

# ***Frailty and COVID-19. What might we learn?***

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*Age Ageing*. 2021;50(1):3-6. doi: 10.1093/ageing/afaa202.

# Disclosures

Through the Dalhousie University Industry Liaison Office, I have asserted copyright of the **Clinical Frailty Scale**, the **Pictorial Fit Frail Scale**, and a **Comprehensive Geriatric Assessment** with frailty index calculator, and the **Hierarchic Assessment of Mobility and Balance**.

All our tools are **free for use**, with permission. We grant this if users do not change, commercialize, or charge for them.

I founded Ardea Outcomes (formerly DGI Clinical), which has contracts with pharma and device manufacturers for individualized outcome measurement, including in dementia.

# OBJECTIVES

1. To consider how the **intersection between severity of acute illness and the degree of baseline frailty** in prognosis for mortality and recovery in older adults.
2. To point to **common pitfalls** in applying the Clinical Frailty Scale.
3. To suggest that we **avoid all-or-none decision-making** if dynamic decision-making is possible.

# Five relevant risks in relation to frailty

The risk of acquiring Covid-19.

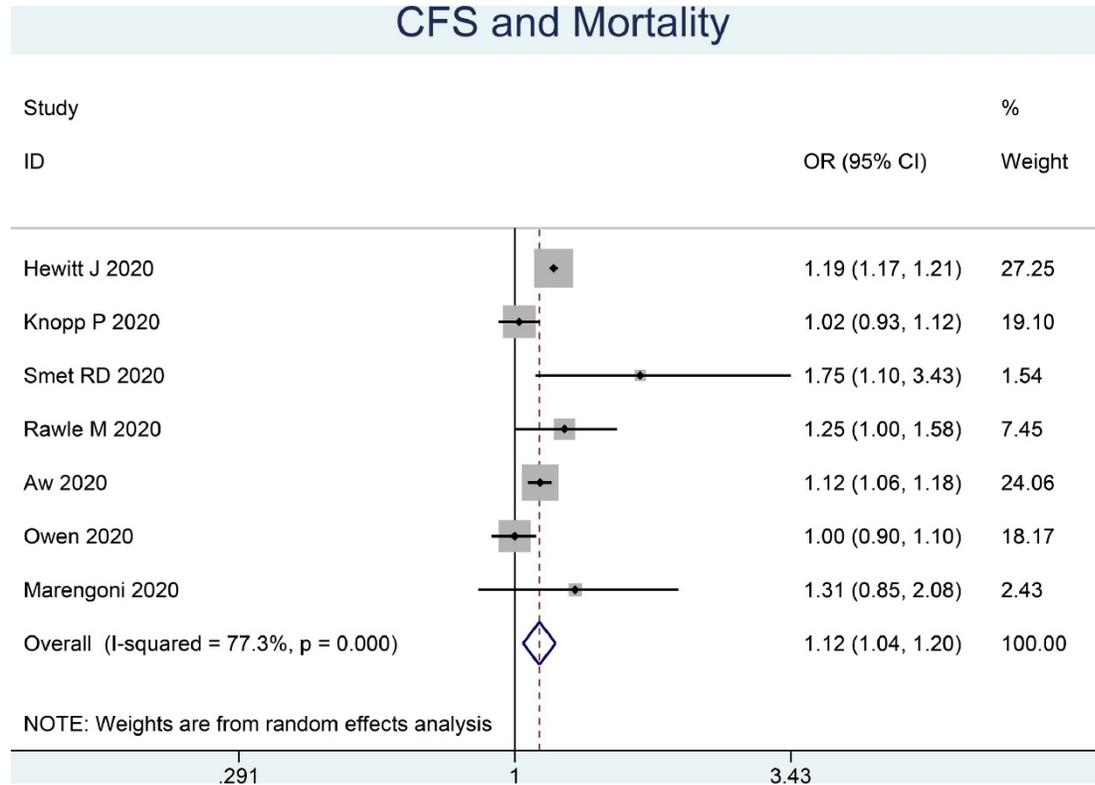
The risk of Covid-19 being recognizably symptomatic.

The risk of progression to from mild illness to severe to critical.

**The risk of death at any stage, in relation to the degree of frailty.**

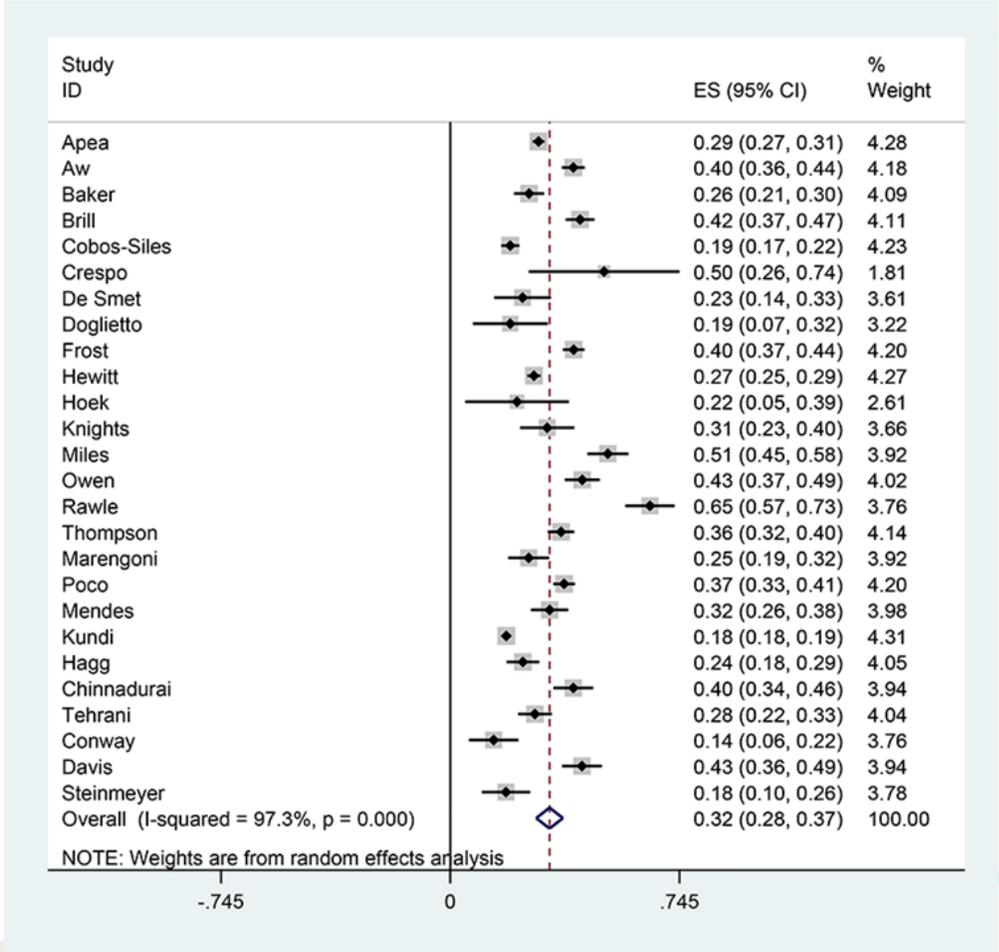
The risk of incomplete recovery.

# Clinical Frailty Scale and mortality in COVID-19: systematic review and dose-response meta-analysis.



*Each 1-point increase in CFS was associated with a **12% increase in mortality** (OR 1.12 (1.04, 1.20))*

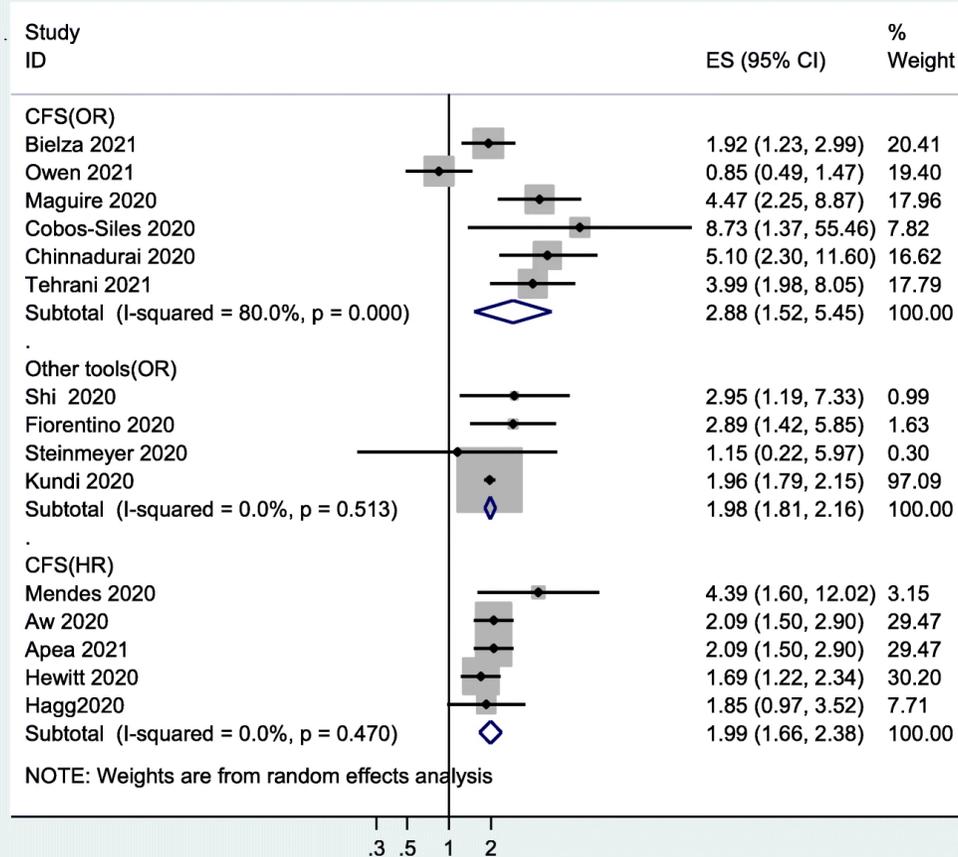
# Relationship between frailty and mortality for adults hospitalized with COVID-19: A systematic review



*“Note high heterogeneity.”  
Nuance in interpretation is needed.*

Cosco TD ... Conroy s. *Age Ageing*. 2021 Jan 14: E-pub.  
PMID:33448278 <https://doi.org/10.1093/ageing/afab008>

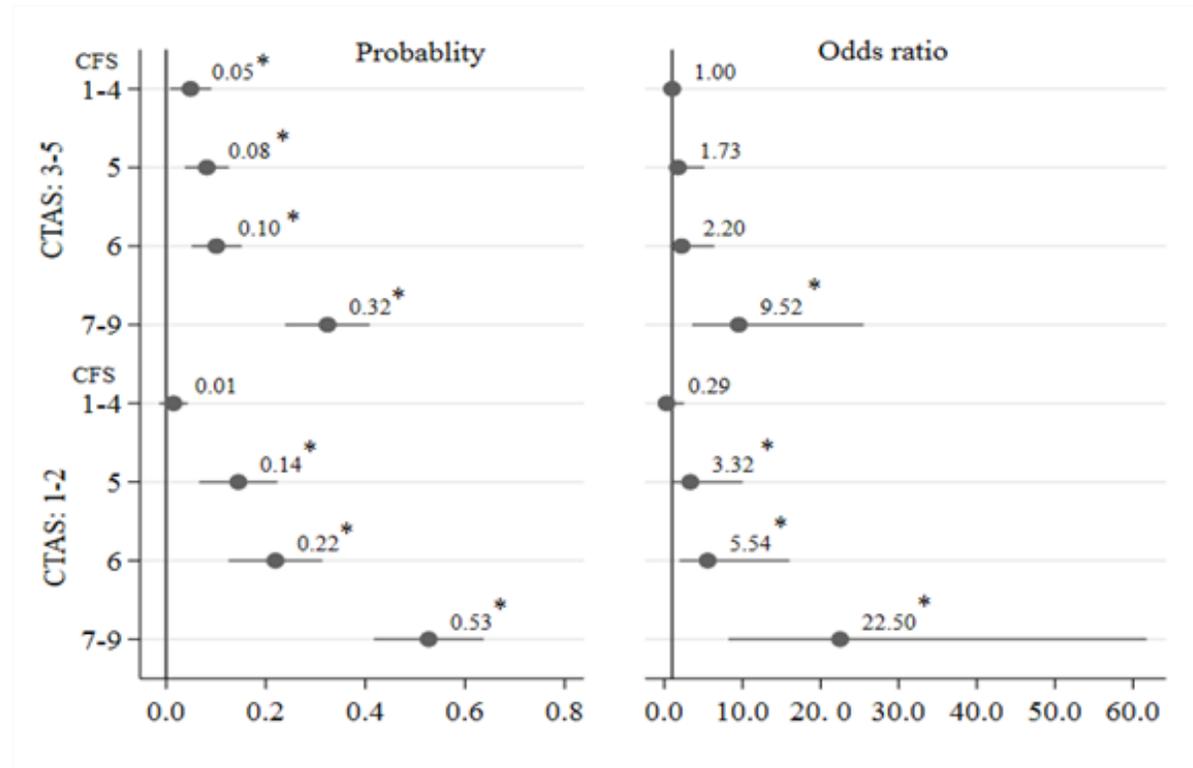
# Clinical Frailty Scale and mortality in COVID-19: systematic review and meta-analysis.



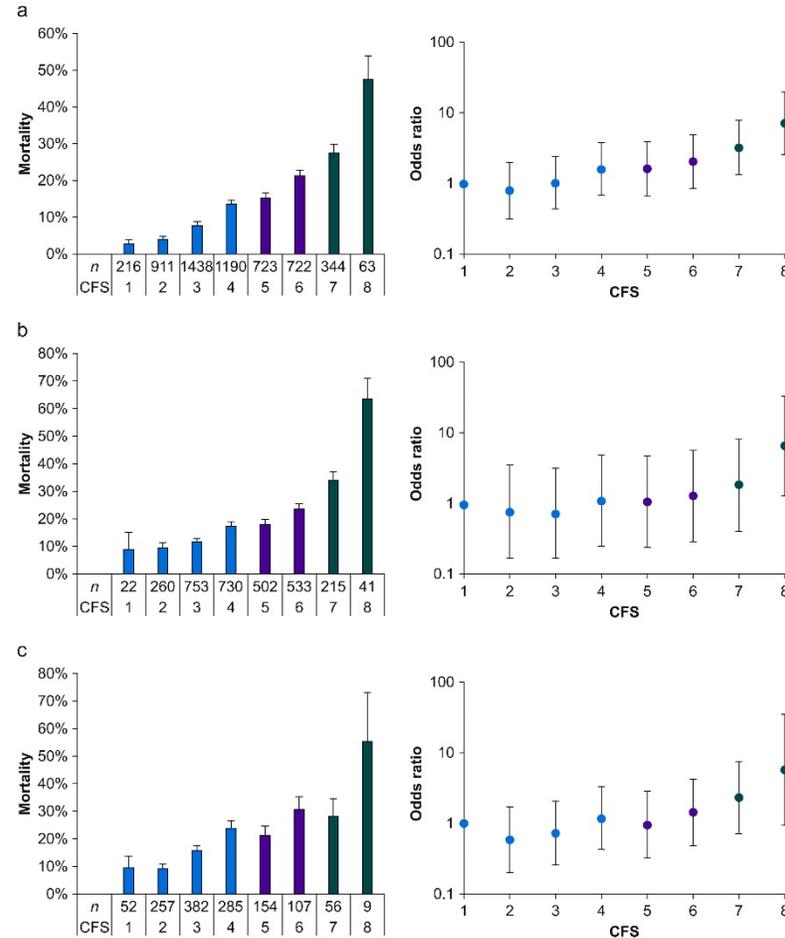
*CFS and other scores dichotomized*

Zhang XM, et al., Frailty as a predictor of mortality among patients with COVID-19: a systematic review and meta-analysis. BMC Geriatr. 2021;21:186. PMID: 33731018

# Thirty-day mortality by Clinical Frailty Scale score and illness severity (CTAS)



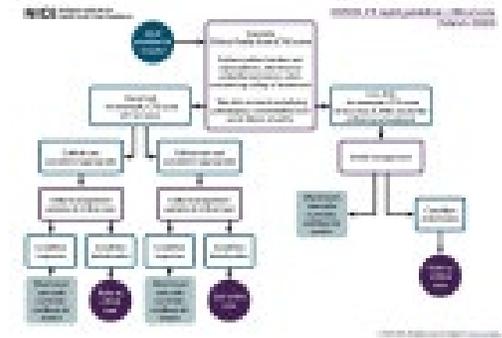
# In-hospital mortality by Clinical Frailty Scale score: Whole cohort; >64; mechanical ventilation



# National Institute for Health and Care Excellence: COVID-19 rapid guideline: critical care in adults 27 March 2020 update

## Assess frailty

Patient aged over 65, without stable long-term disabilities (for example, cerebral palsy), learning disabilities or autism: use Clinical Frailty Scale (CFS) score as part of a holistic assessment. Any patient aged under 65, or patient of any age with stable long-term disabilities (for example, cerebral palsy), learning disabilities or autism: do an individualized assessment of frailty. Do not use CFS score. Consider comorbidities and underlying health conditions in all cases



# The Clinical Frailty Scale

## CLINICAL FRAILTY SCALE

	<b>1</b>	<b>VERY FIT</b>	People who are robust, active, energetic and motivated. They tend to exercise regularly and are among the fittest for their age.		<b>6</b>	<b>LIVING WITH MODERATE FRAILITY</b>	People who 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.
	<b>2</b>	<b>FIT</b>	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.		<b>7</b>	<b>LIVING WITH SEVERE FRAILITY</b>	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).
	<b>3</b>	<b>MANAGING WELL</b>	People whose medical problems are well controlled, even if occasionally symptomatic, but often are not regularly active beyond routine walking.		<b>8</b>	<b>LIVING WITH VERY SEVERE FRAILITY</b>	Completely dependent for personal care and approaching end of life. Typically, they could not recover even from a minor illness.
	<b>4</b>	<b>LIVING WITH VERY MILD FRAILITY</b>	Previously "vulnerable," this category marks early transition from complete independence. 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.		<b>9</b>	<b>TERMINALLY ILL</b>	Approaching the end of life. This category applies to people with a life expectancy <6 months, who are not otherwise living with severe frailty. (Many terminally ill people can still exercise until very close to death.)
	<b>5</b>	<b>LIVING WITH MILD FRAILITY</b>	People who often have more evident slowing, and need help with high order instrumental activities of daily living (finances, transportation, heavy housework). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation, medications and begins to restrict light housework.				

### SCORING FRAILITY IN PEOPLE WITH DEMENTIA

The degree of frailty generally 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.

In very severe dementia they are often bedfast. Many are virtually mute.



Clinical Frailty Scale ©2005-2020 Rockwood, Version 2.0 (EN). All rights reserved. For permission: [www.geriatricmedicine-research.ca](http://www.geriatricmedicine-research.ca)  
Rockwood K et al. A global clinical measure of fitness and frailty in elderly people. CMAJ 2005;173:489-495.

# The Clinical Frailty Scale asks about baseline function

## Clinical Frailty Scale\*

- 

**1** **Robust** – People who are robust, active, energetic and commonly exercise in line with what is expected for their age.
- 

**2** **Well** – People who have no active disease symptoms but do not exercise or are only exercising a little.
- 

**3** **Managing Well** – People whose medical problems are well controlled, but are not walking beyond routine walking.
- 

**4** **Vulnerable** – While not needing daily help, often symptoms or complaints are being managed.
- 

**5** **Moderately Frail** – People who have difficulty with shopping and walking outside alone, meal preparation and housework.
- 

**6** **Modestly Frail** – People who 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 have a high risk of dying (within ~ 6 months).

Intimate care

Personal care

**8** **Very Frail** – Completely dependent, approaching the end of life. Typically, they could even die 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.

\* 1. Canadian Study on Health & Aging, Revised 2008.

2. K. Rockwood et al. A global clinical measure of fitness and frailty in elderly people. CMAJ 2005;173:4

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Is this new?

Cognition

Recovery capacity

# Improving the usefulness of the Clinical Frailty Scale

Several initiatives to improve the reliability of scoring – e.g. the CFS app by NHS Elect; “Ten tips” poster, social media.

New study of an algorithm – 23 sites; 11 countries. Standard Red cap database. No funding; any site wishing to join please do so.

[Kenneth.Rockwood@Dal.ca](mailto:Kenneth.Rockwood@Dal.ca) Theou et al., *Age Ageing*. 2021 Feb 19:afab006.

Several publications on pragmatic and ethical aspects of the work. Rockwood & Theou *Can Geriatr J*. 2020;23:210-215. doi: 10.5770/cgj.23.463.

# Common pitfalls and their avoidance



## Top Tips to help you use the Clinical Frailty Scale

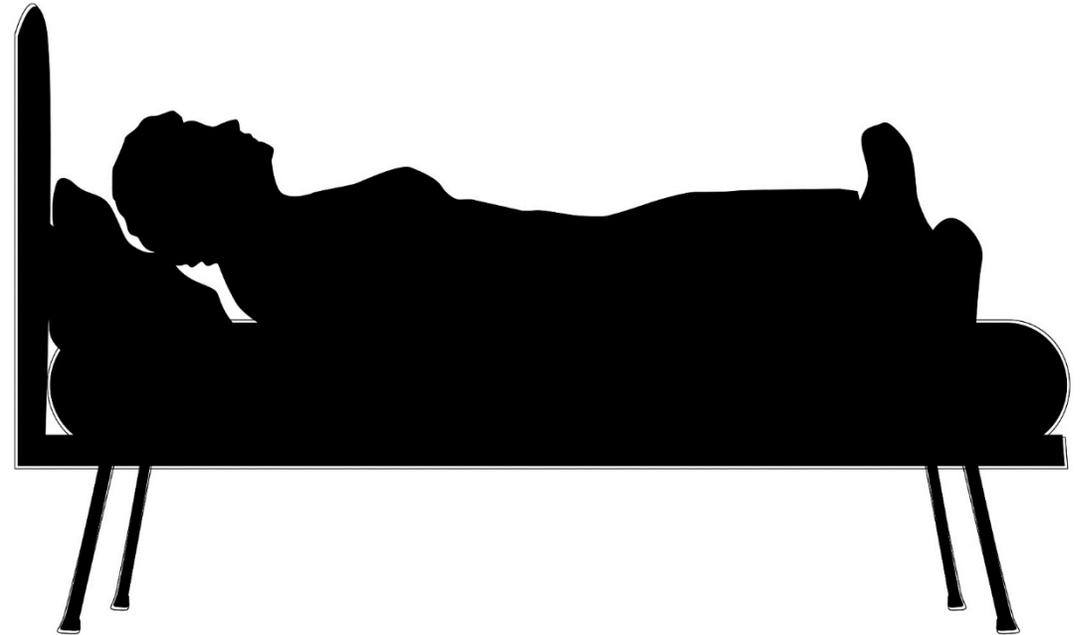
The Clinical Frailty Scale (CFS) was designed to summarise the results of a Comprehensive Geriatric Assessment. It's now commonly being used as a triage tool to make important clinical decisions, so it is imperative that it is used correctly.

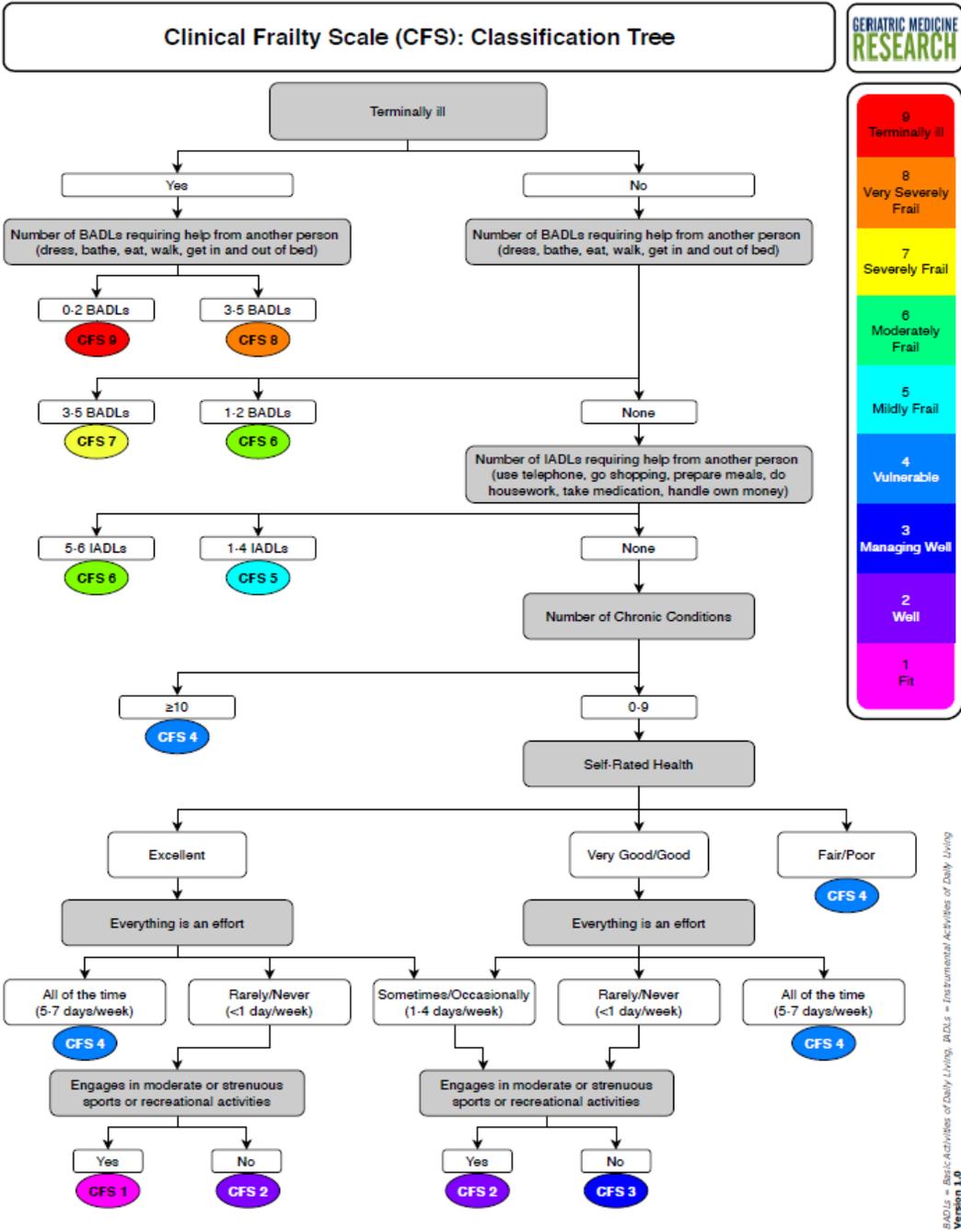
- #1 It's all about the baseline**  
If the person you are assessing is acutely unwell, score how they were 2 weeks ago, not how they are today.
- #2 You must take a proper history**  
The CFS is an objective clinical assessment tool. Frailty must be sensed, described, and measured - not guessed.
- #3 Trust, but verify**  
What the person you are assessing says is important, but should be cross-referenced with family/carers. The CFS is a judgement-based tool, so you must integrate what you are told, what you observe, and what your professional clinical experience tells you from dealing with older adults.
- #4 Over-65s only**  
The CFS is not validated in people under 65 years of age, or those with stable single-system disabilities. However, documenting how the person moves, functions, and has felt about their health may help to create an individualised frailty assessment.
- #5 Terminally ill (CFS 9)**  
For people who appear very close to death, the current state (i.e. that they are dying) trumps the baseline state.
- #6 Having medical problems does not automatically increase the score to CFS 3**  
A person who isn't bothered by symptoms and whose condition(s) doesn't limit their lives can be CFS 1 or 2 if they're active and independent.
- #7 Don't forget "vulnerable" (CFS 4)**  
People in this category are not dependent (though they may need assistance with heavy housework), but often complain of "slowing down". They're becoming sedentary, with poor symptom control.
- #8 Dementia doesn't limit use of the CFS**  
Decline in function in people living with dementia follows a pattern similar to frailty, so if you know the stage of dementia (mild, moderate, severe) you know the level of frailty (CFS 5,6,7). If you don't know the stage of dementia, follow the standard CFS scoring.
- #9 Drill down into changes in function**  
When considering more complex activities of daily living (such as cooking, managing finances, and running the home) the focus is on change in function. A person who has always relied on someone else to perform a particular activity should not be considered dependent for that activity if they've never had to do it before and may not know how.

Kenneth Rodwood, Sherril Fay, Olga Theou & Linda Dykes  
v1.0 9 April 2020



**And the greatest of these is:  
understand the baseline state**

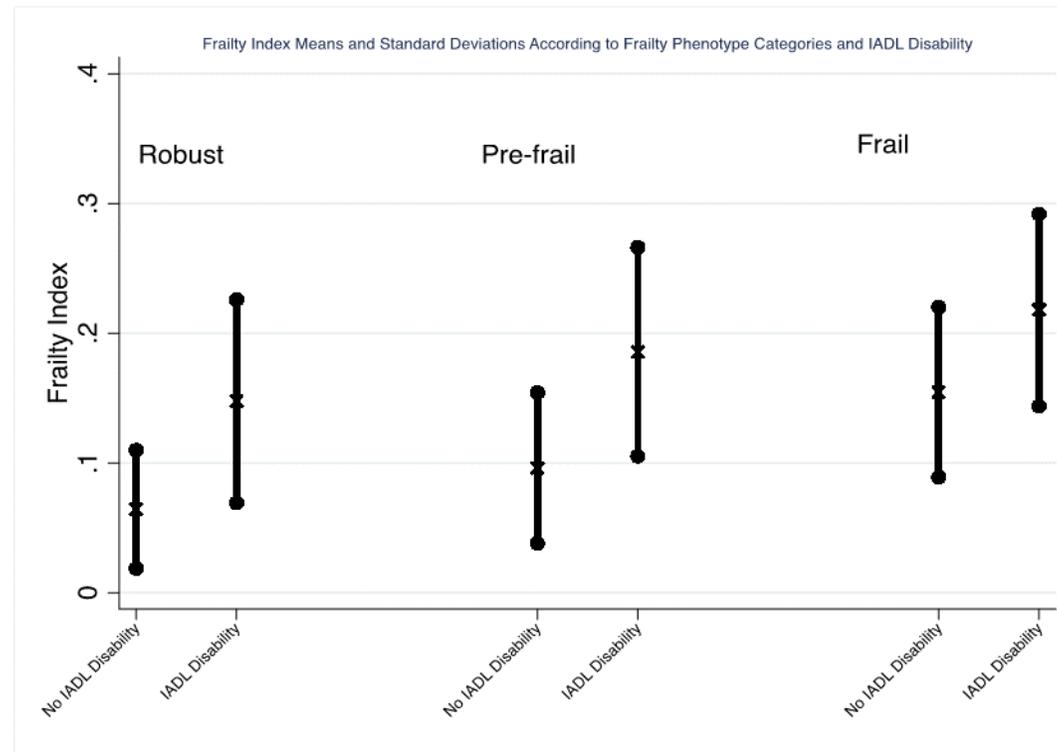




Theou O ... Rockwood K. *Age Ageing* 2021 Feb 19: afab006. doi: 10.1093/ageing/afab006. PMID: 33605412

# IADL disability is reflected in higher FI scores at all levels of phenotypic frailty (Mexican Health & Aging Study; unpublished)

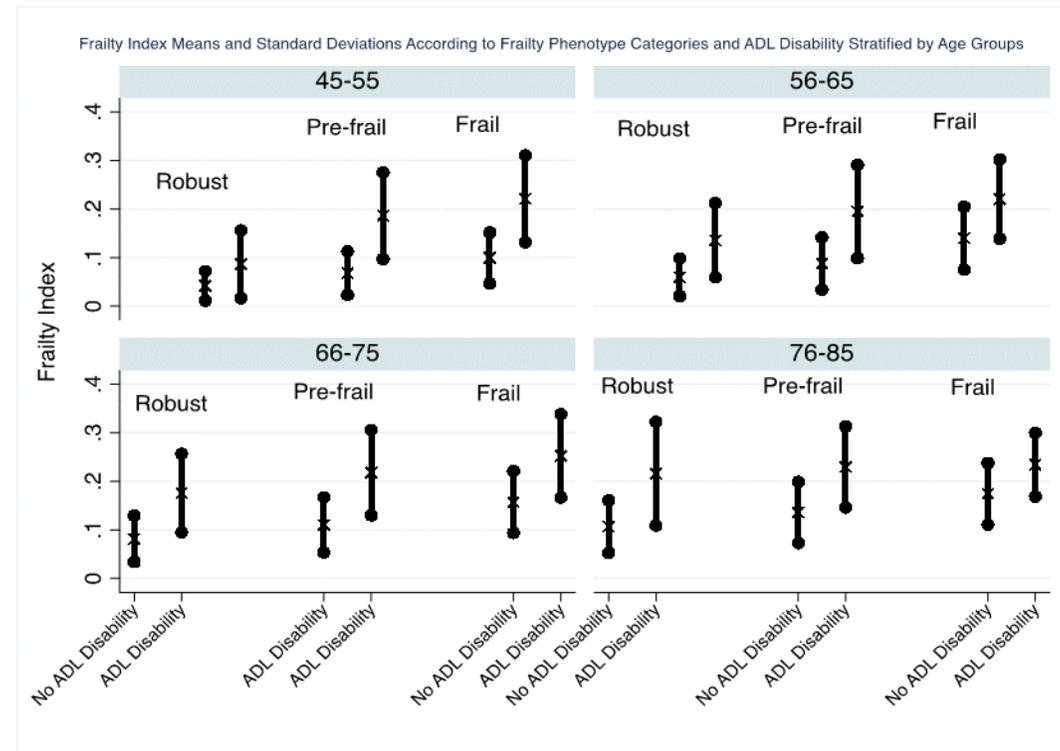
Robust 0.06 -> 0.15  
'Pre-frail' 0.10 -> 0.20  
Frail 0.16 -> 0.23



# Differences in FI scores of people with and without disability are attenuated in younger robust people

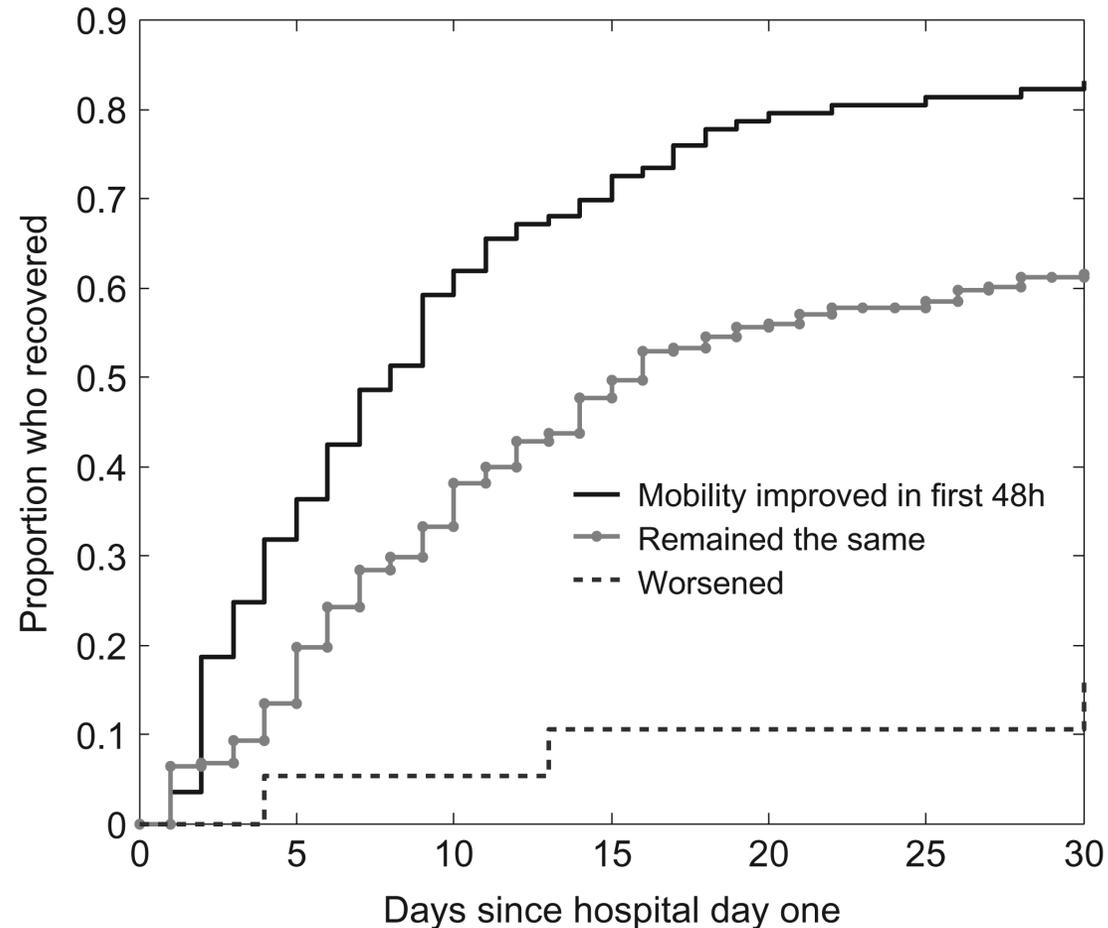
(Mexican Health & Aging Study - unpublished)

45-55 0.041 -> **0.086**  
76-86 0.054 -> **0.215**



# How people recover by how they move in bed

Time and extent of recovery in mobility and balance, in relation to **the initial (48 h) treatment response.**



# SUMMARY

1. People who are both acutely and **severely ill and severely frail** have the worst prognosis for mortality. Mostly. Less clear for recovery. Top line is easy. In between urges caution.
2. Don't use the Clinical Frailty Scale **in young people**, in whom disability often has a different meaning.
3. Use time to **avoid all-or-none decision-making** by formalising dynamic decision-making.



And frailty  
ain't no  
place for  
nihilists.

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