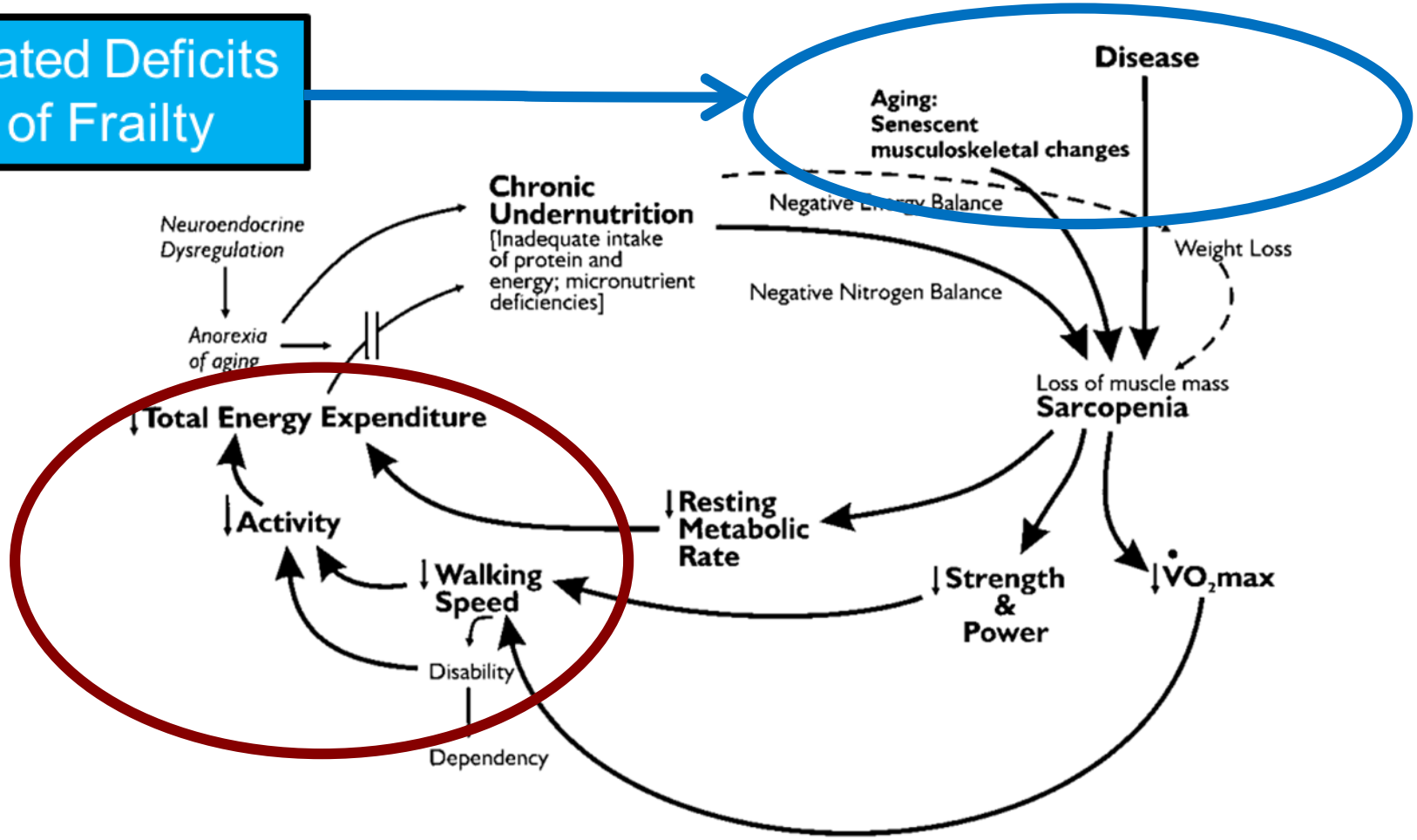
Frailty = Multifactorial Syndrome

Accumulated Deficits Model of Frailty



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COMPREHENSIVE GERIATRIC ASSESSMENT (CGA)

Canadian Study of Health & Aging

Changes in everyday activities	Mood problems	Seizures, partial complex
Head and neck problems	Feeling sad, blue, depressed	Seizures, generalized
Poor muscle tone in neck	History of depressed mood	Syncope or blackouts
Bradykinesia, facial	Tiredness all the time	Headache
Problems getting dressed	Depression (clinical impression)	Cerebrovascular problems
Problems with bathing	Sleep changes	History of stroke
Problems carrying out personal grooming	Restlessness	History of diabetes mellitus
Urinary incontinence	Memory changes	Arterial hypertension
Toileting problems	Short-term memory impairment	Peripheral pulses
Bulk difficulties	Long-term memory impairment	Cardiac problems
Rectal problems	Changes in general mental functioning	Myocardial infarction
Gastrointestinal problems	Onset of cognitive symptoms	Arrhythmia
Problems cooking	Clouding or delirium	Congestive heart failure
Sucking problems	Paranoid features	Lung problems
Problems going out alone	History relevant to cognitive impairment or loss	Respiratory problems
Impaired mobility	Family history relevant to cognitive impairment/loss	History of thyroid disease
Musculoskeletal problems	Impaired vibration	Thyroid problems
Bradykinesia of the limbs	Tremor at rest	Skin problems
Poor muscle tone in limbs	Postural tremor	Malignant disease
Poor limb coordination	Intention tremor	Breast problems
Poor coordination, trunk	History of Parkinson disease	Abdominal problems
Poor standing posture	Family history of degenerative disease	Presence of snout reflex
Irregular gait pattern	Presence of palmomental reflex	Falls

Accumulated Deficits Model of Frailty

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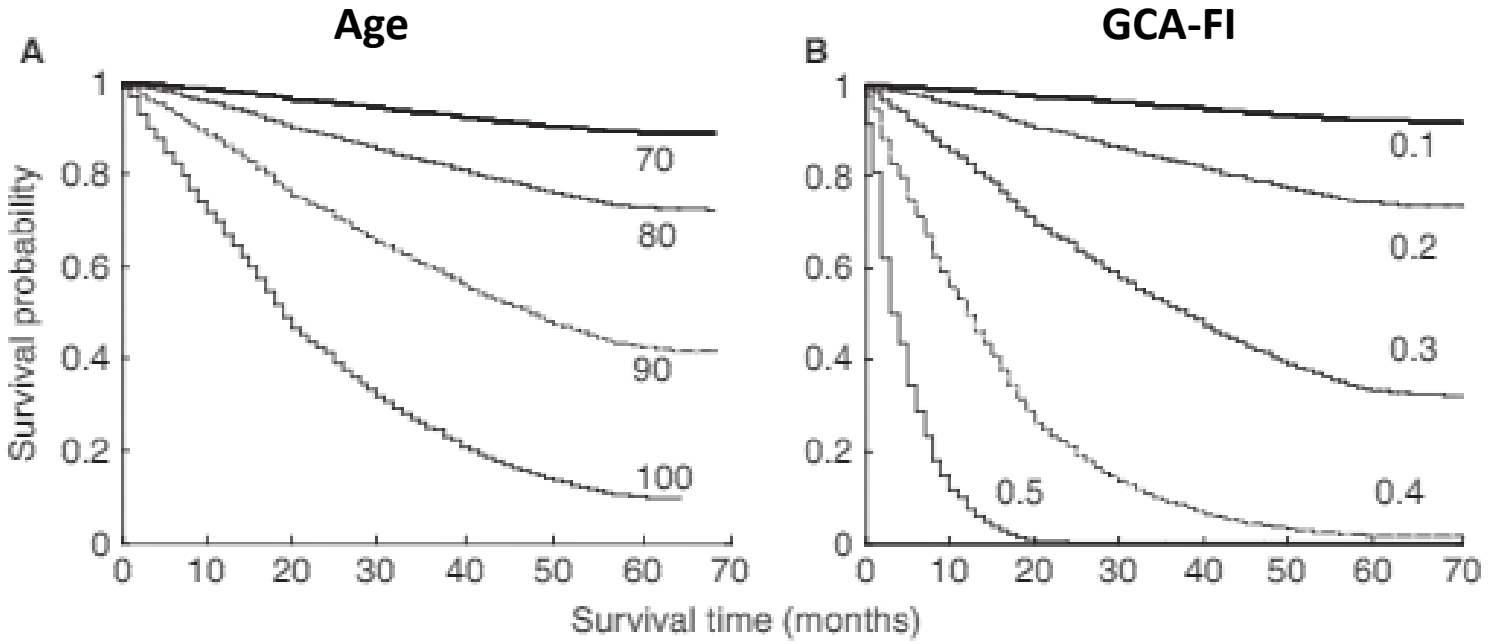
CGA Frailty Index

- CGA Frailty Index (FI)= the number of positive responses (numerator) divided by the total number of items assessed (denominator).

- CGA FI is a better predictor of 70-month survival than age alone



Mild Frailty

Severe Frailty *

Source: Rockwood K. et al *J Am Geriatric Soc* 2010;58:318-323.

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Clinical Frailty Scale (CFS)

Non-Frail

Pre-Frail

Frail

Clinical Frailty Scale

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 category 1. Often, they exercise or are very active occasionally, e.g. 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.

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 <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 question/story and social withdrawal.

In **moderate dementia,** recent memory is very impaired, even though they seemingly can remember their past life events well. They can do personal care with prompting.

In **severe dementia,** they cannot do personal care without help.

Frail

Source: Rockwood K. et al. *CMAJ* 2005;173:489-495

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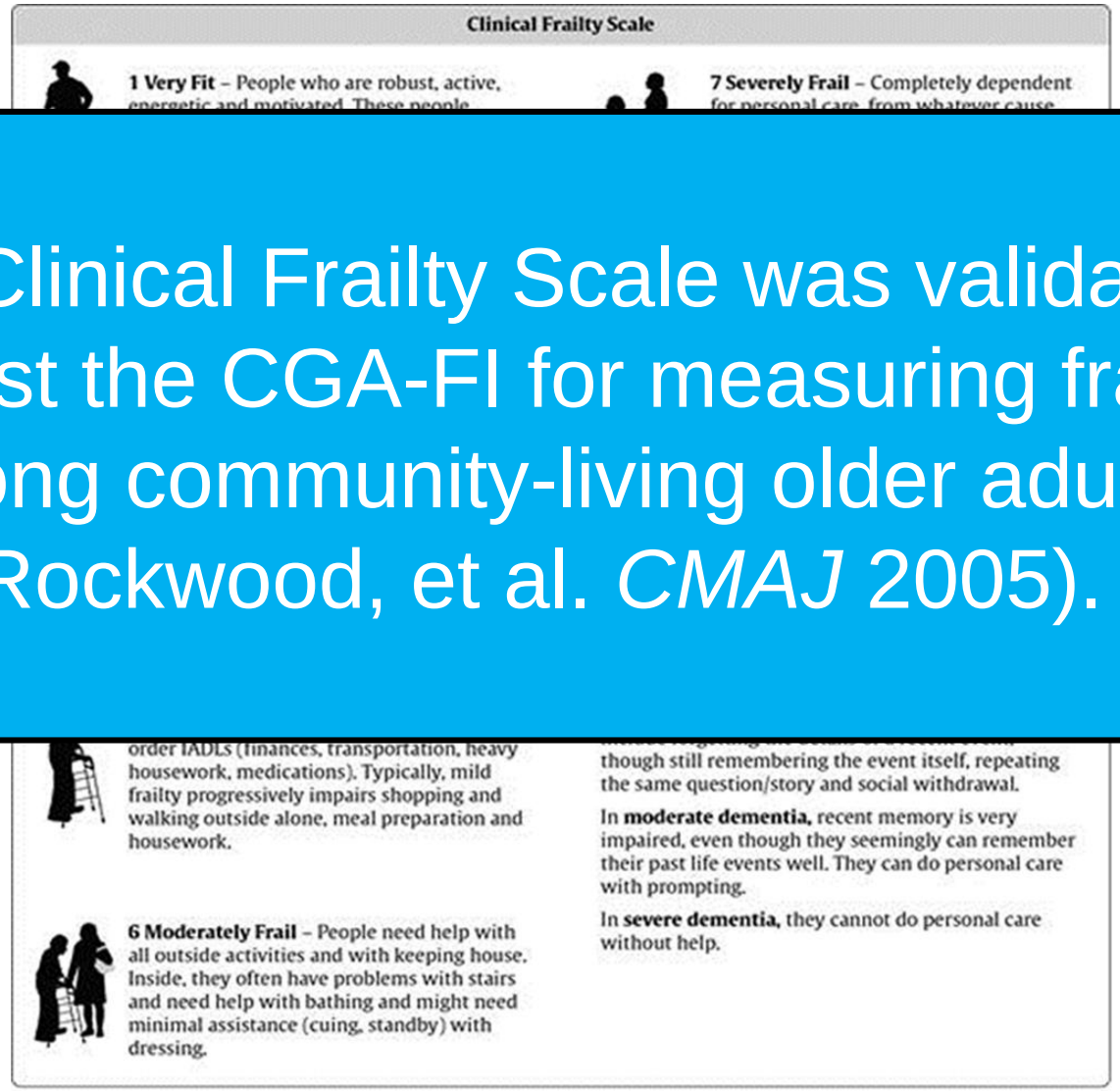

Frail

The Clinical Frailty Scale was validated against the CGA-FI for measuring frailty among community-living older adults (Rockwood, et al. *CMAJ* 2005).

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Cohort of Frail Vascular Surgery Patients

2,355 patients with CFS scores in Vascular Surgery clinic, January 2016 to August 2017

<u>Vascular Quality Initiative (VQI) REGISTRY DATABASE</u>
245 patients underwent major vascular procedures including CEA, EVAR, open AAA, PVI, TEVAR, Suprainguinal & Infrainguinal Bypass

134 independent-living patients with pre-op frailty assessment

39 Frail Patients (CFS ≥ 5)

95 Non-Frail Patients

<u>**111** patients excluded</u>
-LOS < 24 hrs (n=39)
-Pre-operative non-home residence (n=4)
-Urgent/emergent surgery (n=68)

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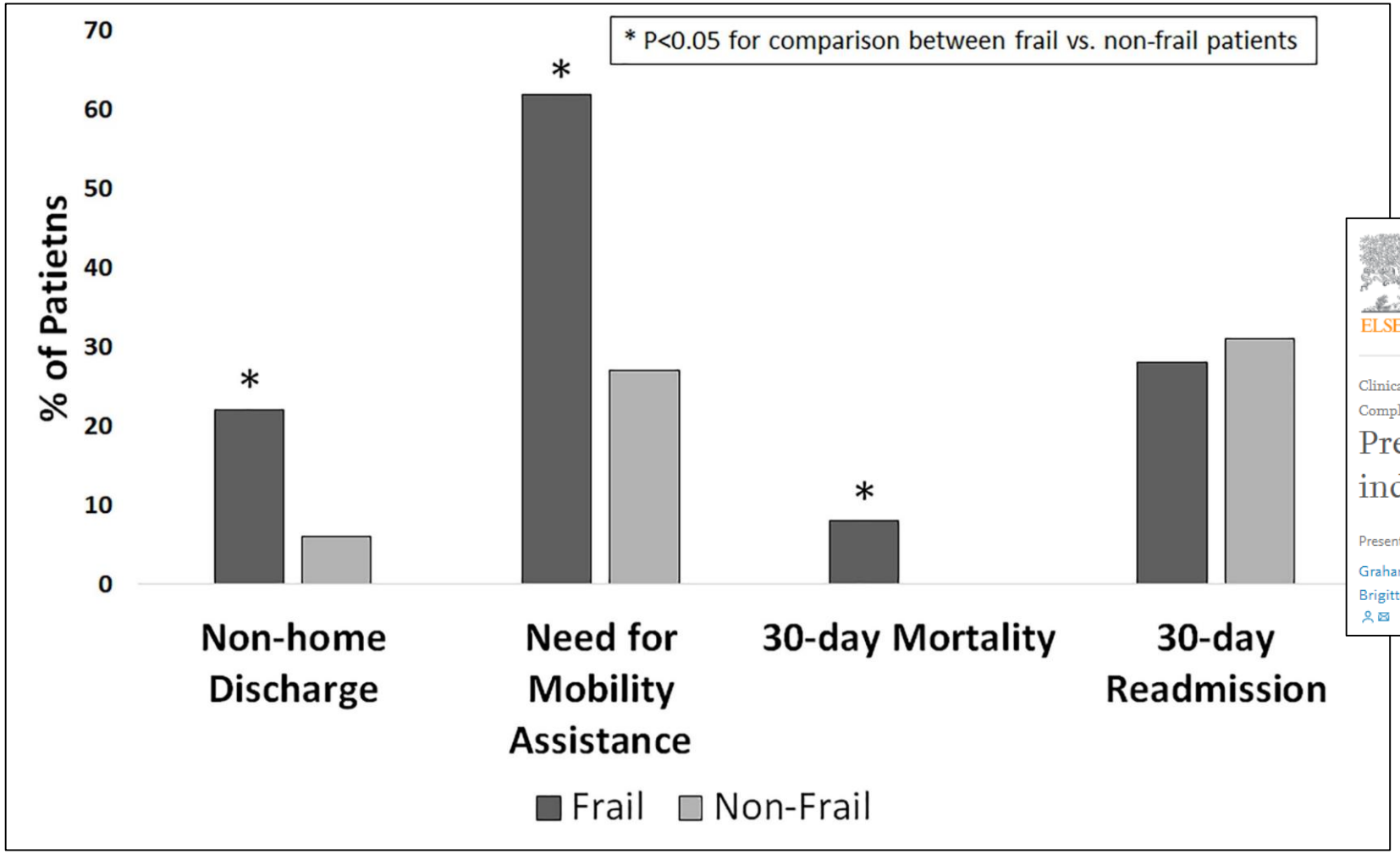
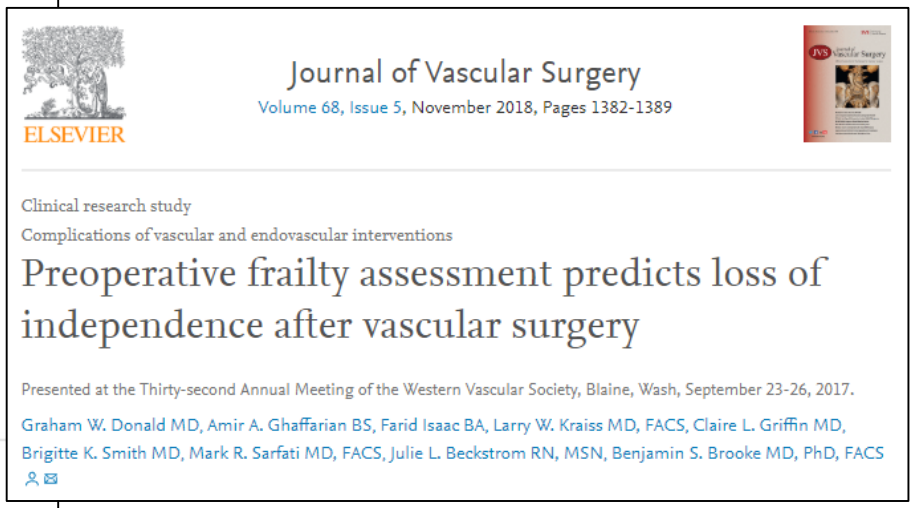
30-Day Outcomes Among Frail Patients





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Journal of Vascular Surgery

Volume 68, Issue 5, November 2018, Pages 1382-1389

Clinical research study

Complications of vascular and endovascular interventions

Preoperative frailty assessment predicts loss of independence after vascular surgery

Presented at the Thirty-second Annual Meeting of the Western Vascular Society, Blaine, Wash, September 23-26, 2017.

Graham W. Donald MD, Amir A. Ghaffarian BS, Farid Isaac BA, Larry W. Kraiss MD, FACS, Claire L. Griffin MD, Brigitte K. Smith MD, Mark R. Sarfati MD, FACS, Julie L. Beckstrom RN, MSN, Benjamin S. Brooke MD, PhD, FACS

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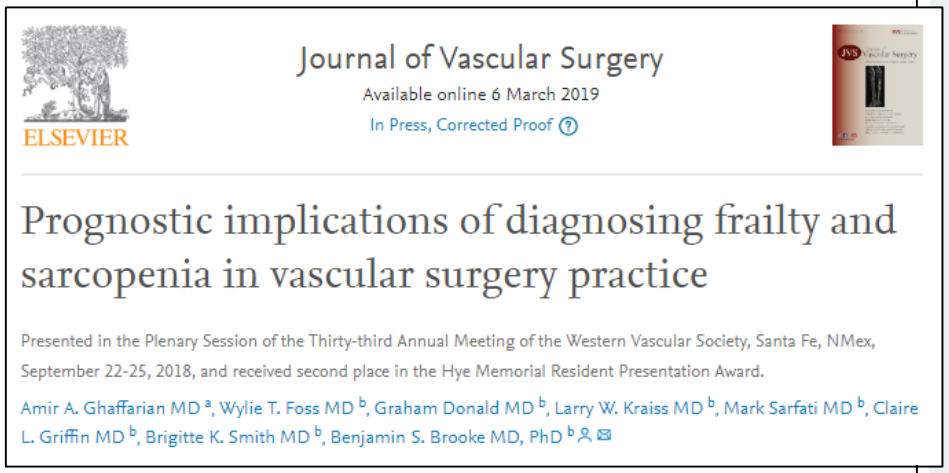
2-Year Survival Following Vascular Surgery



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Journal of Vascular Surgery

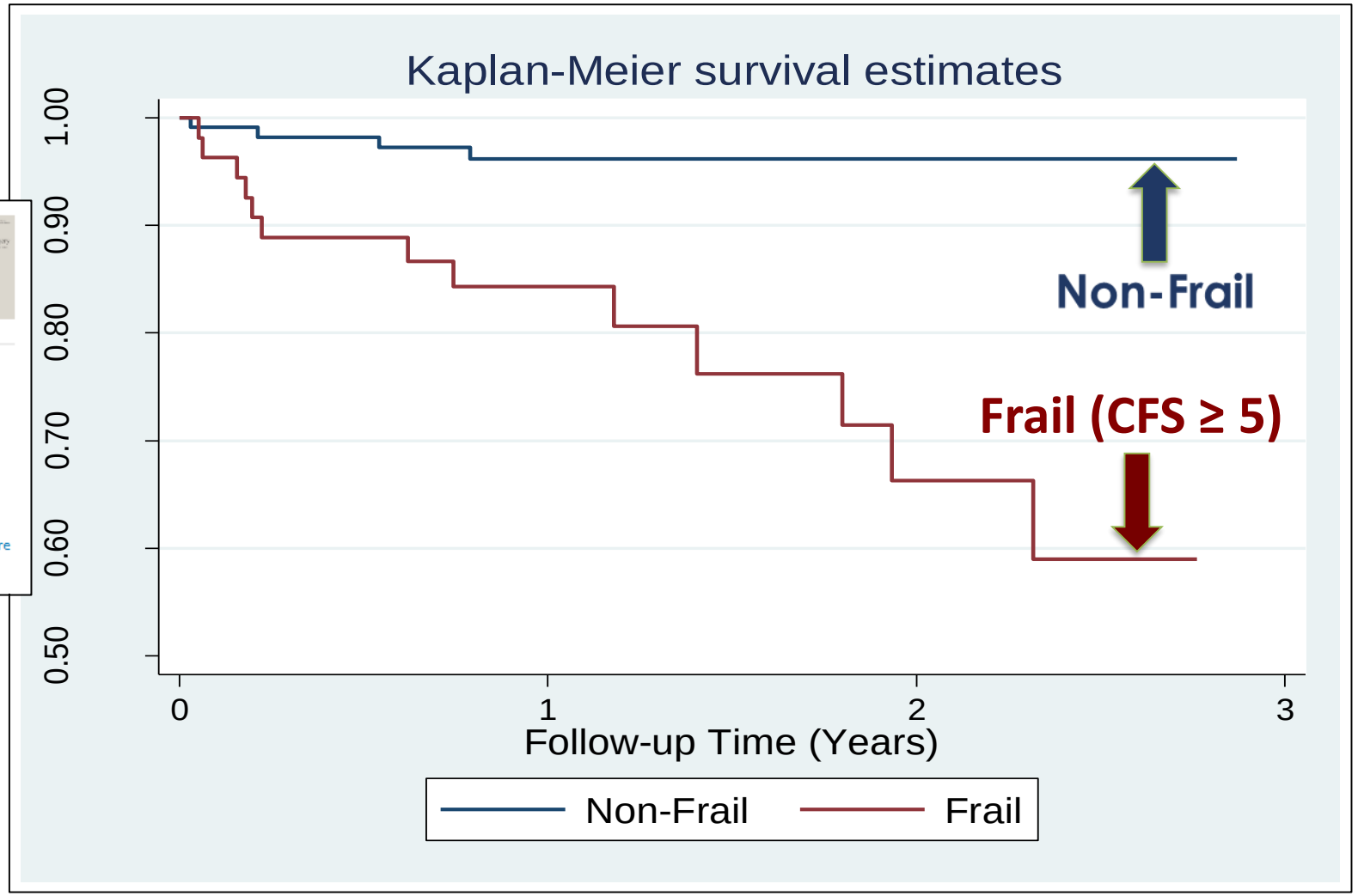
Available online 6 March 2019

In Press, Corrected Proof

Prognostic implications of diagnosing frailty and sarcopenia in vascular surgery practice

Presented in the Plenary Session of the Thirty-third Annual Meeting of the Western Vascular Society, Santa Fe, NMex, September 22-25, 2018, and received second place in the Hye Memorial Resident Presentation Award.

Amir A. Ghaffarian MD [a], Wylie T. Foss MD [b], Graham Donald MD [b], Larry W. Kraiss MD [b], Mark Sarfati MD [b], Claire L. Griffin MD [b], Brigitte K. Smith MD [b], Benjamin S. Brooke MD, PhD [b]



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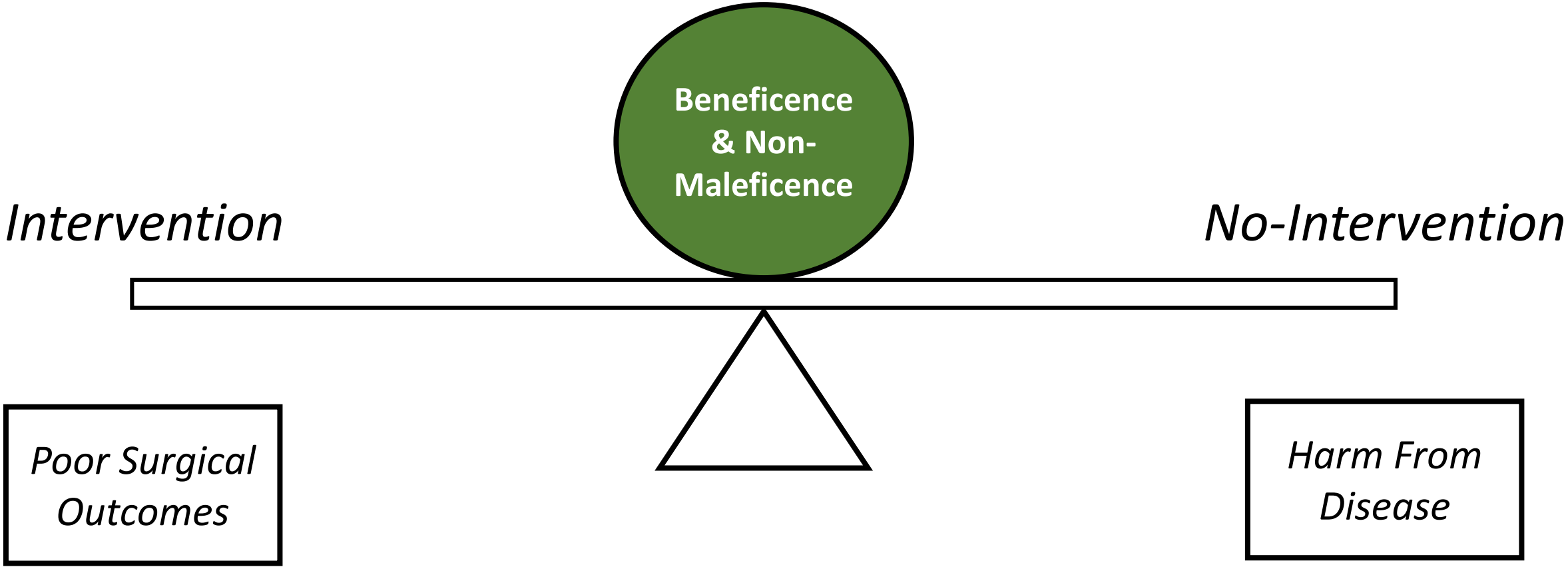
Achieving Beneficence and Non-Maleficence



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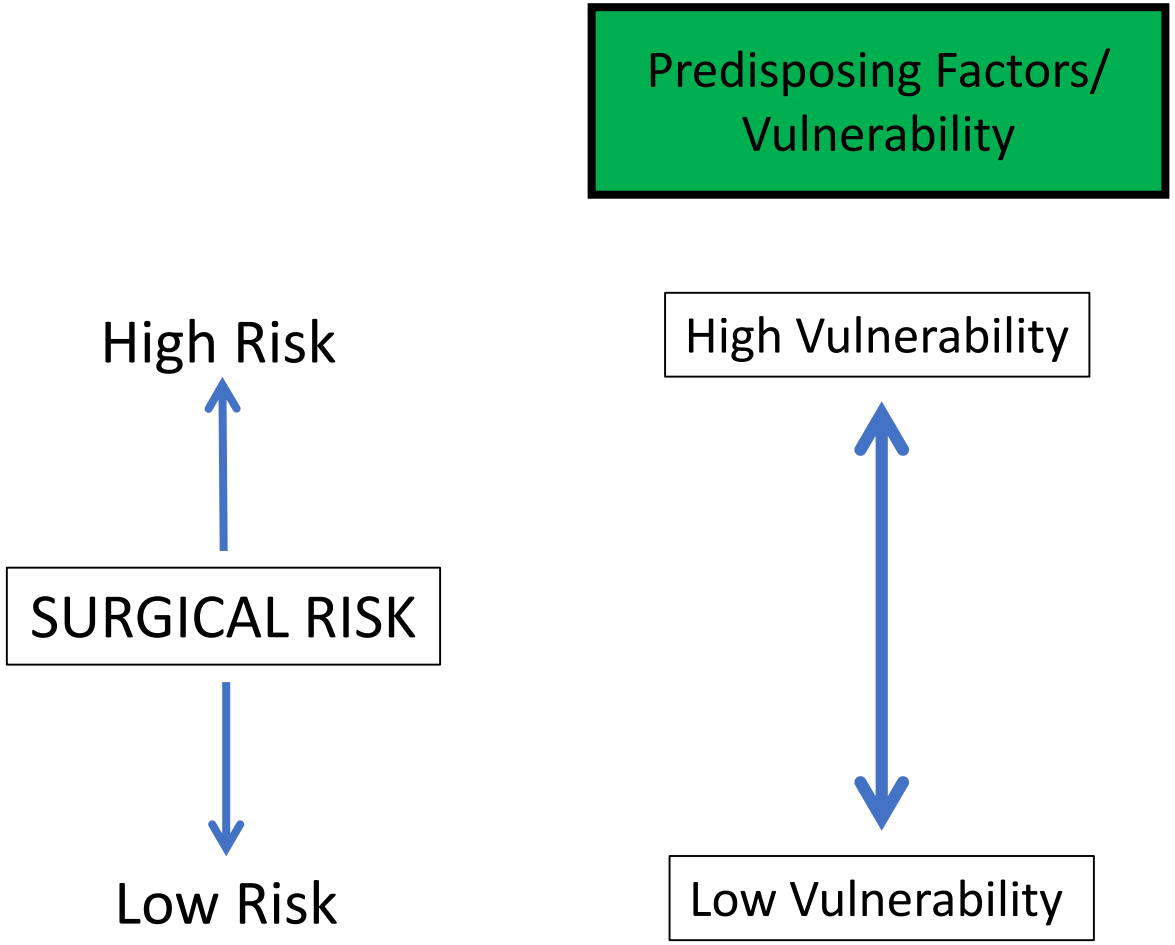
Estimating Surgical Risk for Vulnerable Patients



Source: Inouye SK et al. *JAMA* (1996) 275:852

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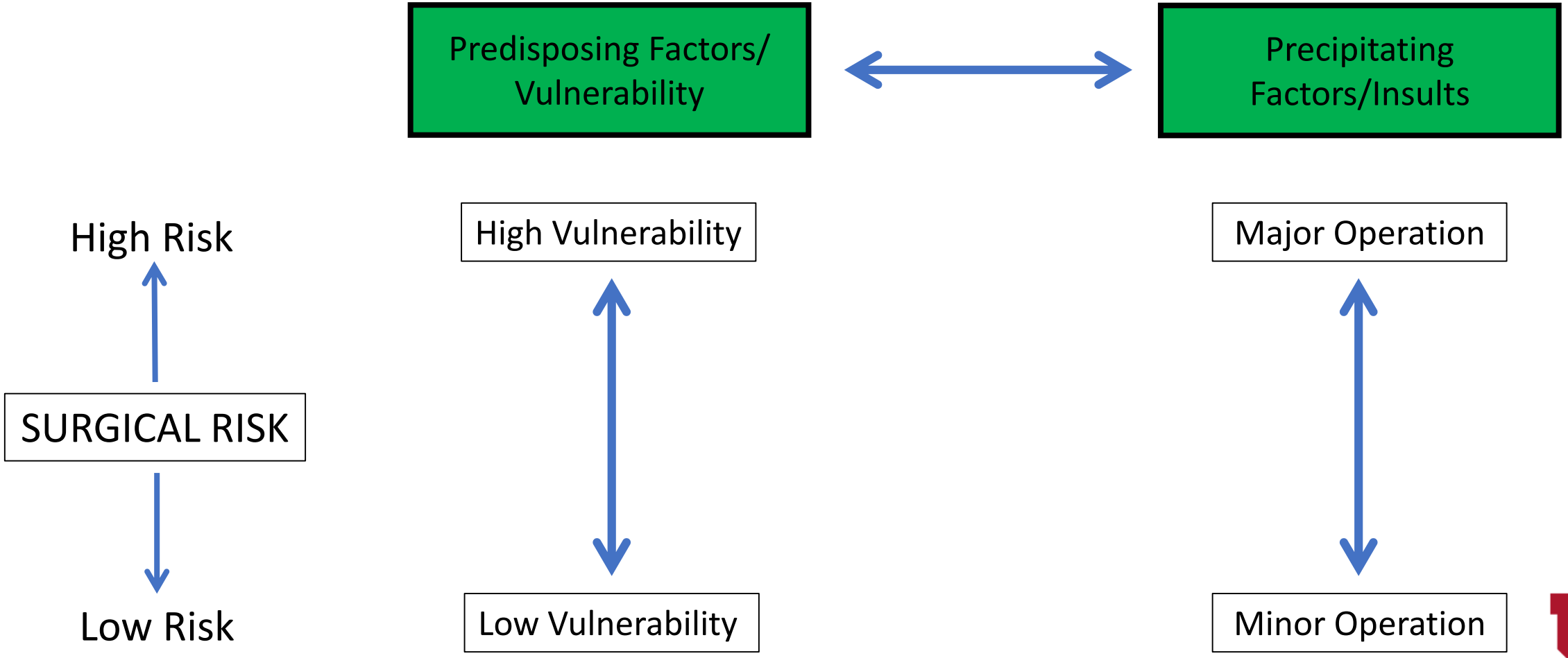

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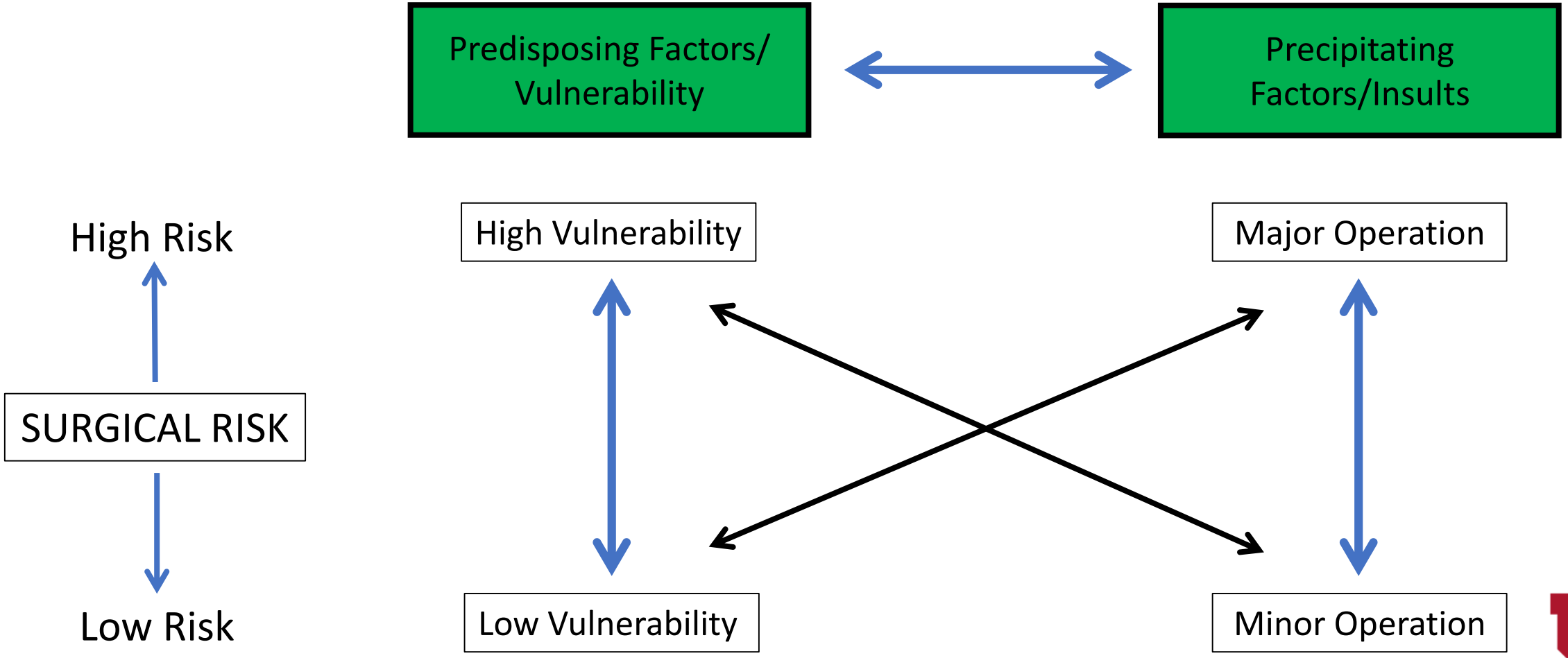

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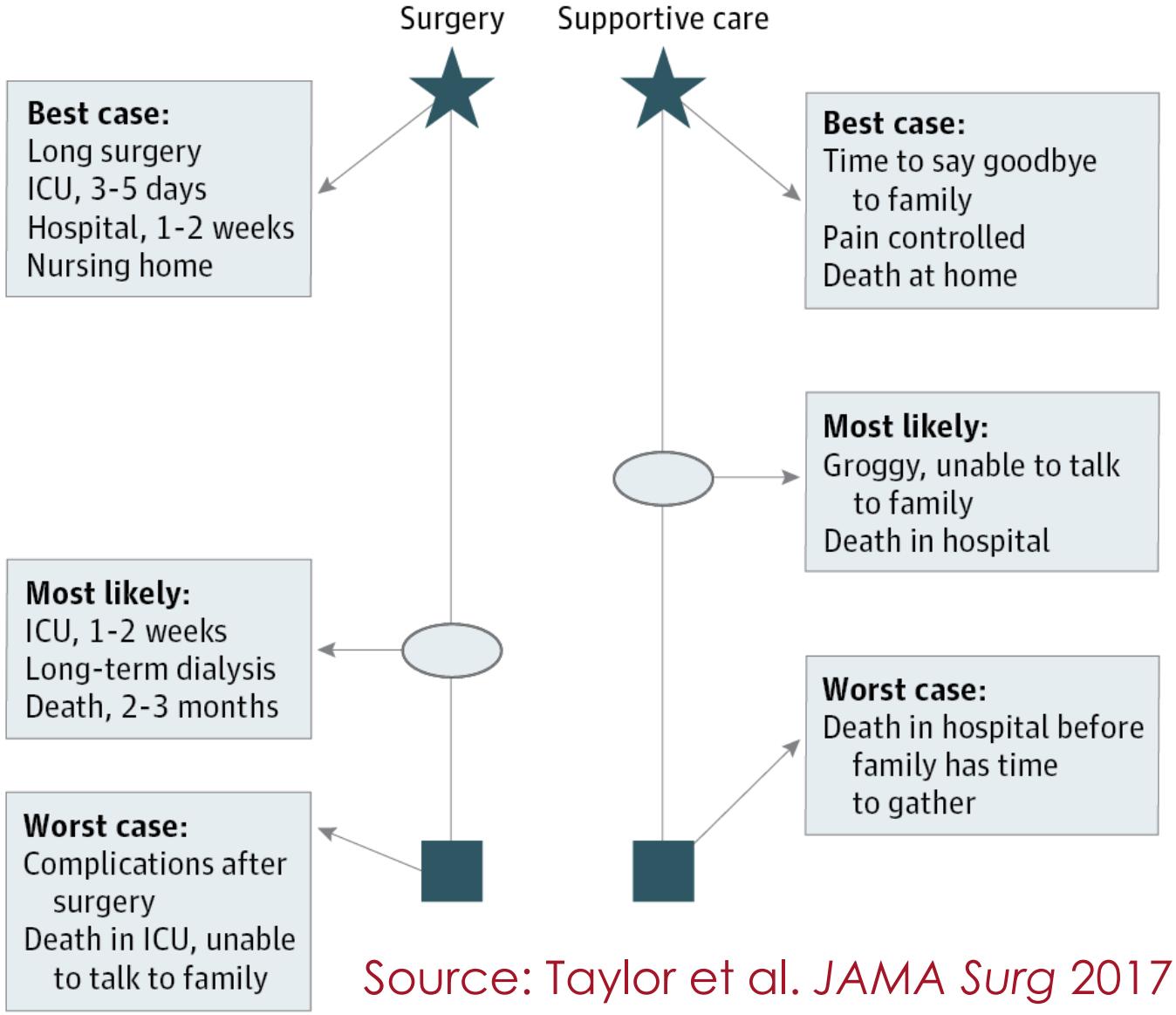
Respecting Autonomy with Vulnerable Patients

Best Case / Worst Case Framework



Source: Taylor et al. *JAMA Surg* 2017;152(6):531-538.

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Ethical principles should be applied to all surgical and non-operative options offered to Mr. Jones :

- ✓Justice
- ✓Beneficence
- ✓Non-maleficence
- ✓Autonomy

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Summary

- Balancing potential harms and benefits of surgical vs. non-operative options in frail patients is challenging.

- A principles-based approach to clinical decision making for frail patients can be used to help navigate ethical dilemmas, identify patient values, and select the best options for each patient.

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Thank You

Questions or Comments? **Benjamin.Brooke@hsc.utah.edu**

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