



# AN INTRODUCTION TO FRAILTY

UDESH NAIDOO

# WHO'S WHO?



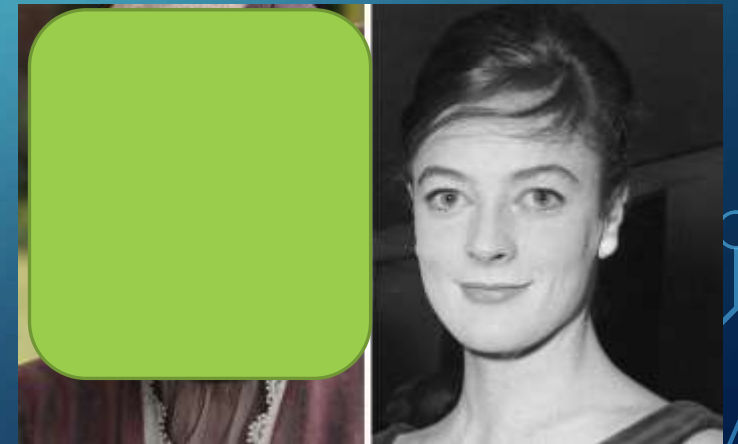
Sean Connery - 89



Samuel L Jackson - 71



David Attenborough - 93

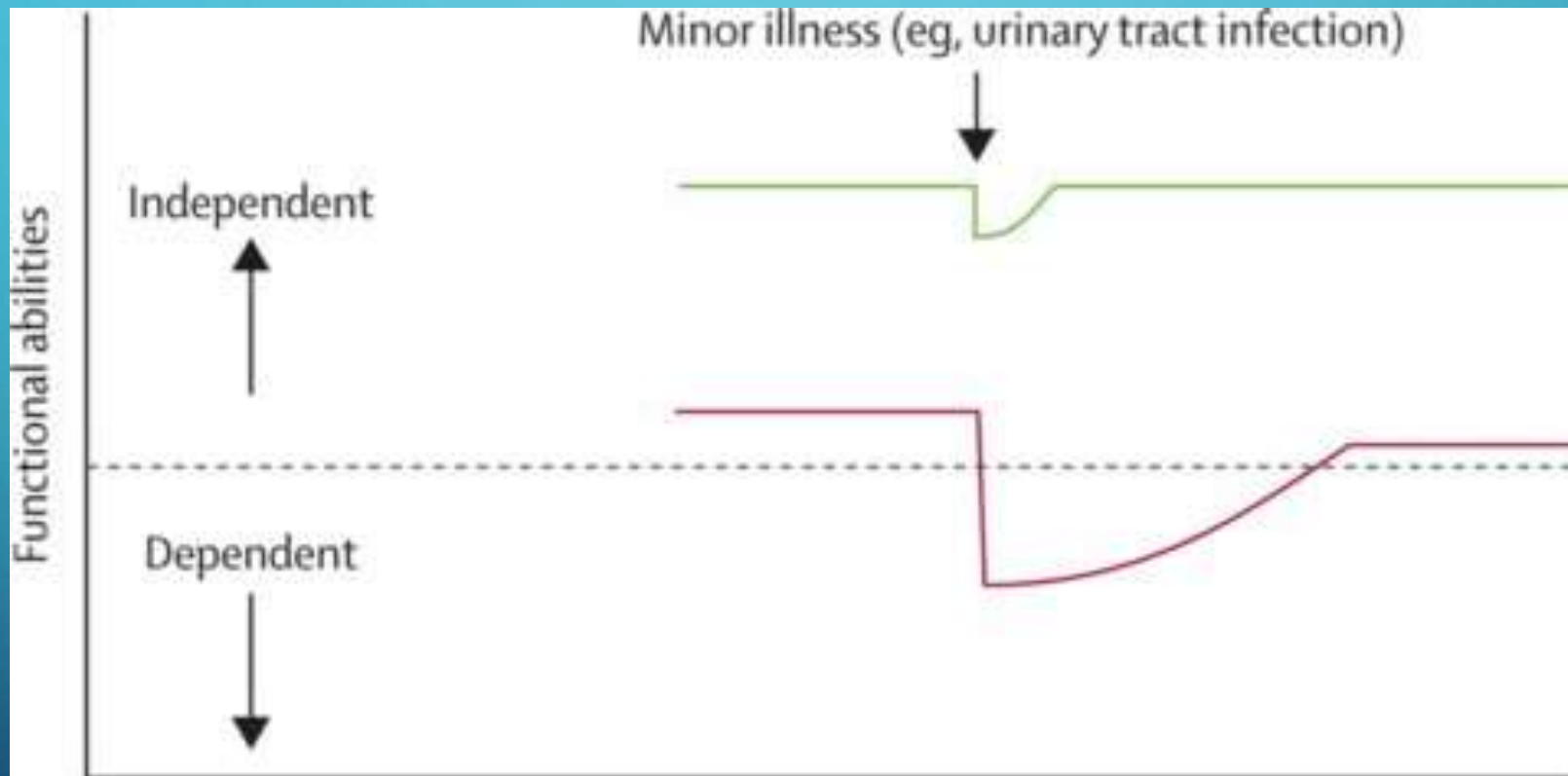


Maggie Smith - 84

# WHAT IS FRAILTY?

- Age UK definition:
  - ‘Frailty’ is a term that’s used a lot, but is often misunderstood. When used properly, it refers to a person’s mental and physical resilience, or their ability to bounce back and recover from events like illness and injury.

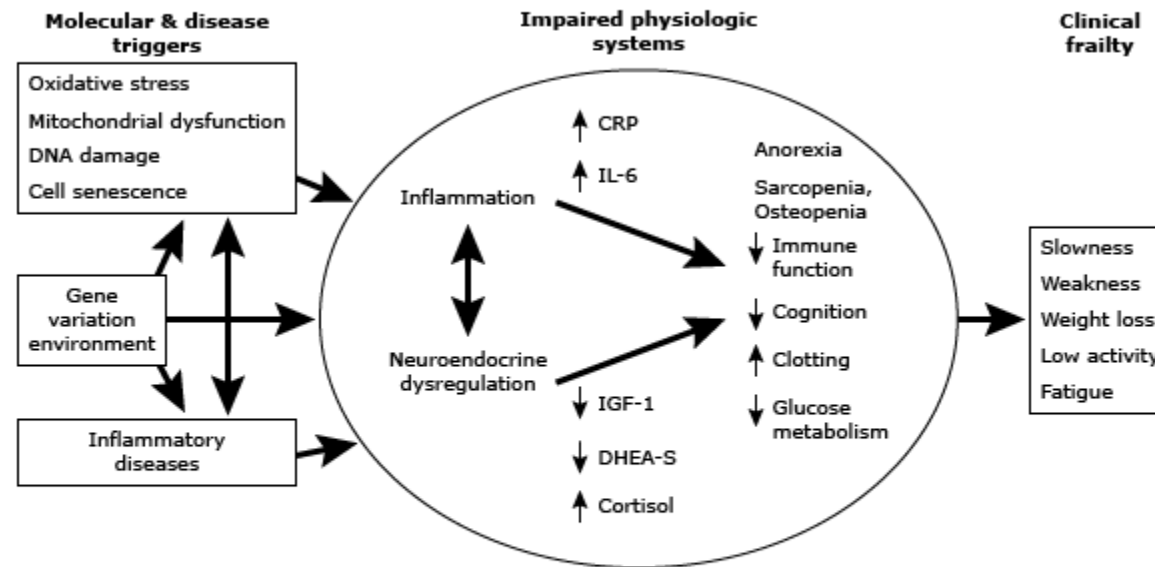
# WHAT IS FRAILITY?



Response to an adverse event in a non- frail vs frail older person  
(Clegg et al, Lancet 2013)

# WHAT IS FRAILITY?

## Hypothesized model of frailty and adverse health outcomes



CRP: C-reactive protein; IL: interleukin; IGF: insulin-like growth factor; DHEA-S: dehydroepiandrosterone sulfate.

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# WHAT IS FRAILTY?

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2 main models

- “Phenotype”
- Accumulation of deficits/ Index Frailty



# WHAT IS FRAILTY?

- **Phenotype model** – Fried, 2001 [Journal of Gerontology]
- Frailty as a syndrome composing 3 or more from
  - Unintentional Weight Loss – (10lbs/  $\geq 5\%$  in 1 year)
  - Self-reported Exhaustion
  - Weakness (grip strength)
  - Slow walking speed - ( $>6$  to  $7$  seconds to walk 15 feet)
  - Low physical activity - activity (Kcals spent per week: males expending  $<383$  Kcals and females  $<270$  Kcal)
- Frailty group had higher incident disease, hospitalization, falls, disability, and mortality (3 or  $>$ )
- 1 or 2 = pre-frail
- (Nb: frailty can occur in the absence of any co-morbidities)



# WHAT IS FRAILTY?

Accumulation of deficits/ Index Frailty – Rockwood 2001, 2007 [Journal of Gerontology]

- Deficits including
  - Disease (comorbidities), signs or symptoms
  - Functional impairments eg. visual loss
  - Laboratory abnormalities
- Can be combined into an Electronic Frailty Index (eg. screening in primary care, research)

# WHAT IS FRAILTY?

- Rockwood also devised an “operational” measure to approximate frailty
- Ease of use in the acute setting
  
- What is it called?
- For what age group is it validated?
- Can you describe any stages?

## 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.









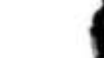
\* 1. Canadian Study on Health & Aging, Revised 2008.

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

Clinical Frailty Scale

“Do you go outdoors independently?”

Outdoor: **NOT** frail (1-4)

	1	Very fit	Outdoor	Exercise	Regularly	
	2	Well	Outdoor		Sometimes	
	3	Managing Well	Outdoor		Never	
	4	Vulnerable	Outdoor		Independent but slow	
	5	Mildly Frail	Indoor	Help @ home?	Never	
	6	Moderately Frail	Indoor		Sometimes	
	7	Severely Frail	Indoor		Regularly	Wheelchair
	8	Very Severely Frail	Indoor	Bedbound, Completely dependent		Bed
	9	Terminally Ill	Indoor	Approaching End-of-Life		

Rockwood K, Song X, MacKnight C, et al. A global clinical measure of fitness and frailty in elderly people. *CMAJ*. 2005;173(5):489-495. doi:10.1503/cmaj.050051.

Indoor: **FRAIL** (5-9)



# WHAT IS FRAILTY?

- Other scoring systems
  - Gait speed ( $<0.8\text{m/s}$ ) , ( $>6$  to  $7$  seconds to walk 15 feet)
  - Timed up and go test ( $>12$  seconds)
  - Grip strength
  - Prisma 7
  - Edmonton
  - FRAIL scale

The background is a solid teal color with a subtle gradient. In the four corners, there are decorative white line-art patterns resembling circuit traces or neural network connections. These patterns consist of straight lines of varying lengths and angles, ending in small circles. The top-left and bottom-left patterns are more dense and complex, while the top-right and bottom-right patterns are simpler and more sparse.

WHY IS IT IMPORTANT TO RECOGNISE?

# WHY IS IT IMPORTANT TO RECOGNISE?

- Higher risk of hospitalisation (and poorer outcome from illness/procedures)
- Higher risk of admission to care setting
- Higher risk of death
- Higher susceptibility to some medications
- May derive less benefit from drugs intended to improve longevity



# (PATHO/)PHYSIOLOGY OF AGEING

- The physiology of most body systems alters with age – a whole talk in itself!
- This has huge implications for the way we apply the results of clinical trials that have been conducted in younger cohorts
- Be very careful about how you apply generic guidelines (eg. ACS protocol) in a geriatric patient
  - Consider whether the trials on which the guideline was based included a geriatric subset

# (PATHO/)PHYSIOLOGY OF AGEING

- Endocrine: decreased GH, IGF-1, DHEA, sex steroids and increased cortisol affect muscle mass and strength; altered glucose metabolism
- Immune system: altered expression of inflammatory mediators including IL-6 alter immune function
- Impaired autonomic nervous system regulation (eg. postural hypotension)
- Altered signalling in renin-angiotensin system
- And much more including ... cerebral atrophy, impairments of sensory organs, increased peripheral vascular resistance, altered cardiac contractility, reduced pulmonary compliance, reduced GFR ...

Source:UpToDate

# (PATHO/)PHYSIOLOGY OF AGEING

- Can this be modified?
- Exercise: shown to increase gait and mobility, decrease falls, increase bone mineral density, enhance performance of ADLs; even studies inf the very frail show benefit
- Occupational therapy: formal occupational therapy can improve performance of ADLs, participation and mobility
- Nutritional supplementation: may be beneficial in weight loss (esp. at adding protein and calories) but important to address chewing/swallowing problems, depression, medication side effects

Source:UpToDate

The background is a solid teal color. In the four corners, there are decorative white line-art patterns that resemble circuit board traces or neural network connections. These patterns consist of straight lines of varying lengths that meet at right angles, with small circles at the end of the lines, suggesting nodes or components in a network.

CAN YOU NAME ANY FRAILTY SYNDROMES?

# CAN YOU NAME ANY FRAILTY SYNDROMES?

- Trick question! There is no universally accepted list.
- These are some commonly accepted frailty syndromes:
  - Falls (and fractures)
  - Sarcopenia, impaired mobility and reduced function (eg. needing help with ADLs)
  - Incontinence (bowel and bladder)
  - Cognitive difficulties (dementia and delirium)
  - Sleep and mood (and in the UK: social isolation)
  - Malnutrition, dehydration
  - Skin integrity
  - Polypharmacy, multimorbidity

# CAN YOU NAME ANY FRAILTY SYNDROMES?

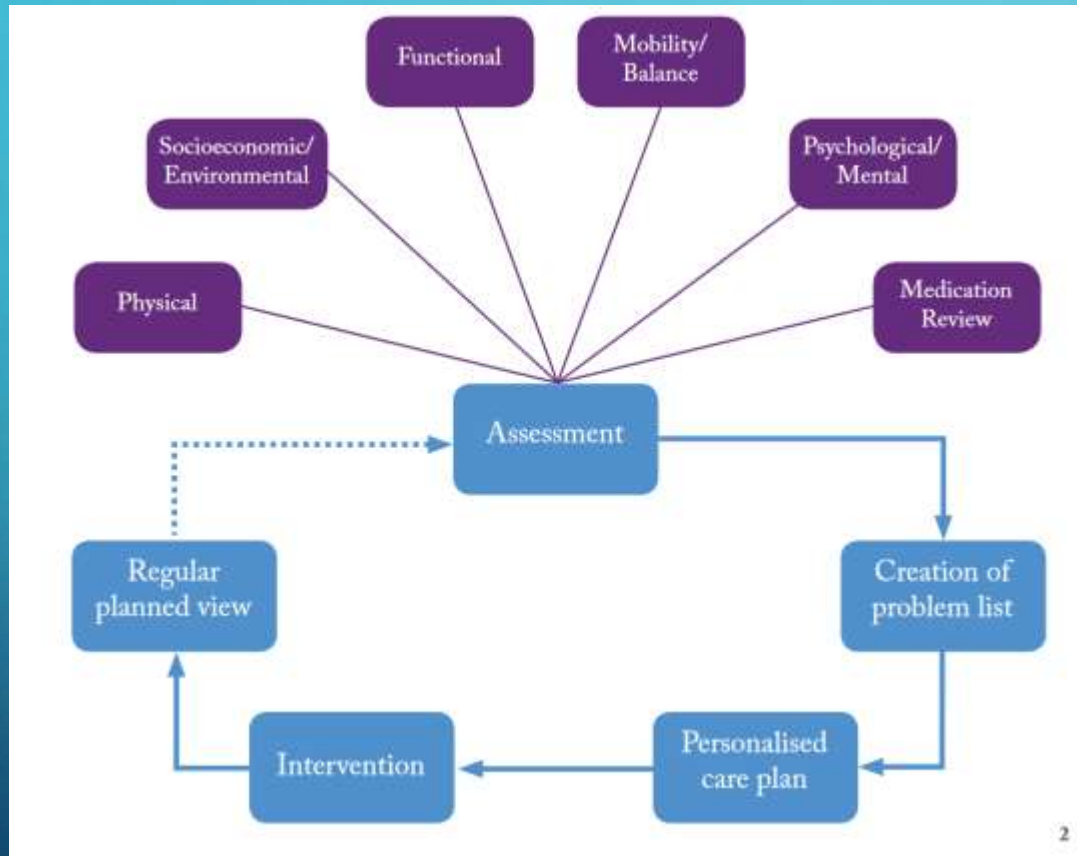
- Our patients are more vulnerable to these complications (esp in hospital)
- You can play a part in reducing this on your daily ward round
  - Look at the stool chart (constipation leads to urinary retention, delirium, falls, etc.)
  - Look at their food + hydration chart
  - Encourage them to get out of bed
  - Think about falls risk, postural hypotension and bone health
  - Think twice about starting new medication; ask if medication can be stopped
  - If the patient is newly confused, do a thorough delirium assessment

# CAN YOU NAME ANY FRAILTY SYNDROMES?

- Should we use a structured approach to assess all our frail patients for all these syndromes?



# COMPREHENSIVE GERIATRIC ASSESSMENT



NICE guidelines recommend all older people with complex needs should have a CGA during admission

A Cochrane Review (Ellis et al. 2017) found CGA increased the likelihood of someone living in their own home at follow-up

# COMPREHENSIVE GERIATRIC ASSESSMENT

- When should we be doing them?
- NICE says the following presentations should prompt a CGA:
  - Falls
  - Immobility
  - Delirium and dementia
  - Polypharmacy
  - Incontinence
  - (End of life care)
- (That's pretty much all of our patients....)

# ADVANCED CARE PLANNING

- Part of the CGA
- Identification of patient wishes with regards to future illness, admission to hospital, invasive investigations or surgery, preferred place of care, resuscitation
- RESPECT forms

**ReSPECT** Recommended Summary Plan for Emergency Care and Treatment

Full name  
Date of birth  
Address  
NHS/CHI/Health and care number

**1. This plan belongs to:**  
Preferred name  
Date completed

The ReSPECT process starts with conversations between a person and a healthcare professional. The ReSPECT form is a clinical record of agreed recommendations. It is not a legally binding document.

**2. Shared understanding of my health and current condition**  
Summary of relevant information for this plan including diagnoses and relevant personal circumstances:  
Details of other relevant care planning documents and where to find them (e.g. Advance or Anticipatory Care Plan; Advance Decision to Refuse Treatment or Advance Directive; Emergency plan for the carer):  
I have a legal welfare proxy in place (e.g. registered welfare attorney, person with parental responsibility) - if yes provide details in Section 8  Yes  No

**3. What matters to me in decisions about my treatment and care in an emergency**  
Living as long as possible matters most to me | Quality of life and comfort matters most to me  
What I most value: | What I most fear / wish to avoid:

**4. Clinical recommendations for emergency care and treatment**  
Prioritise extending life | Balance extending life with comfort and valued outcomes | Prioritise comfort  
clinician signature | clinician signature | clinician signature  
Now provide clinical guidance on specific realistic interventions that may or may not be wanted or clinically appropriate (including being taken or admitted to hospital +/- receiving life support) and your reasoning for this guidance:

CPR attempts recommended Adult or child | For modified CPR Child only, as detailed above | CPR attempts **NOT** recommended Adult or child  
clinician signature | clinician signature | clinician signature

www.respectprocess.org.uk

Version 3.1 - DRAFT © Resuscitation Council UK

# BE A FRAILTY DETECTIVE...

- Frail patients often don't present in the usual way
- Clinical signs may be subtler so you need to hone your examination skills
- Communication or cognitive difficulties may make getting a history harder (always try to catch up with relatives soon after admission)
- There may be multiple pathologies\*
- (\*Remember treating one pathology may cause another to decompensate)

# BE A FRAILTY DETECTIVE...

- Any medical illness can cause frailty to decompensate which leads to falls, “off legs”, lethargy, confusion, “acopia”
- Remember that UTI isn't the only diagnosis you learnt at medical school !
  - In the past couple of years I've seen patients with an initial presenting diagnosis of “UTI” who turned out to have
    - Cholangiocarcinoma
    - Granulomatosis with polyangiitis
    - Pancreatitis
    - Addison's
    - LGI-1 encephalitis

# WHY YOU SHOULD LOVE GERIATRICS

- It makes sense! Many patients have some degree of frailty so learning how to manage frailty will improve outcomes for your patients (and your own job satisfaction)
- Its intellectually challenging – you have to be comfortable with managing multiple systems and often competing pathologies and employing nuance in decision making
- Simple practical changes often make the biggest difference to quality of life (eg. fixing constipation or arranging ear syringing so they can hear the radio)
- Communication skills are every bit as important as clinical knowledge
- You get to work with a cohort of fascinating patients who are sometimes vulnerable, dismissed or overlooked – you can advocate for them



# A PARTING THOUGHT

## ATTITUDES AND SOCIAL COGNITION

### Longevity Increased by Positive Self-Perceptions of Aging

Becca R. Levy and Martin D. Slade  
Yale University

Suzanne R. Kunkel  
Miami University

Stanislav V. Kasl  
Yale University

This research found that older individuals with more positive self-perceptions of aging, measured up to 23 years earlier, lived 7.5 years longer than those with less positive self-perceptions of aging. This advantage remained after age, gender, socioeconomic status, loneliness, and functional health were included as covariates. It was also found that this effect is partially mediated by will to live. The sample consisted of 660 individuals aged 50 and older who participated in a community-based survey, the Ohio Longitudinal Study of Aging and Retirement (OLSAR). By matching the OLSAR to mortality data recently obtained from the National Death Index, the authors were able to conduct survival analyses. The findings suggest that the self-perceptions of stigmatized groups can influence longevity.

If you view aging positively while you are young; you are likely to live longer!  
(7.5 years longer)