Frailty

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GLMS Symposium 2024

Background & COI

Dual Trained Geriatrician and General Physician

Work 4 days a week at Middlemore in MAU and AT&R, Te Whatu Ora and one day a week at Greenlane Medical Specialists

Interests

- Quality Improvement, completed the Ko Awatea Quality Improvement Advisor course 2021
- Perioperative Medicine Short Course 2021

Work as a contractor for Summerset Retirement Villages NZ chairing the Medication Optimisation Group and the Falls group

Frailty

- Not a ‘visible’ condition
- Long term/chronic condition

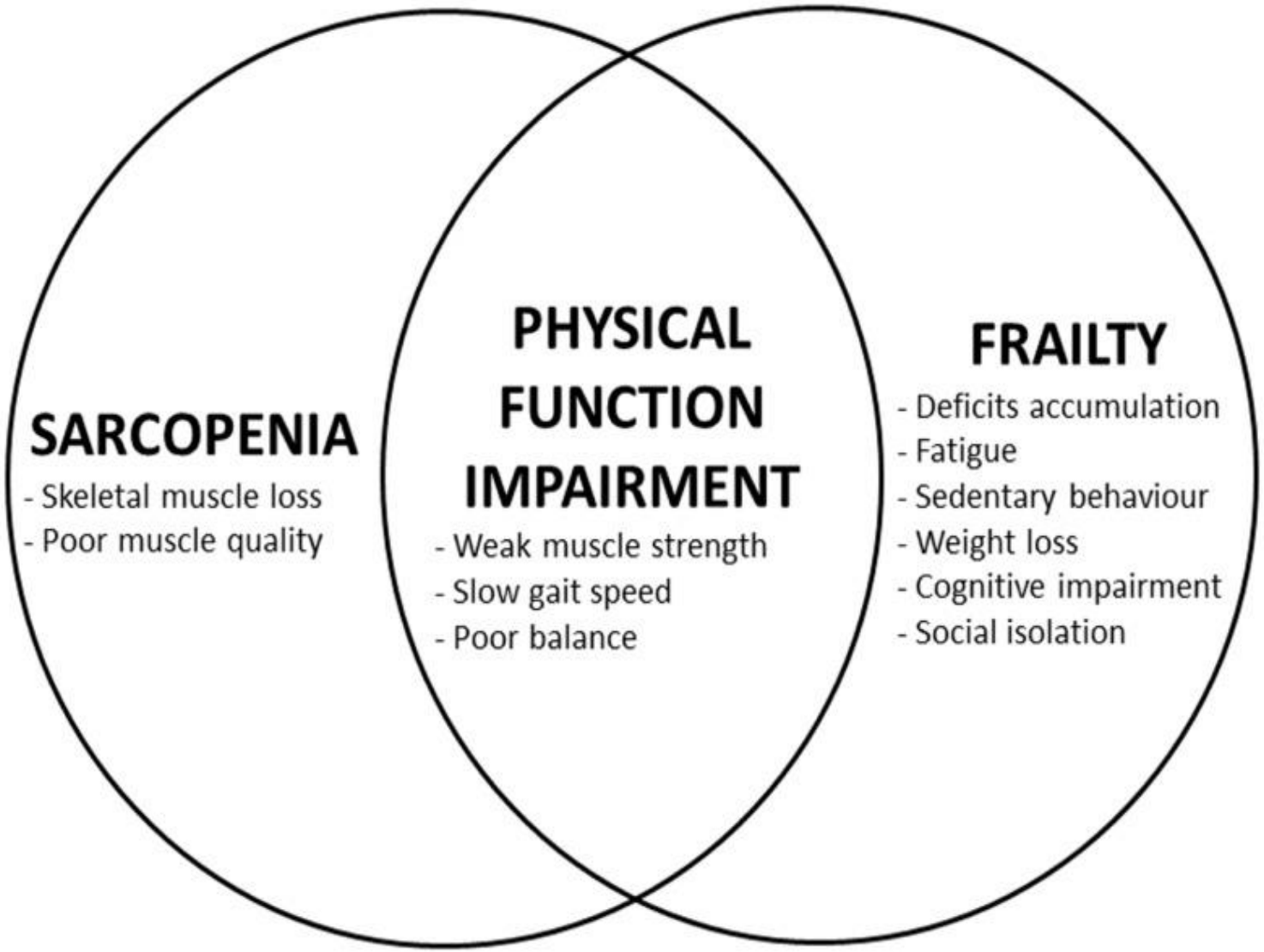
What frailty isn't….

What frailty is….

- Multidimensional syndrome of late life decline and vulnerability
- Characterised by weakness and ↓ physiologic reserve
- Frail older adults less able to adapt to stressors
- Increased risk for falls, institutionalization, disability and death

Definition of Frailty

- “a state of increased vulnerability to stressors due to age-related declines in physiologic reserve across neuromuscular, metabolic, and immune systems”
- Alterations in mobility, strength, endurance, nutrition, and physical activity
- Age, chronic co-morbidities and disability not included in definition, debate around including cognition (I do)

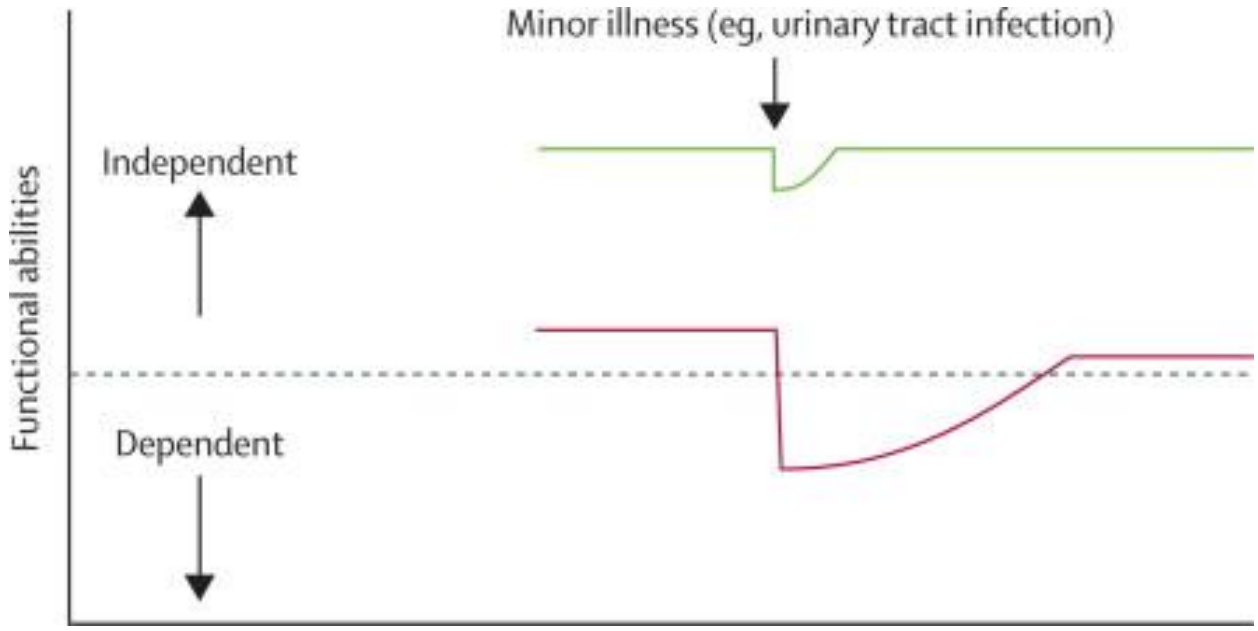

SARCOPENIA
- Skeletal muscle loss
- Poor muscle quality
PHYSICAL FUNCTION IMPAIRMENT
- Weak muscle strength
- Slow gait speed
- Poor balance
FRAILTY
- Deficits accumulation
- Fatigue
- Sedentary behaviour
- Weight loss
- Cognitive impairment
- Social isolation

Resilient

Frail

Robust	Subclinical frailty	Early Frailty	Late Frailty	End-stage Frailty
Resilient: Recovers readily from stressors	Appears resilient, but recovers slowly or incompletely from stressors and may manifest adverse consequences	Clinical appearance of being frail Poor tolerance of stressors; no disability	Clinical appearance of being frail Poor tolerance of stressors, very slow recovery Outcomes: disability due to decreased energy, strength	Clinical appearance of severe frailty, low strength, weight loss. Outcomes: dependent, high risk of death within 12 months

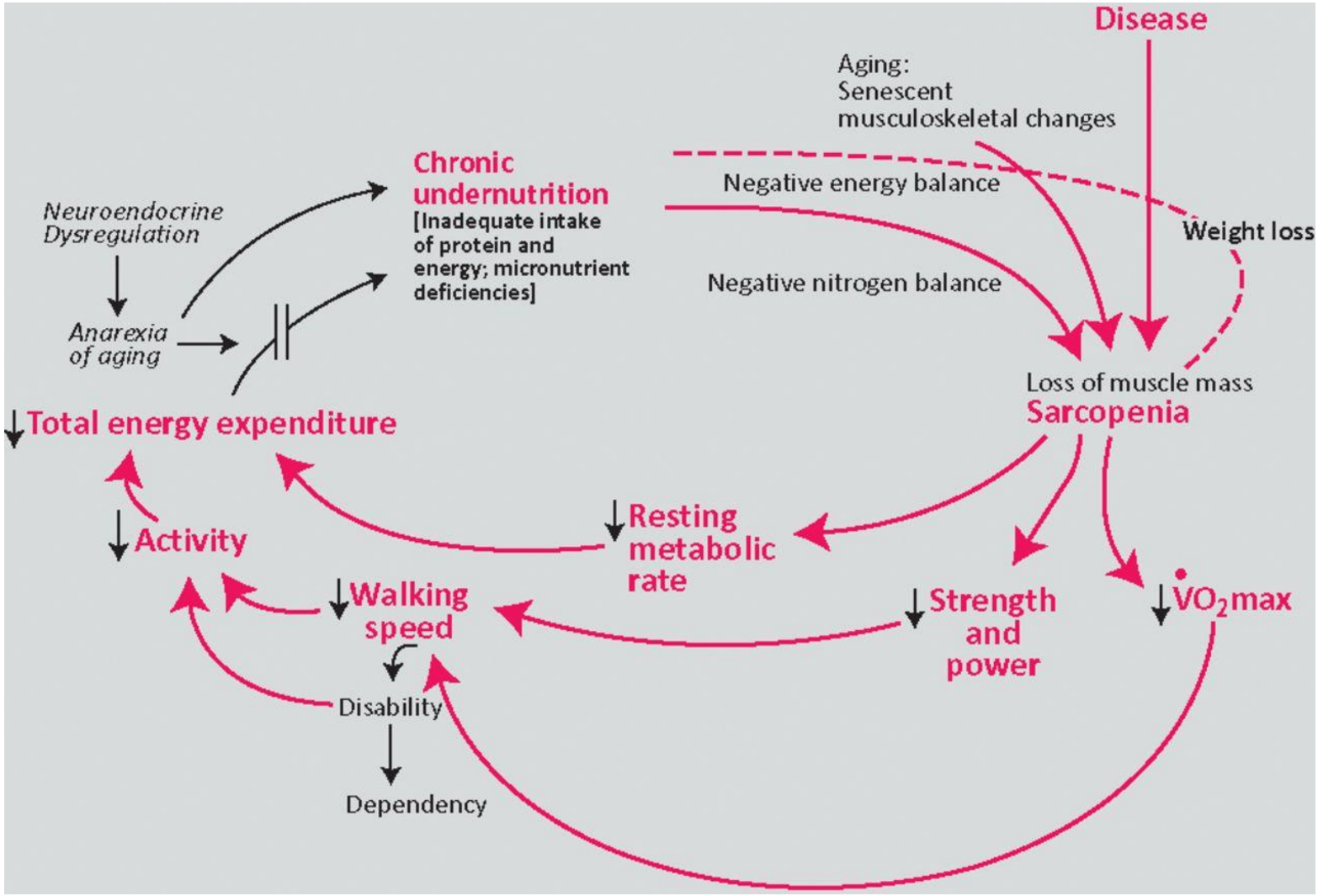
Vulnerability to sudden health change



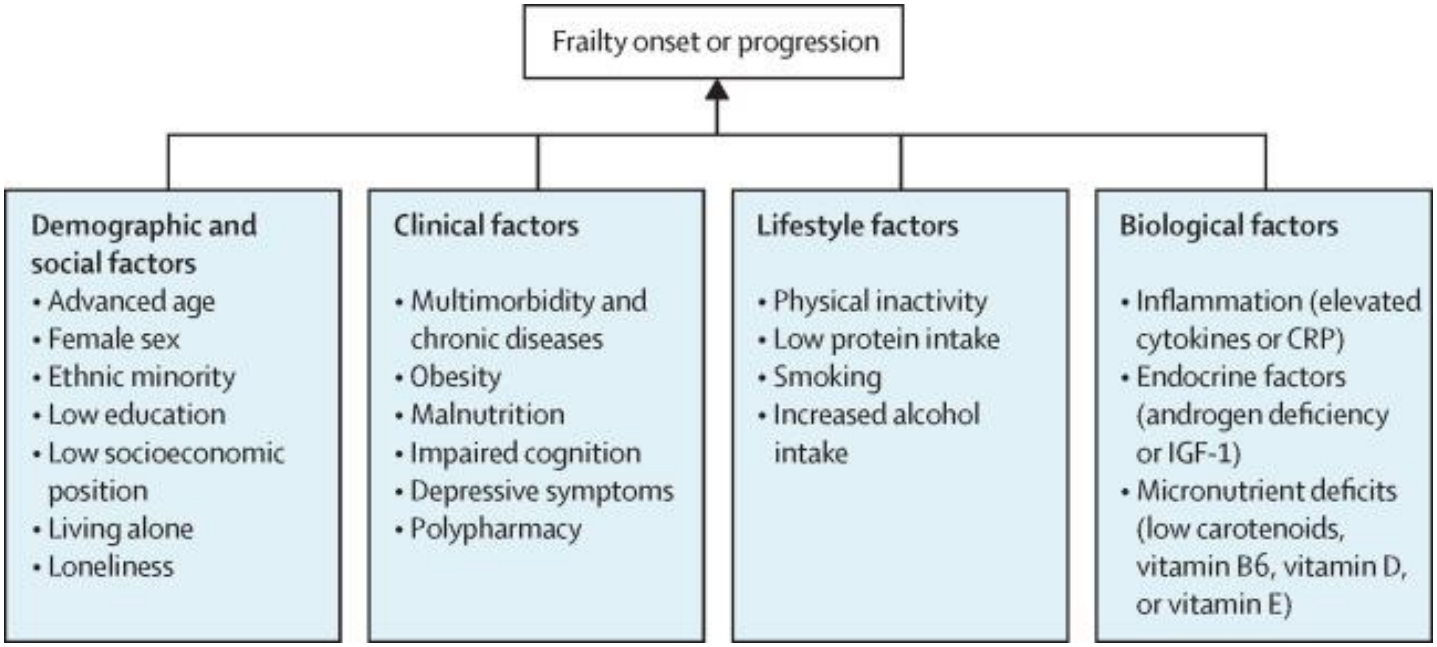
Falls and Frailty

- Falling is strongly linked to frailty
- When complex systems fail, they fail first with their higher order functions: processes that require a coordinated, integrated, and precise interaction between many components
- Walking can be considered a higher order function
- The frail older person, on the threshold of failure, can present with falls in the face of seemingly minor stressors
- Comprehensive and multifaceted assessment and management programmes are needed to reduce falls in frail older people

The frailty cycle



Frailty risk factors



Hoogendijk et al Lancet 2019 Oct 12;394(10206):1365-1375.

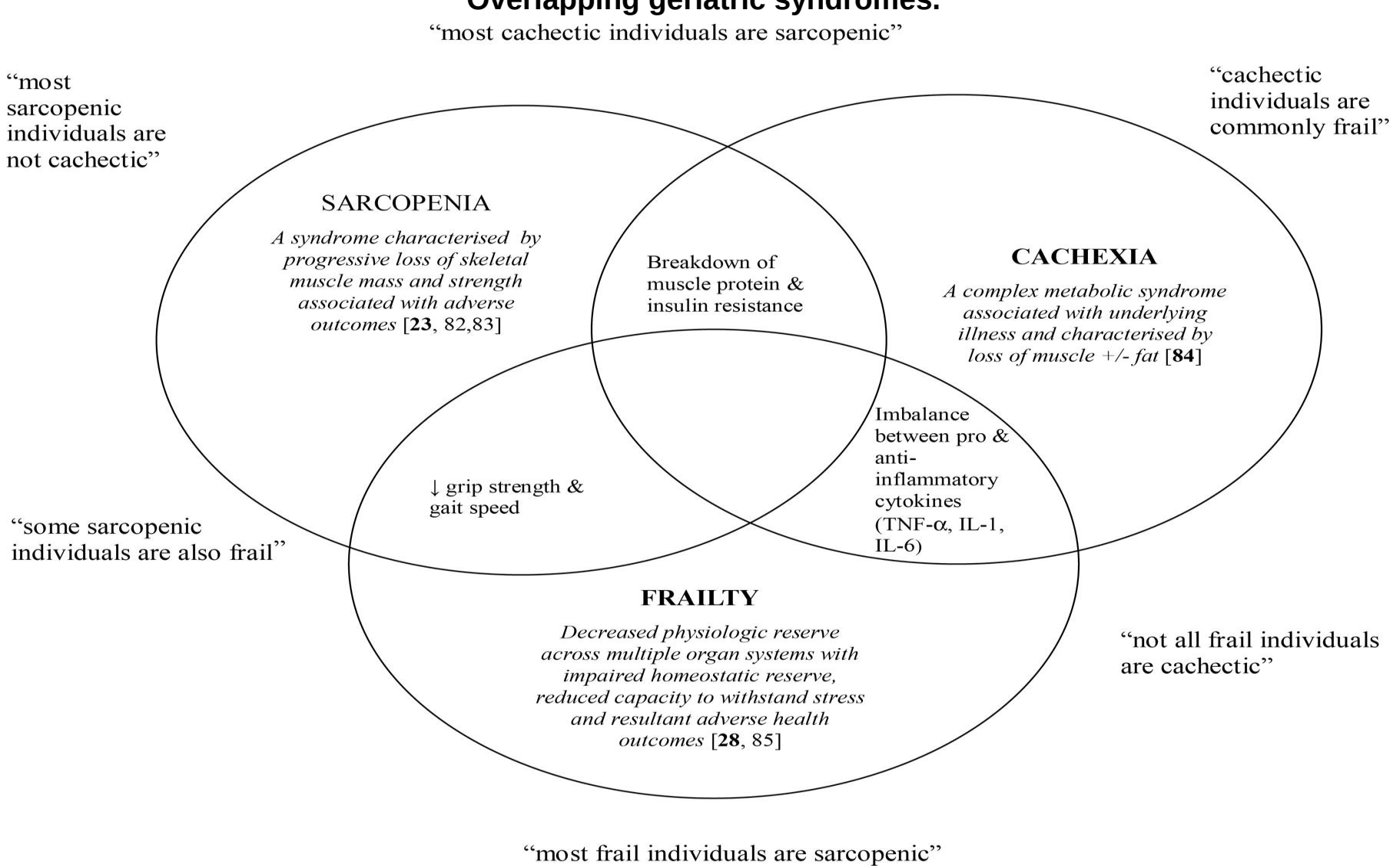
Sarcopenia

- Progressive loss of skeletal muscle mass and strength with advancing age
- Loss of physiological reserve in neuromuscular system
- Development due to:
  - Muscle fibre loss
  - Muscle fibre atrophy
  - Nutritional/hormonal/metabolic/immunologic

Sarcopenia

- Loss of muscle strength 1-3% per annum in older people
- Especially the oldest old
- Adversely affects functional independence
  - Critical basic mobility skills
  - Getting out of bed
  - Standing from chair
  - Walking short distance
  - Getting off the toilet

Overlapping geriatric syndromes.



Judith S. L. Partridge et al. Age Ageing 2012;41:142-147

age and ageing

How does frailty present?

- ‘Over-arching’ Geriatric syndrome

- Falls/Decreased mobility
- Delirium
- Urinary incontinence
- Decreasing functional independence

Measuring frailty

Too many options!

- Fried model/criteria
- SOF index
- Rockwood Frailty index
- Edmonton Frailty score
- Modified Frailty index
- Gronigen Frail Index

My go to = Clinical Frailty Score

CLINICAL FRAILTY SCALE

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, standby) 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 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.)

SCORING FRAILTY 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.

DALHOUSIE UNIVERSITY

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

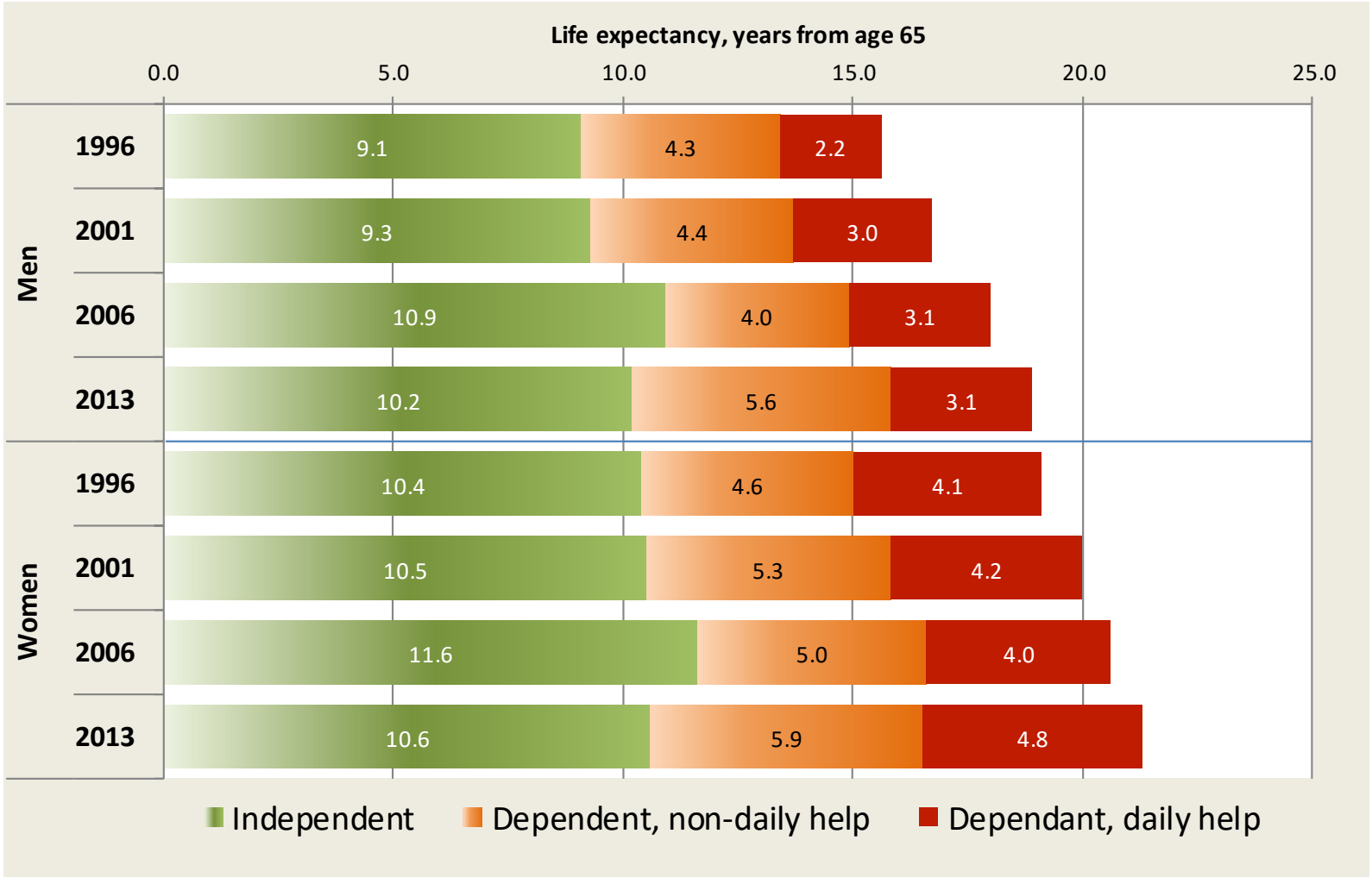
Online training module

- https://ddec1-0-en-ctp.trendmicro.com:443/wis/clicktime/v1/query?url=https%3a%2f%2frise.articulate.com%2fshare%2fdeb4rT02lvONbq4AfcMNRUudcd6QMts3%23%2f&umid=ce4eacee-7fbf-412a-916f-66a17b28c87f&auth=34fa837b49e6090184229998ee9514d99044fa50-0a57c5b3e28b203ea6d34252c66df98609489b3b

Frail scale (can be done over ph)

- FRAIL Questionnaire Screening Tool.
- Fatigue: Are you fatigued? (yes=1 point)
- Resistance: Can you walk up one flight of stairs? (no=1 point)
- Aerobic: Can you walk more than a block? (no=1 point)
- Illnesses: Do you have more than five illnesses? (yes=1 point)
- Loss of weight: Have you lost more than 5% of your weight in the past 6 months? (yes=1 point)
- Scoring: ≥3 points=frail; 1–2 points=prefrail; 0 points=robust.

Healthy life expectancy at age 65 years



Data source: Ministry of Health 2015, custom request

Adverse Outcomes

- Increase residential care admission
- Increased levels of dependency
- Increased risk of death
- Increased rates of falls/fractures
- Increased rates ED admission
- Increase length of stay
- The list goes on….

3 year outcomes for older people

Covariate adjusted three-year hazard ratios (95% confidence interval)

Outcome	No frailty	Intermediate frailty	Frail
Worsening ADL/disability	1.0	1.7 (1.4–2.0)	1.9 (1.5–2.6)
Hospitalisation	1.0	1.1 (1.0–1.3)	1.3 (1.1–1.5)
Death	1.0	1.5 (1.1–2.0)	2.2 (1.5–3.3)

No frailty: none of the five operationalised Fried criteria for frailty (unintentional weight loss, exhaustion, low energy expenditure, slowness, weakness).
Intermediate: one or two criteria.
Frail: three or more criteria.
ADL = activities of daily living.

Surgical outcomes in frail patients

- Increased length of stay
- Increased post-operative complications
- Increased in-hospital, 30 day and 6 month mortality
- Increased post-operative delirium
- Increased institutionalization (26-30%)

Basis of frailty management

- MDT-delivered assessment/treatment
- Exercise and nutrition
- Optimise comorbidities
- Rationalise medications
  - STOPP/START, STOPPFrail…
- Explore impact of illness on patient/family
- Referrals as needed

STOPPFrail

- Screening Tool of Older Persons Prescriptions in Frail adults with limited life expectancy
- List of criteria for potentially inappropriate medicine use in frail older adults with limited life expectancy. It is designed to assist physicians with stopping such medication in older patients (≥65 years) who meet ALL of the criteria

STOPPFrail

- End-stage irreversible pathology
- Poor one year survival prognosis
- Severe functional impairment or severe cognitive impairment or both
- Symptom control is the priority rather than prevention of disease progression

STOPPFrail

- The decision to prescribe/not prescribe medications to the patient should also be influenced by the following issues
  - The benefits of the medication are outweighed by its risks
  - Administration of the medication is challenging
  - Monitoring of the medication effect is challenging
  - Drug adherence/compliance is difficult

Top 5 medicines to deprescribe in Frailty

- Statins – more than 5 years since CV event and for primary prevention
- Anti platelets for primary CVD prevention
- Long term prophylactic abx for cellulitis or UTIs
- Neuroleptic antipsychotics
- Diabetic oral agents, aim for monotherapy and HbA1c 65-70

Prescribing

- Increased risk of ADR with increased frailty
- Consider goals of care
- Improvement in QOL through symptom control
- Risks of secondary prevention may outweigh benefits

Preventable components

Risk factors identified for functional decline in later life	
Falls	Affect
Medications	Alcohol
Cognition	Hearing
Vision	Co-morbidity
Nutrition	Physical activity
Social isolation	Smoking

Interventions

- Potential to prevent disability and improve health and wellbeing
- Sarcopenia
  - Physical activity (esp strength and balance training) improve muscle strength and functional abilities
  - Improved mobility and ADL's in residential care
  - Improve functional status in community

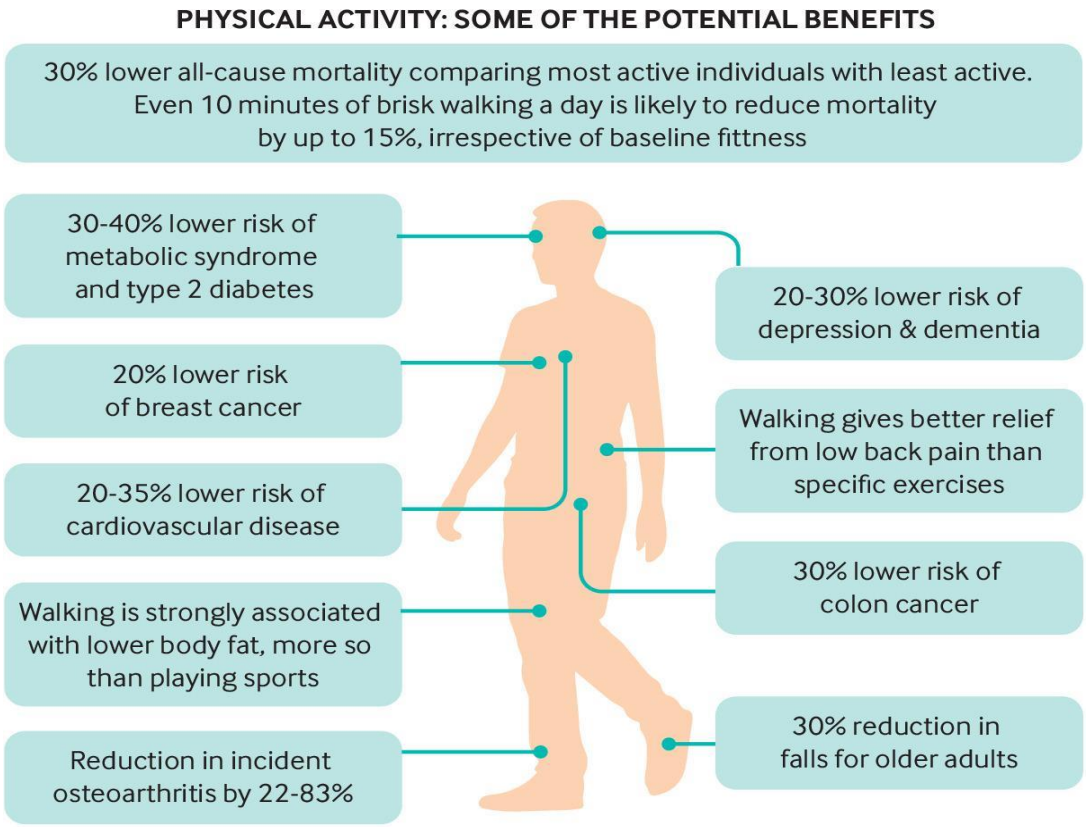
Interventions

- Chronic undernutrition
  - Interventions less effective
  - Supplementation doesn't improve function
- Pharmacological
  - Anabolic steroids }
  - Statins } no evidence of benefit
  - ACE inhibitors }

Is frailty preventable?

- FIT trial
- Multifactorial intervention including exercise that targets frailty
- Reduced frailty (Fried criteria) NNT 7
- Improved mobility
- No difference in falls

The health benefits of walking and achievement of recommended levels of physical activity, adapted from Public Health England '10 minutes brisk walking each day in mid-life for health benefits and towards achieving physical activity recommendations'4 and UK Department of Health 'Start Active Stay active'5.



Christine Haseler et al. BMJ 2019;366:bmj.l5230

The miracle cure

Be as active as you can, in as many ways as possible, as often as you can.

Doing something is better than nothing.

Every little bit counts towards better health.

Haseler et al BMJ 2019; 366:l5230

Take home points

- Frailty is common in older adults
- Include it in your problem list
- Frailty and falls strongly related

- Frailty management is:
  - Complex
  - Multidimensional
  - A team approach