



# Screening and assessing frailty

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## Setting the scene

- Worldwide population is ageing
- Impacts healthcare planning and provision
- The most problematic expression of population ageing is the clinical condition of FRAILITY
- State of pre-disability
- Increasing prevalence with ageing
- Independent risk factor of disability, institutionalisation and mortality



# Frailty $\neq$ Age

## Affects:

- Around 10% of over 65s
- Over 25% of over 85s (some studies >50%)
- 1 in every 10 community dwelling older adults
- 1 in 2 RACF residents

**Frailty lies outside the comfort zone of  
Guideline Based Medicine**





## May (otherwise) be known as...

Failure to thrive

Dwindles

Declining

A/O x 1 or 2

Confused

Poor historian

Malodorous

Recent discharge

Recurrent admissions

Unkempt

Nursing home resident

Weight loss

Age 75 or over

Non-compliant

Needs assistance, has caregiver,  
carer fatigue

Falls

Acopia

# Formal definitions

“a state of increased vulnerability to stressors due to age-related declines in physiologic reserves across neuromuscular, metabolic, and immune systems”

[American Geriatric Society 2004](#)

“a medical syndrome with multiple causes and contributors that is characterised by diminished strength, endurance, and reduced physiological function, that increases an individual’s vulnerability for developing increased dependency and/or death”

[J Am Med Dir Assoc \(JAMDA\) 2013](#)

# Frailty Phenotype

5 clinical criteria (Fried's frail elements):

- Weakness
- Slowed gait speed
- Inactivity/Low physical activity
- Poor endurance/exhaustion
- Weight loss

Community-dwelling

- 7% of > 65 year olds
- 30% of > 80 year olds

## Characteristics of Frailty



Shrinking: Weight Loss (unintentional)



Sarcopenia (loss of muscle mass)



Weakness



Poor endurance; Exhaustion



Slowness



Low Activity

## CV health Study measure

Baseline: >5kg lost unintentionally in prior year

Grip strength: lowest 20%

“Exhaustion” by self report

Walking time/15 feet

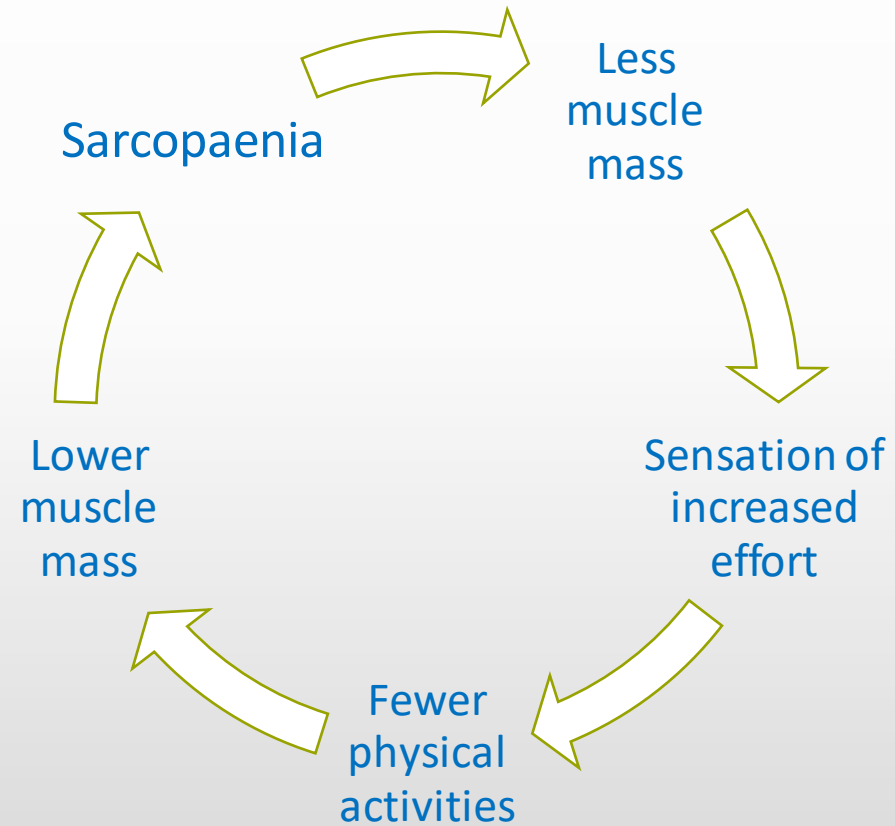
Kcals/week

Robust: no clinical criteria

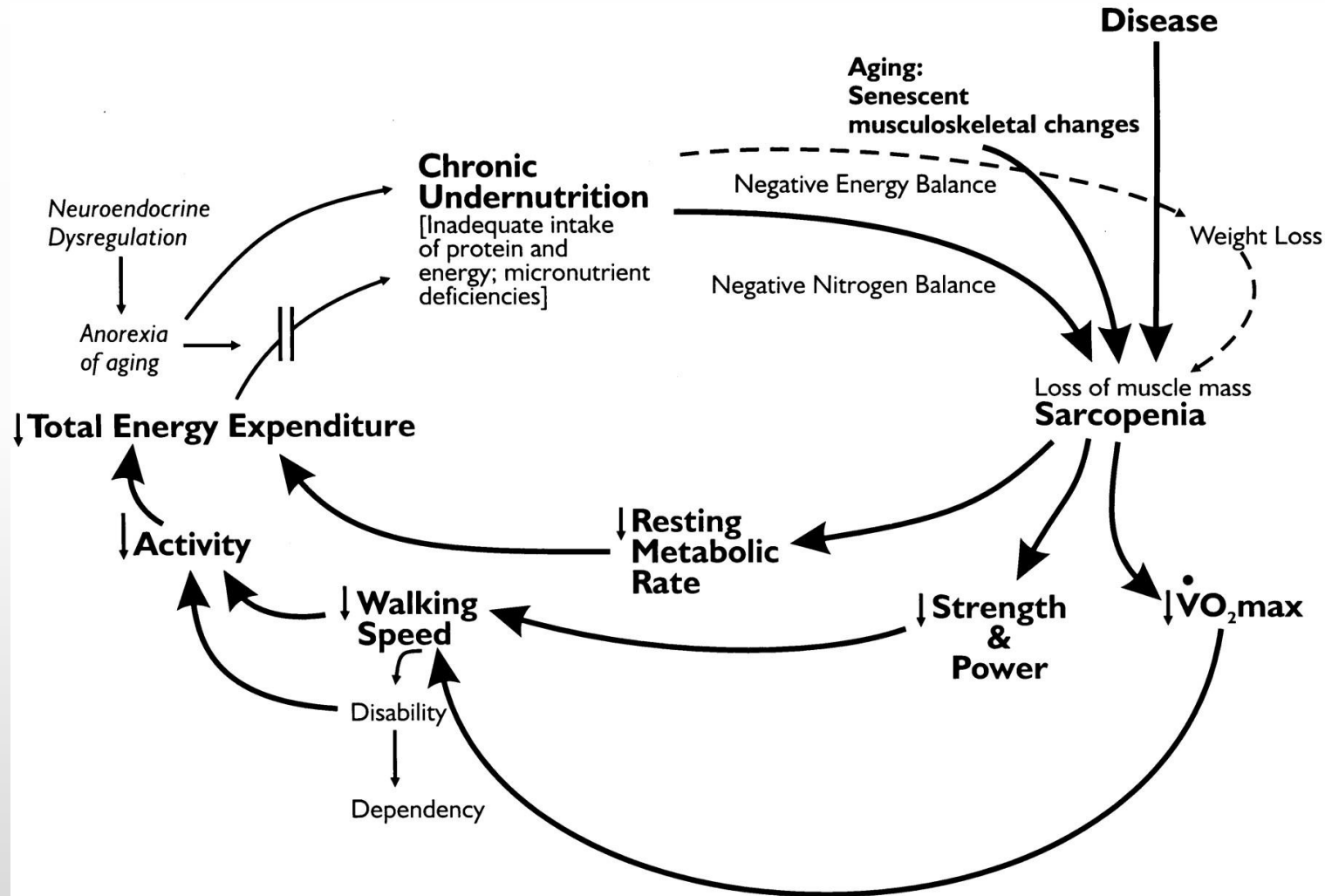
Pre-frail: 1 or 2 clinical criteria

Frail: 3 or more clinical criteria

# Cycle of functional decline



# Hypothesized Cycle of Frailty



Fried LP et al. J Gerontol A Biol Sci Med Sci 2001;56:M146-M157

The Gerontological Society of America



# Frailty Index

“The more things that are wrong with you, the more likely you are to be frail”

- Canadian study of health and ageing
- Simple calculation of the presence or absence of a variable
- Originally based on 92 baseline variables
- Cumulative effect of individual deficits
- 92 reduced to 36 without loss of predictability
- Relates to the risk of adverse outcomes

## Scoring:

- Index ranges from 0 to 1
- 0 - 0.12 = Fit
- 0.13 – 0.24 = Mild Frailty
- 0.25 – 0.36 = Moderate Frailty
- >0.36 = Severe Frailty

For example, if 20 deficits out of a possible 40, 20/40 gives an index of 0.5.

# The frailty condition

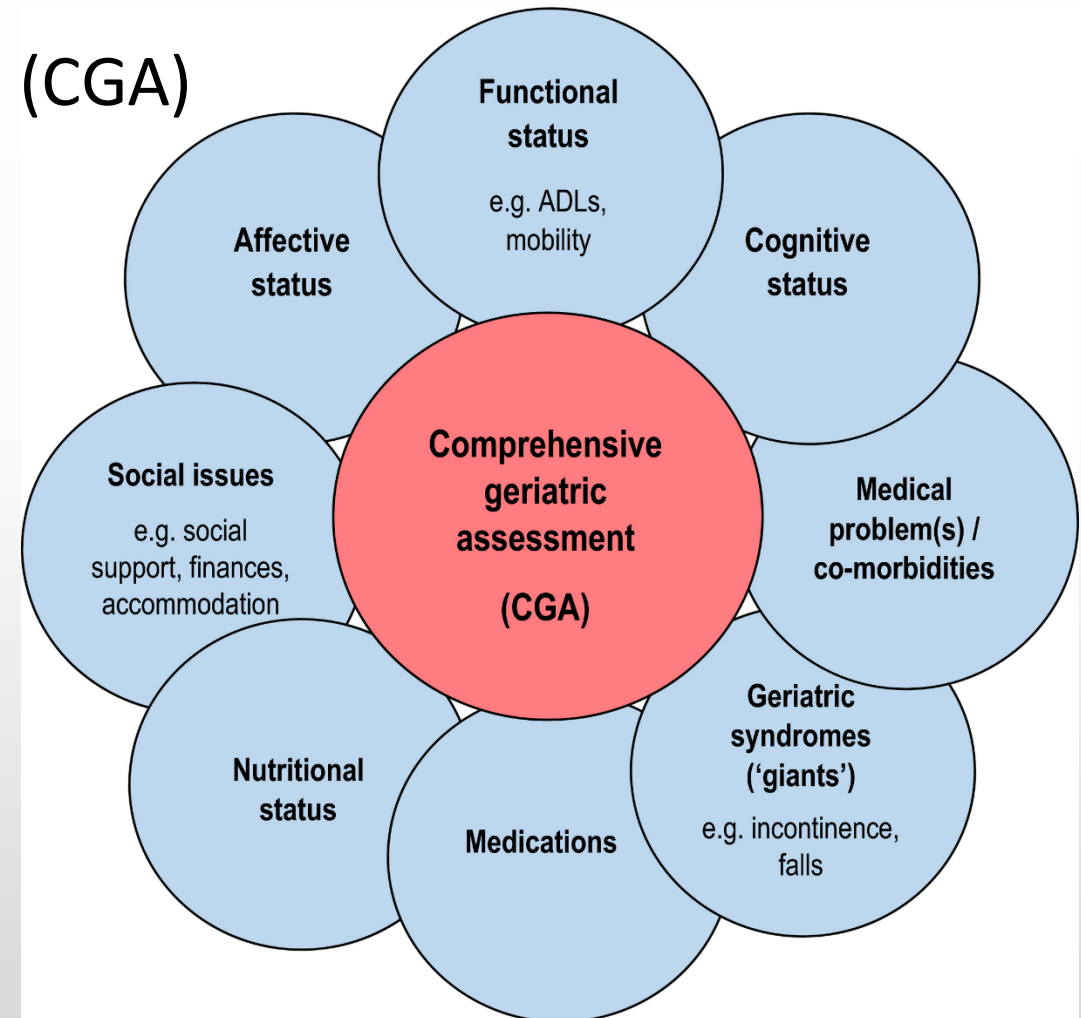
- Related to the ageing process
- Independently associated with adverse outcomes
- Common
- Progressive
- Episodic deteriorations
- Preventable components
- Impacts quality of life
- Expensive
- Manifests as fatigue, weight loss, falls, delirium and fluctuating disability

Harrison J, Clegg A, Conroy S, Young J. Managing frailty as a long-term condition. *Age Ageing* 2015;44:732-5.

# Identifying Frailty in Practice

## 1. Comprehensive geriatric assessment (CGA)

- Structured, multidisciplinary assessment
- Functional Ability
- Physical assessment
- Cognitive assessment
- Psychological assessment
- Social/environmental assessment



# Geriatricians Identify Frailty

At least 50% of Geriatricians cited each of the following associated characteristics of frailty

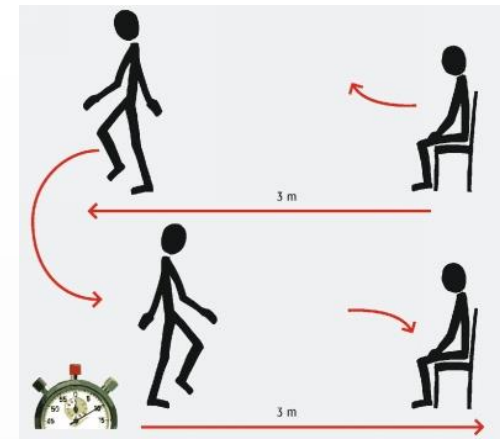
- Under nutrition
- Functional dependence
- Prolonged bedrest
- Pressure sores
- Generalized weakness
- Aged >90
- Weight loss
- Anorexia
- Fear of falling



- Dementia
- Hip fracture
- Delirium
- Confusion
- Going outdoors infrequently
- Polypharmacy

Fried LP, Walston J. Principles of Geriatric  
Medicine & Gerontology 5<sup>th</sup> ed. 2003:1487-1502

# Identifying Frailty in Practice



## 2. Simple assessment

- Gait speed
- Timed-up-and-go test (TUGT)
- Chair stands
- PRISMA-7 Questionnaire
- FRAIL Scale (self assessment)

### The “PRISMA 7” Questions

1. Are you more than 85 years?
2. Male?
3. In general do you have any health problems that require you to limit your activities?
4. Do you need someone to help you on a regular basis?
5. In general do you have any health problems that require you to stay at home?
6. In case of need, can you count on someone close to you?
7. Do you regularly use a stick, walker or wheelchair to get about?

TUGT > 10 seconds

Positive predictive value = 0.17

Negative predictive value = 0.99

Very good for excluding frailty

For identifying frailty:

TUGT>10s = Sensitivity 0.93, specificity 0.

Raiche M, et al. PRISMA-7: A case finding tool to identify older adults with moderate to severe disabilities. *Archives of Gerontology and Geriatrics* 2008;47:9-18.

Podsiadlo, D. et al. The timed, Up & Go: a test of basic functional mobility for frail elderly persons. *Journal of American Geriatric Society* 1991;39:142-8.

# Identifying Frailty in Practice

## 3. Routine data

- Electronic frailty index (eFI)

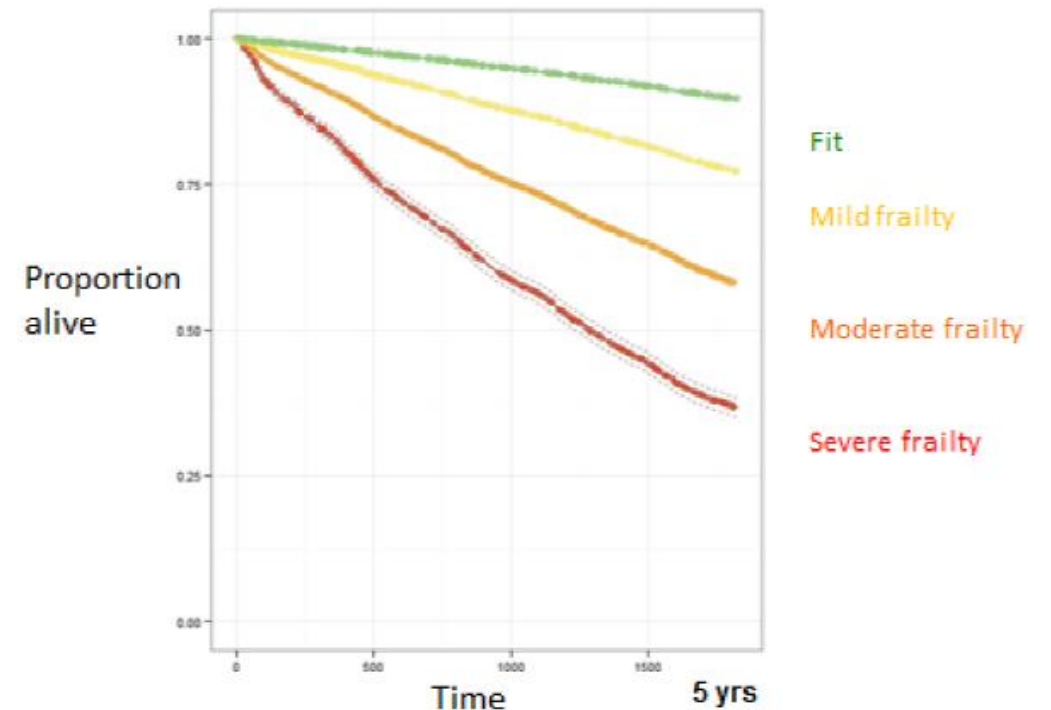
### Preliminary Predictive Validity of Primary Care Electronic Frailty Index (eFI)

N=454,051 > 65y; 43 'deficits'; 2,233 Read codes

Frailty Grade	Prevalence	1y Mortality	5y Mortality
Mild	23%	2.31	2.03
Moderate	2.3%	3.97	3.28
Severe	0.2%	5.99	7.13

Useful when discussing planning future care needs / interventions??

Primary care electronic Frailty Index (eFI): survival plots



Accuracy of frailty instruments against a reference standard

Young J. 2014 Frailty is the future talk.

# List of 36 Deficits Contained in the eFI

- Activity limitation
- Anaemia & haematinic deficiency
- Arthritis
- Atrial fibrillation
- Cerebrovascular disease
- Chronic kidney disease
- Diabetes
- Dizziness
- Dyspnoea
- Falls
- Foot problems
- Fragility fracture
- Hearing impairment
- Heart failure
- Heart valve disease
- Housebound
- Hypertension
- Hypotension/syncope
- Ischaemic heart disease
- Memory & cognitive problems
- Mobility and transfer problems
- Osteoporosis
- Parkinsonism & tremor
- Peptic ulcer
- Peripheral vascular disease
- Polypharmacy
- Requirement for care
- Respiratory disease
- Skin ulcer
- Sleep disturbance
- Social vulnerability
- Thyroid disease
- Urinary incontinence
- Urinary system disease
- Visual impairment
- Weight loss & anorexia



## 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.

\* 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;173:489-495.



# What Don't We Know About Frailty?

- No consensus definition – despite attempts
- No consensus clinical assessment measure
- No diagnostic biomarkers or imaging
- No animal model (recent lab mouse model)



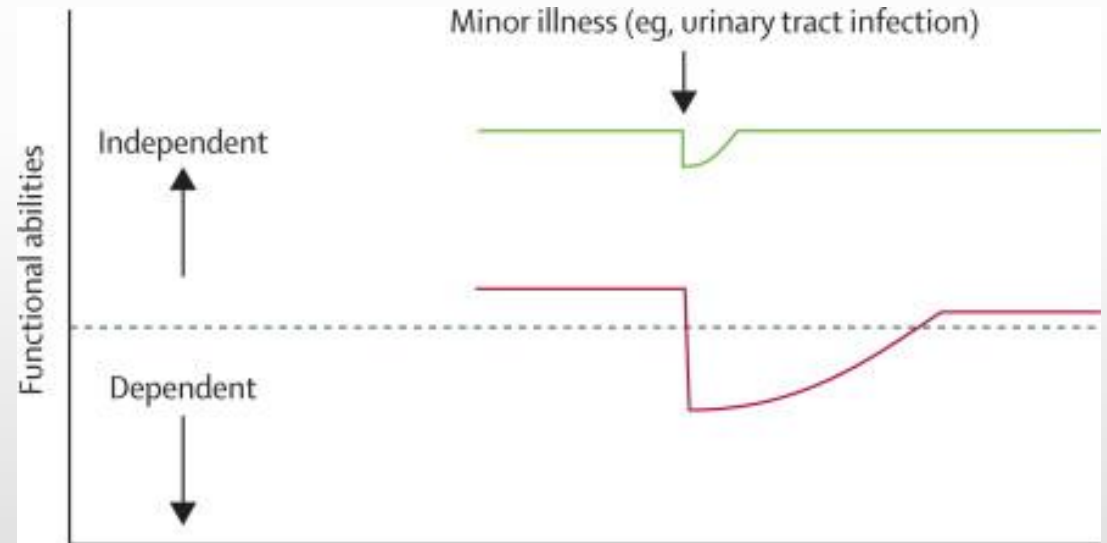
'YOU'RE DELIBERATLY PUTTING YOURSELF AT RISK OF ILL HEALTH BY BEING OVER 65...'

# Associations with frailty

- Adverse outcomes
- Worsening disability
- Falls
- Admission to hospital
- Increasing length of stay
- Risk of admission to long term care
- Death



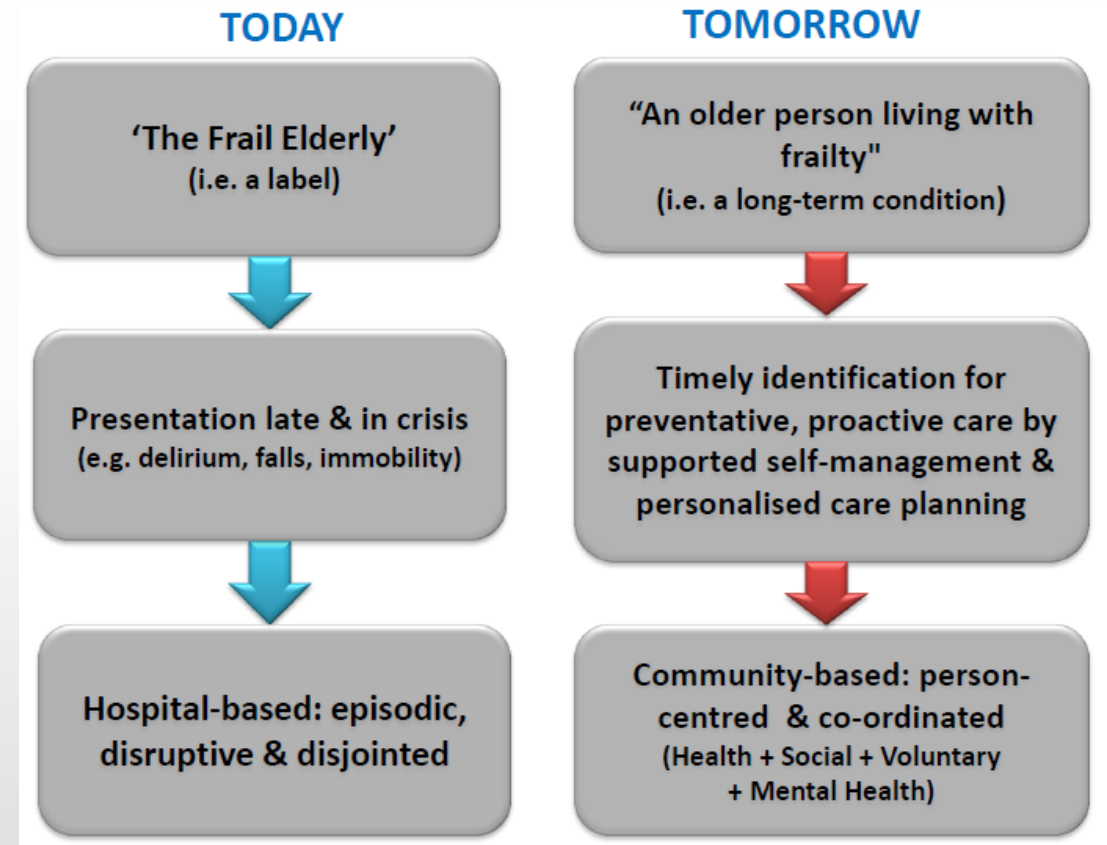
Vulnerability of frail elderly people to a sudden change in health status after a minor illness.



Clegg A, et al. Frailty in elderly people. *Lancet*. 2013; 381: 752 – 762.

# Frailty is Here: New care model for older people & frailty

- Is important to prepare for and aim to postpone
- Important to recognise as a state of vulnerability to poor recovery from simple stressor events
- Failure to detect frailty potentially exposes patients to interventions from which they might not benefit and may be harmed
- Recognising advancing frailty should trigger a proactive care approach to EOL care planning



Young J. 2014 .A primary care-based model for frailty.  
Kingsfund presentation

# Thank You



# References:

1. ERBP: Clinical Practice Guidelines of of older patient with chronic kidney disease stage 3b or higher.
2. Clark et al. Frailty in end-stage renal disease: comparing patient, caregiver and clinician perspectives. BMC Nephrology (2017).
3. Chowdhury R. Frailty and chronic kidney disease: a systematic review. Gerontology and Geriatrics (2016).
4. Nixon A, Bampouras T. Frailty and chronic kidney disease: current evidence and continuing uncertainties. Clinical Kidney Journal, 2018, Vol 11, 2:236-245.
5. NHS England. Toolkit for general practice in supporting older people with frailty. 2014.
6. <http://www.bgs.org.uk/index.php/fit-for-frailty>
7. <http://www.york.ac.uk/inst/crd/effectivenessmatters.htm>
8. Report by the comptroller and auditor general. End of life care. HC 1043 Session 2007-2008 | 26 November 2008.
9. Morley et al. Frailty consensus: a call to action. J Am Med Dir Assoc 2013;14:392-7.
10. Brocklehurst's Textbook of Geriatric Medicine and Gerontology, 8<sup>th</sup> Ed, Chapter 14: Frailty.



# Pathways

- [Frail But Stable Older Persons](#)
- [Falls Screening and Prevention](#)
- [Cognitive Impairment and Dementia](#)
- [Delirium](#)
- [Unexpected Deterioration in an Older Person](#)
- [Before Entering a Residential Aged Care Facility \(RACF\)](#)
- [Carer Health](#)
- [Advance care planning](#)

## Referral Pathways

- [Older Person's Health Referrals](#)
  - [Rehabilitation services](#)
  - [Driving fitness assessment](#)
  - [Allied Health and Nursing](#)
- plus many more...

## Launching soon

- Older Persons' Weight and Nutrition
- Older Person's Annual 75+ Health Assessment
- Depression in Older Persons
- Medication Management and Polypharmacy in Older Persons



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