4° CONGRESSO NAZIONALE FRAGILITY FRACTURE NETWORK - ITALIA

Appropriatezza, Qualità e Sostenibilità delle Cure nel Percorso Ortogeriatrico

Frailty, sarcopenia and fragility fractures

INTERFACE Module 3

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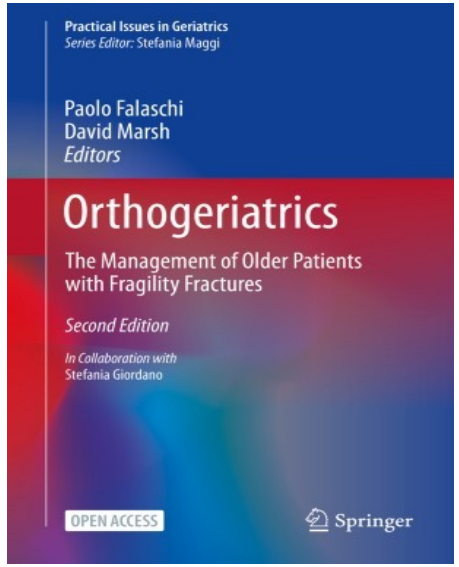
My Objectives

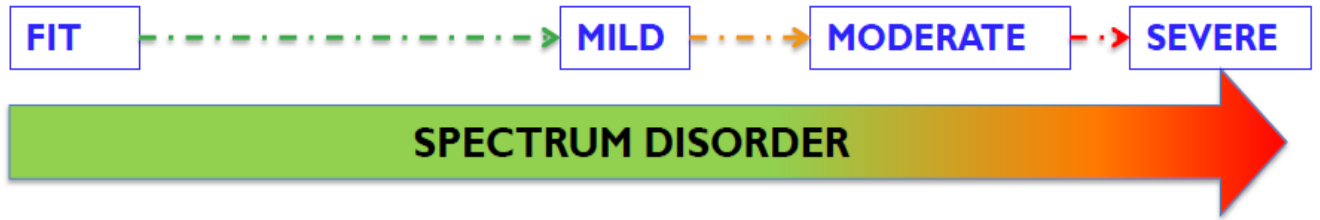
- Describe frailty and sarcopenia and how to identify them
- Describe their relevance to the care of a patient with a fragility fracture
- Show how we have presented this in INTERFACE

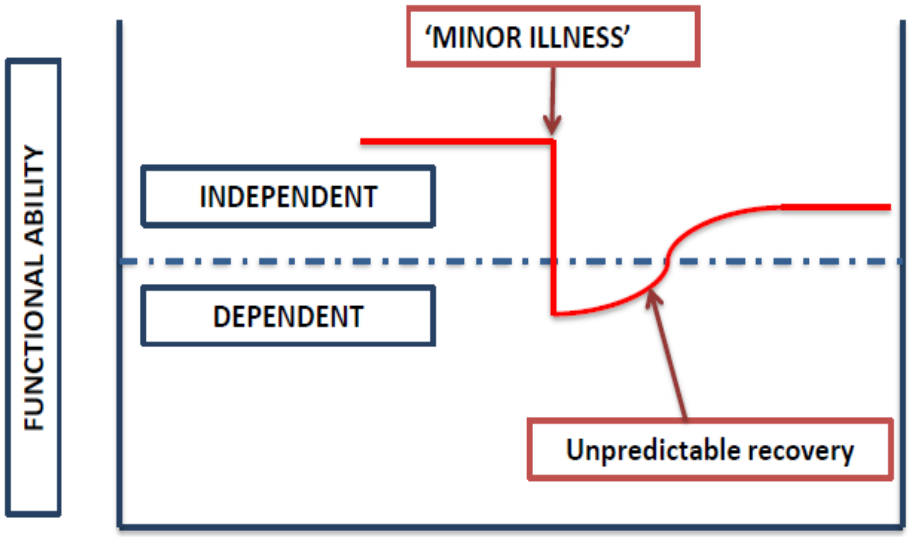
Based on our chapter in this book



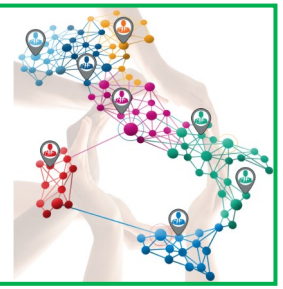
Frailty – the general idea

"A long-term condition characterised by lost biological reserves across multiple systems & vulnerability to decompensation after a stressor event"





Patient with hip fracture and frailty



On arrival

- Dehydrated, poor nutrition, delirium, frightened, and ? acute illness..

During surgery

- Brain less tolerant of hypotension, ..

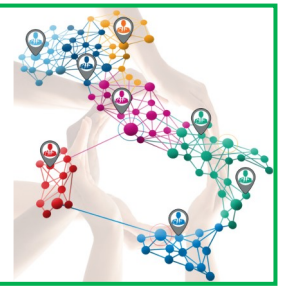
Post-acute

- Delirium, pneumonia, immobility, anorexia, pressure ulcers,

In rehabilitation

- Starting from a lower functional base, less stamina for rehabilitation and exercise, needs more time and effort by professionals..

Definitions and measurement of frailty

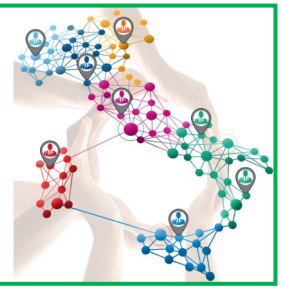


- 1. Phenotype
- 2. Deficit accumulation model
- 3. CGA based “hybrid tools”

These tools measure slightly different health dimensions

Fried's Phenotype definition

Fried LP et al J Gerontol A Biol Sci Med Sci 2001; 56: M146-56

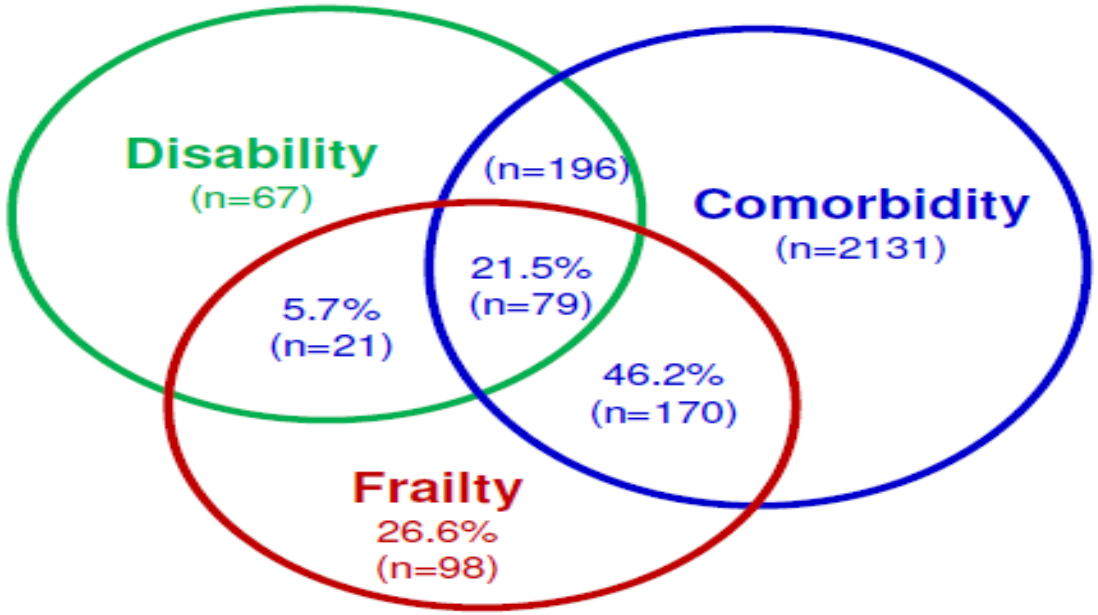


Weight loss	Self-reported weight loss of more than 4·5 kg or recorded weight loss of "5% per year
Exhaustion	Self-reported exhaustion on US Center for Epidemiological Studies depression scale73 (3–4 days per week or most of the time)
Low energy expenditure	Energy expenditure <383 kcal/week (men) or <270 kcal/week (women)
Slow gait speed	Standardised cutoff times to walk 4·57 m, stratified by sex and height
Weak grip strength	Grip strength, stratified by sex and body-mass index

0	**Not frail**
1-2	**Pre-frail**
3-5	**Frail**

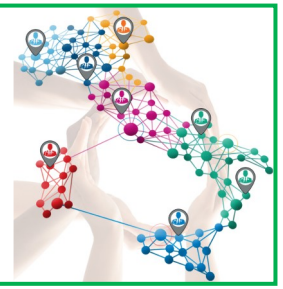
Frailty, multimorbidity, disability

The relationship of frailty with disability and comorbidity according to the PFI – *The Cardiovascular Health Study*



Fried L, et al. *J Gerontol* 2001

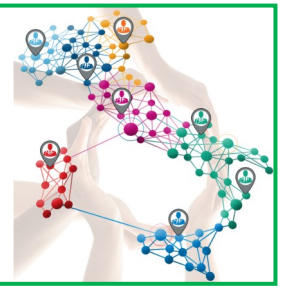
Rockwood Frailty Index
(a deficit accumulation score)



- Based on CGA which includes presence or absence of specific diseases, ADL abilities, physical signs
- Each dichotomised (0/1) or trichotomised (0, 0.33, 0.66, 1.0)
- Add all individual item scores
- Divide by number of items
- Frailty Index score is between 0 and 1
- Predictive ability improves with more parameters , >30 is enough!
- **Good evidence for all outcome prediction**

Rockwood et al JAGS 2006; 54:975-979

Clinical frailty score



	1	VERY FIT	People who are robust, active, energetic and motivated. They tend to exercise regularly and are among the fittest for their age
	2	FIT	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, even if occasionally symptomatic, but often are not regularly active beyond routine walking.
	4	LIVING WITH VERY MILD FRAILTY	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
	5	LIVING WITH MILD FRAILTY	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
	6	LIVING WITH MODERATE FRAILTY	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, standing) with dressing.
	7	LIVING WITH SEVERE FRAILTY	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	LIVING WITH VERY SEVERE FRAILTY	Completely dependent for personal care and approaching end of life. Typically, they could not recover even from a minor illness.
	9	TERMINALLY ILL	Approaching the end of like. 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.

SCORING FRAILTY IN PEOPLE WITH DEMENTIA

The degree of frailty generally corresponds to the degree of dementia. Common symptoms in mid 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.

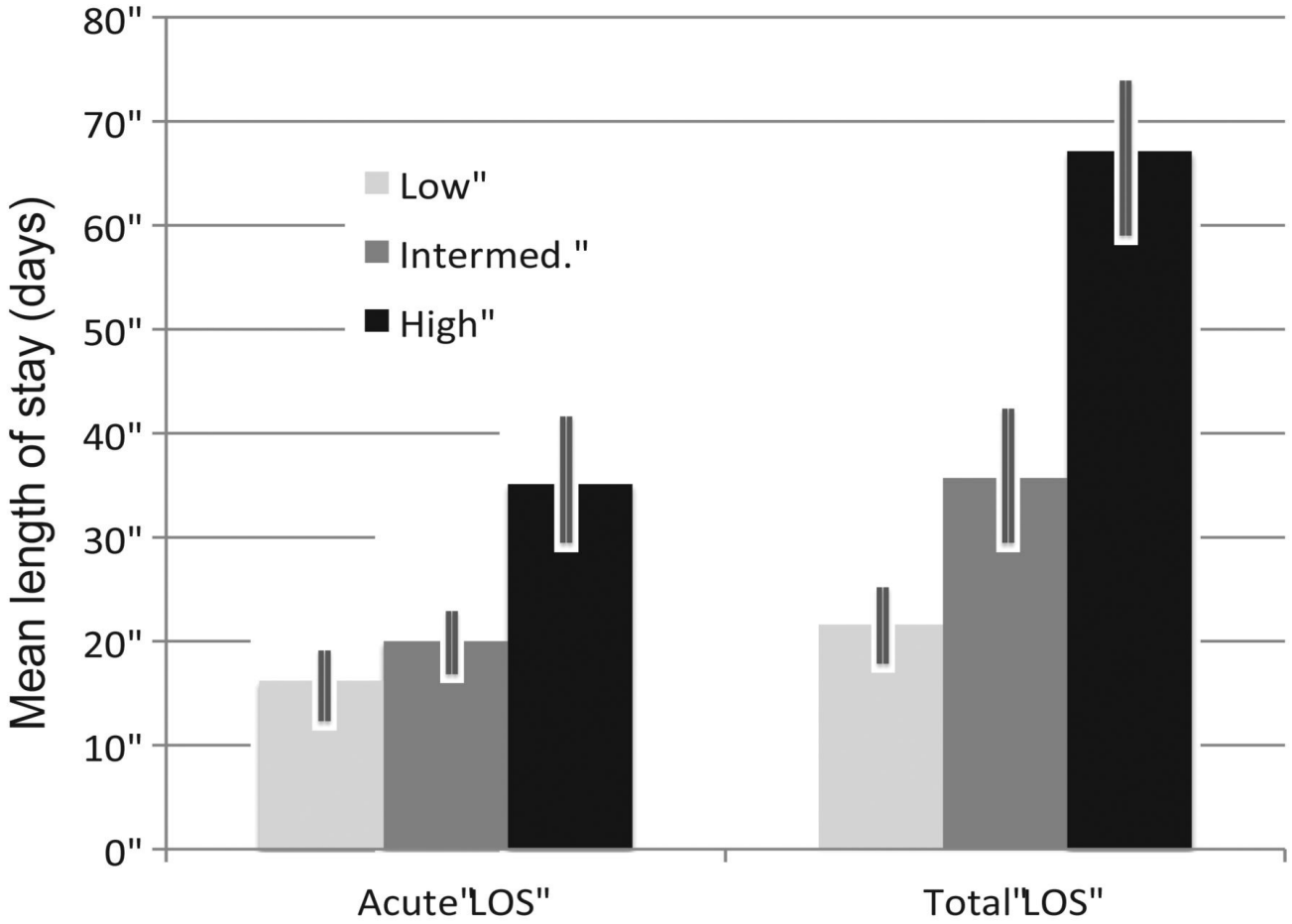
In very severe dementia they are often bedfast. Many are virtually mute.

DALHOUSIE UNIVERSITY

Rockwood K et al. A global clinical measure of fitness and frailty in elderly people. CMAJ 2005;173:489–495.

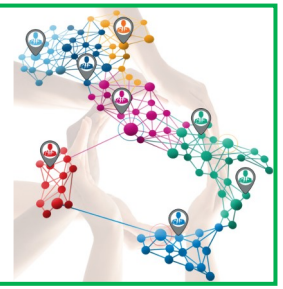
Frailty & Length of stay after hip fracture

Manju Krishnan et al. Age Ageing 2014;43:122-126



How we apply this in the module

Clinical vignette in the module



82 year old male admitted with hip fracture

Lives alone, own home, 2 steps

Background medical history

- Osteoporosis, previous wrist fracture
- Poorly controlled type 2 Diabetes on insulin
- BMI 29.

Preadmission:

- Single point stick
- Vision impairment
- Assistance with shopping
- Reports preparing own meals; enjoys gardening and fishing

We ask

Is he frail?

More information from family?

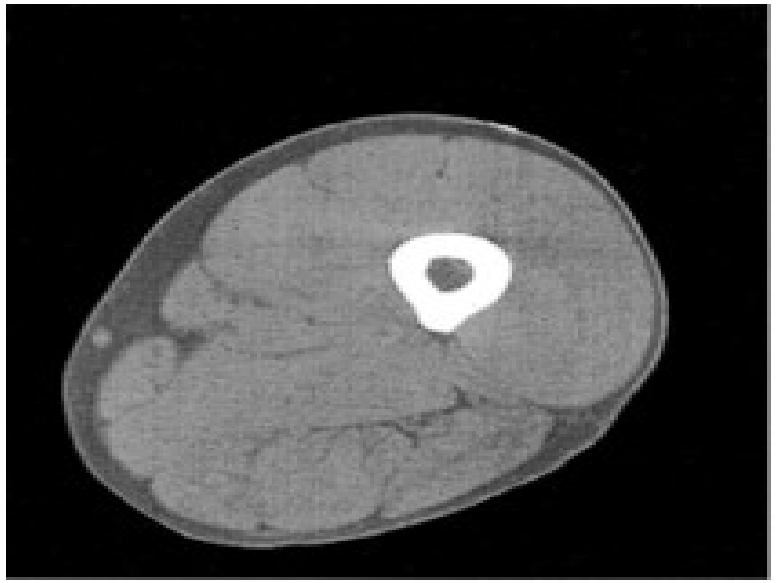
What should we do?

e.g. to reduce delirium risk

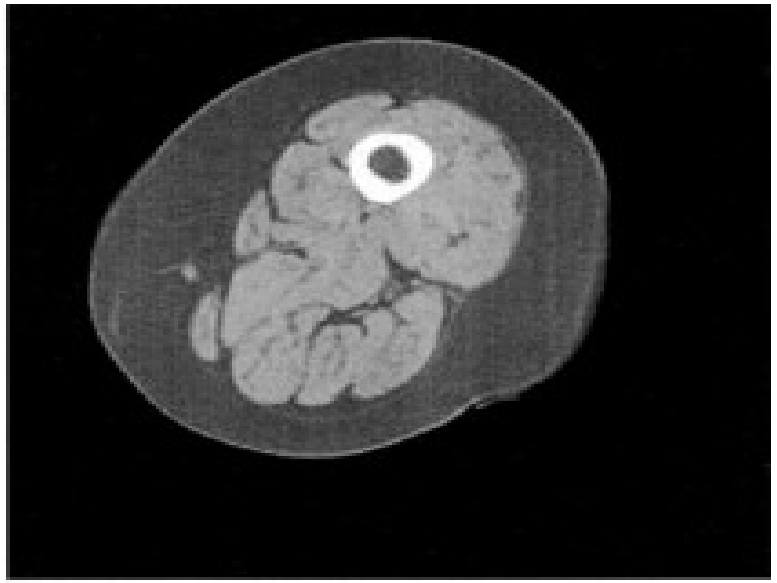
And we return to follow his progress

Sarcopenia

Irving Rosenberg
1989



Young, active



Old, sedentary

European Working Group on Sarcopenia in Older people (EWGSOP) -2019 update

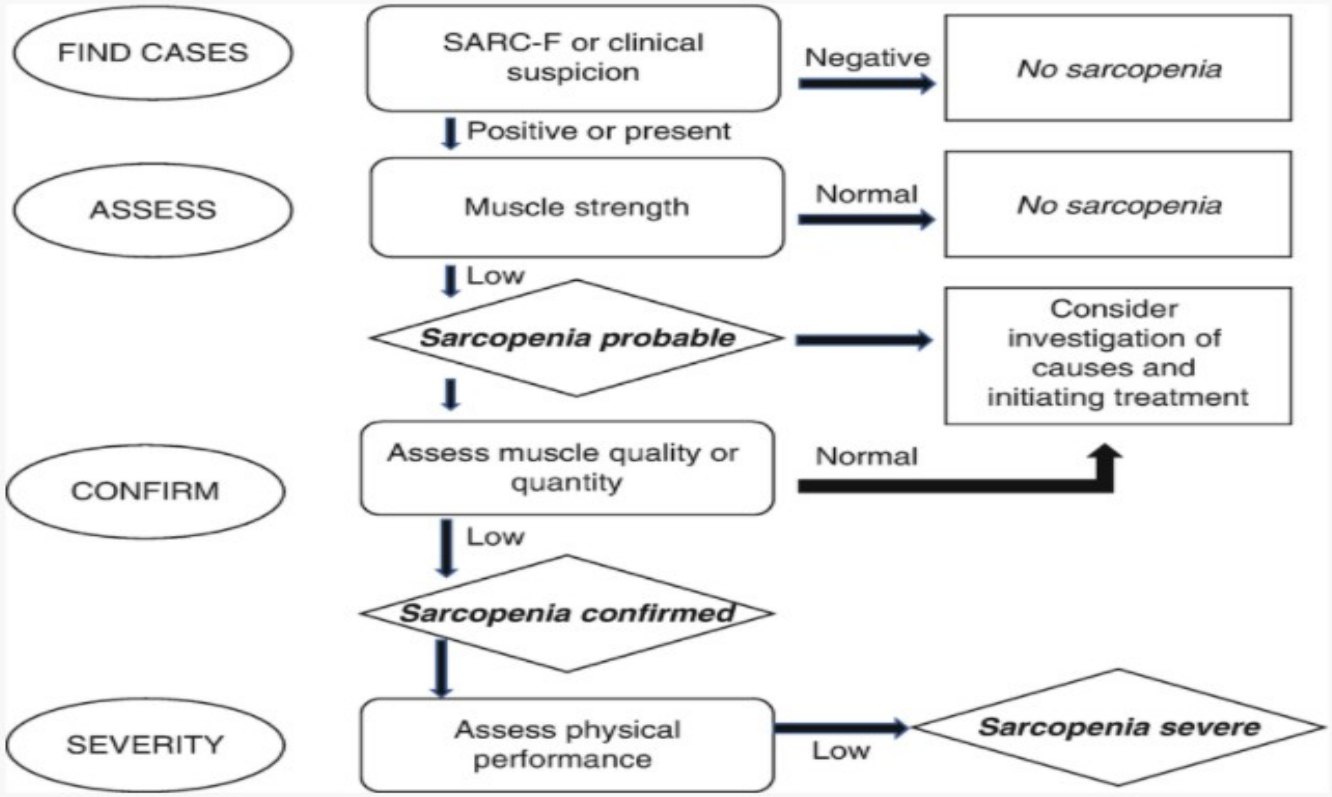


Fig. 4.5
The EWGSOP algorithm for the diagnosis and grading of sarcopenia (Adapted from Cruz-Jentoft AJ, Bahat G, Bauer JM, et al. (2019) Sarcopenia: revised European consensus on definition and diagnosis: Age Ageing; 48(1):16–31). Further details on how

Pathophysiology of Sarcopenia

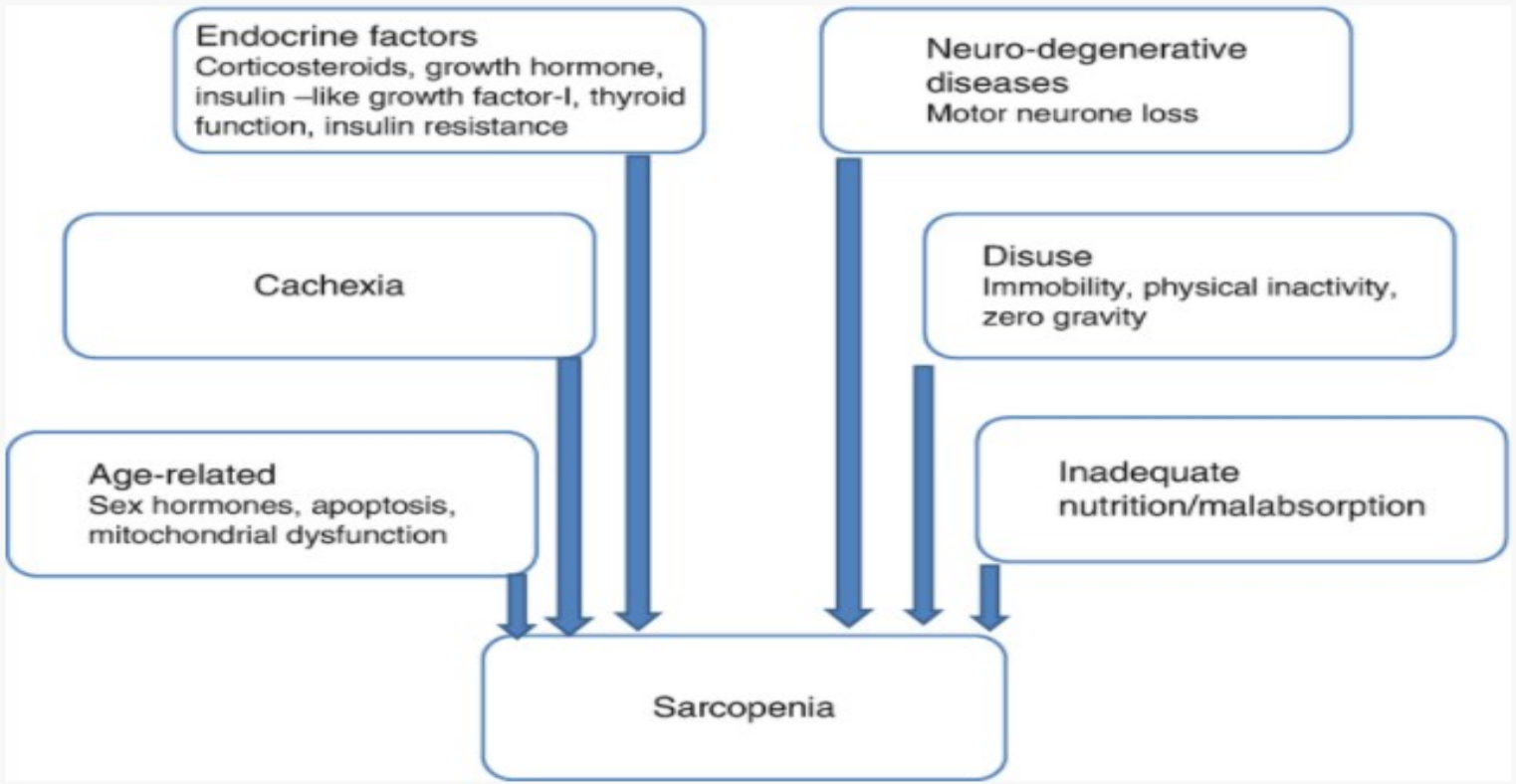
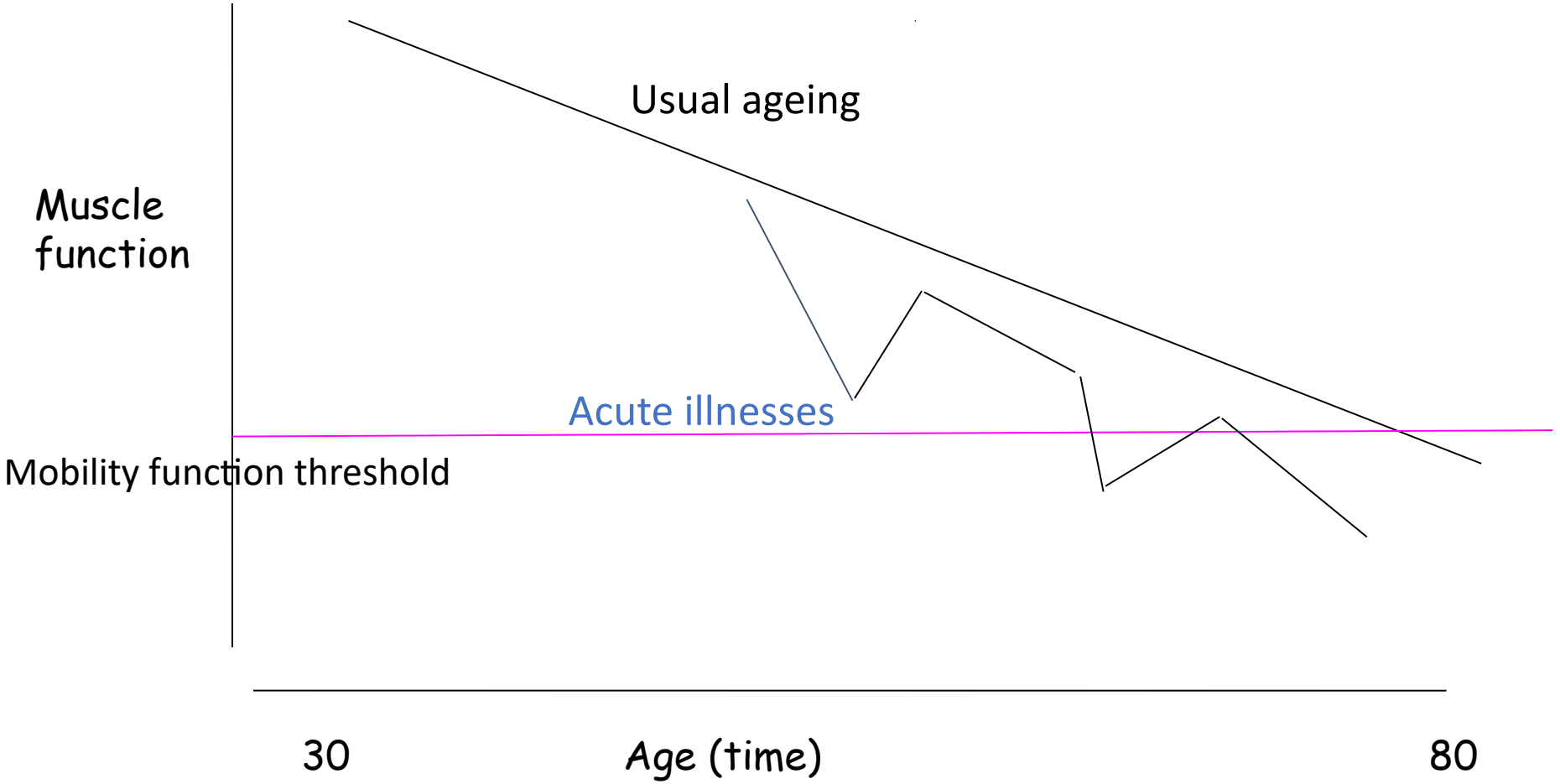


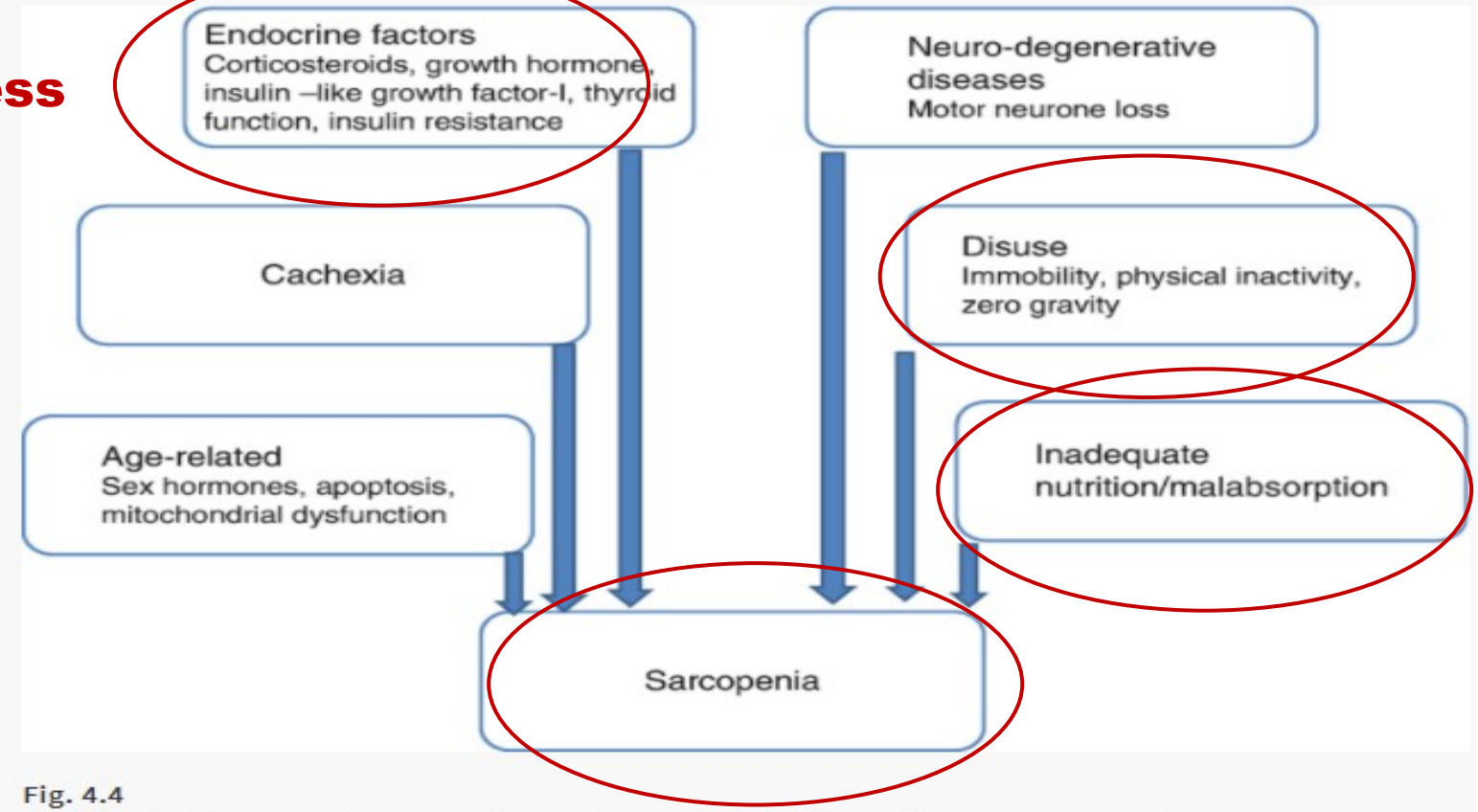
Fig. 4.4
Aetiological factors and mechanisms of sarcopenia (Adapted from Cruz-Jentoft AJ, Baeyens JP, Bauer JM, Boirie Y, Cederholm T, Landi F, Martin FC, Michel JP, Rolland Y, Schneider SM, Topinková E, Vandewoude M, Zamboni M. Sarcopenia: European consensus on definition and diagnosis: Report of the European Working Group on Sarcopenia in Older People. *Age Ageing*. 2010 Jul;39(4):412–23)

Lifecourse approach to development of sarcopenia



Effect of fragility fracture e.g. hip

Catabolic stress



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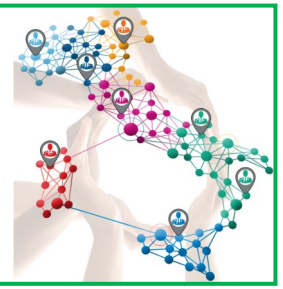
Immobility

anorexia

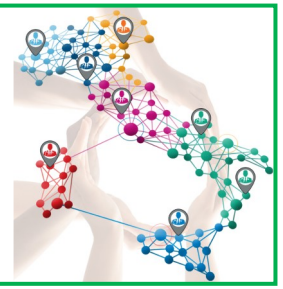
Can muscle function improve - YES



- ADL based functional exercise to ***reset***
- Strength and power training
- Reduce cachexia – treat infections etc
- Nutrition – protein and calories
- Endurance work to improve “fitness”

But it takes time and needs to be continued for months

The module



FFN Fragility Fracture Network — Interdisciplinary Management of Older Patients with Fragility Fracture — Module 3: Frailty, sarcopenia and fragility fracture

Time to reflect slide

Think of a person you know who developed severe sarcopaenia.

- *Who are some of the individuals who could have worked better together to prevent this from happening?*
- *Was there anything that your workplace could have actioned to support these health care alliances?*
- *Are there any systems, or service level processes that could be changed to prevent something like this in the future?*

Consider making a commitment to i) changing one thing in your practice in the next month; and ii) supporting a change in a system process within one year.

Write down your reflections and commitment (s) in your journal.

NEXT