



ROYAL
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EDINBURGH

Older doesn't always mean frailer

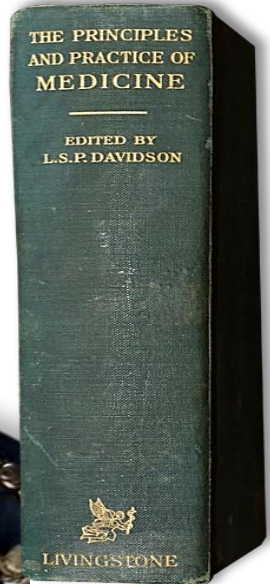
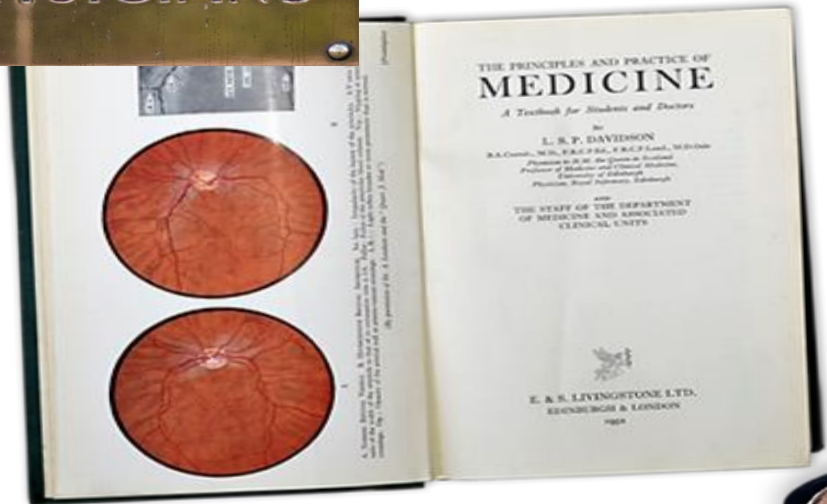
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March 2024



@RCPEdin



Aims of this talk

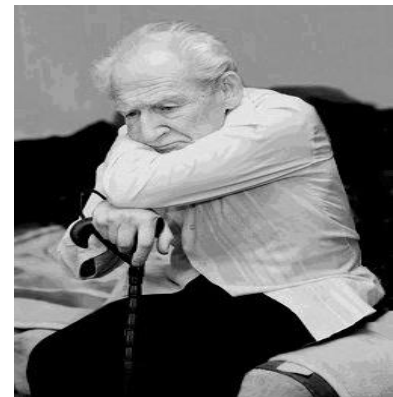
- What is frailty?
- Why is frailty important?
- How to recognise & measure frailty?
- How to manage frailty
- How to prevent frailty so **old is not always frail**



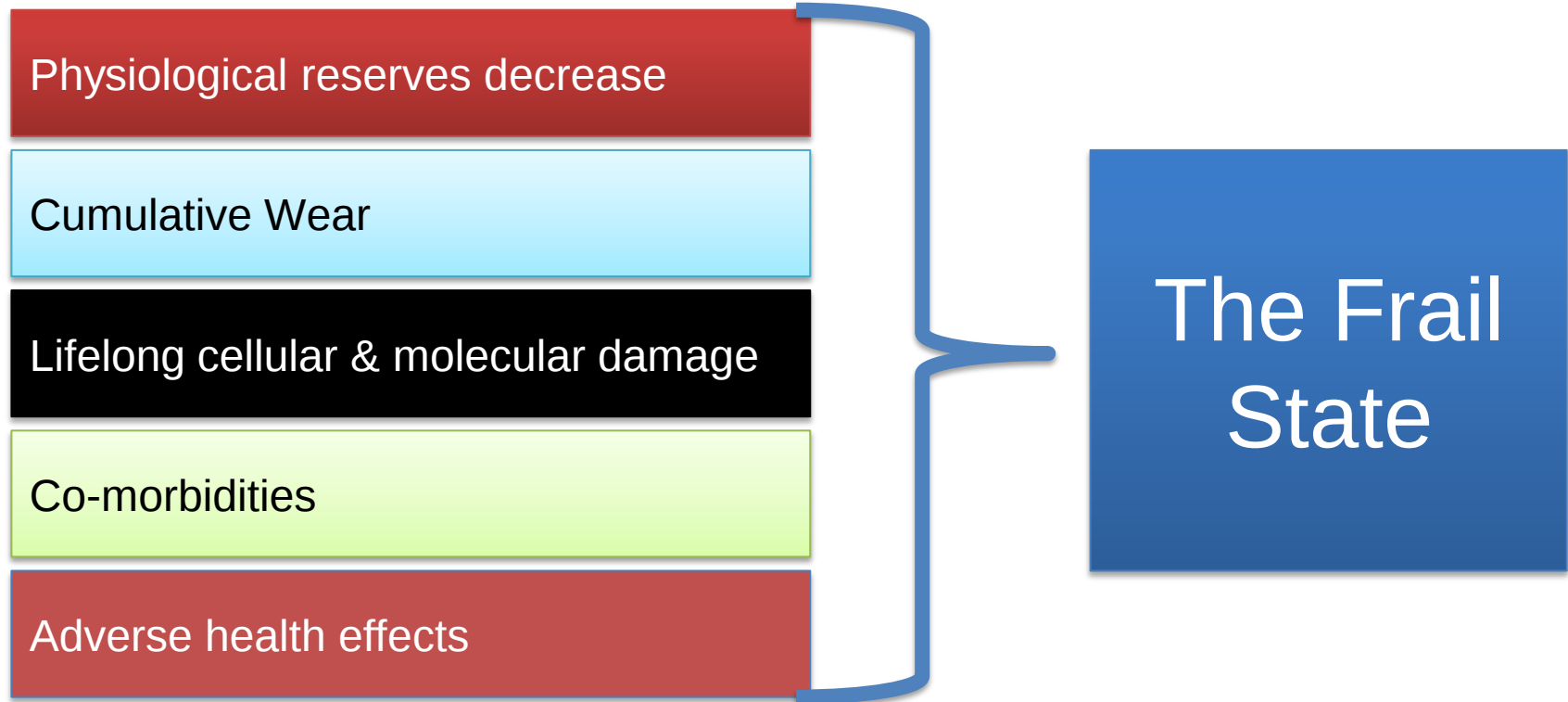
What is frailty?

- Frailty is not a **diagnosis of a specific condition**
- A clinically recognised state of
 - Increased vulnerability
 - Limited functional reserve
 - *Multiple body systems gradually lose their in-built reserves.*
 - Failure in response mechanisms in the face of stress
- Contributed to by:
 - Ageing associated with
 - Decline in the body's **physical** and **psychological** reserves.
- It varies in its severity.
- It is not static.

BUT It is not an inevitable part of ageing.



The mechanism of frailty



Why is frailty important?

- Patients with **more:**

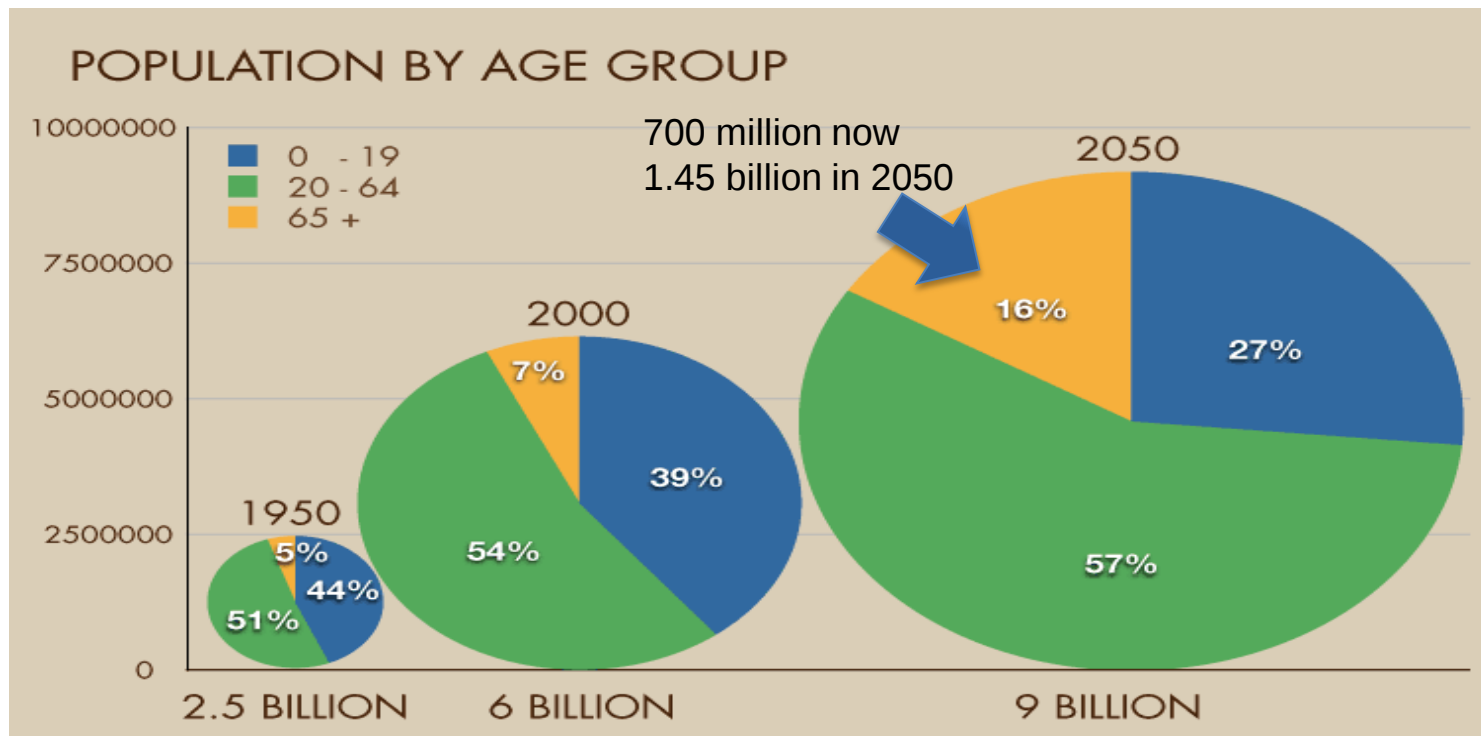
- Co-morbidities
- Polypharmacy
- Sarcopenia

have higher rates of admission and death – how do we define them

- Identifying patients by **AGE** alone is discriminatory
 - We cannot use AGE itself as a measure of need for healthcare.
- **Chronological V Biological age**
- The AGEING DEMOGRAPHIC



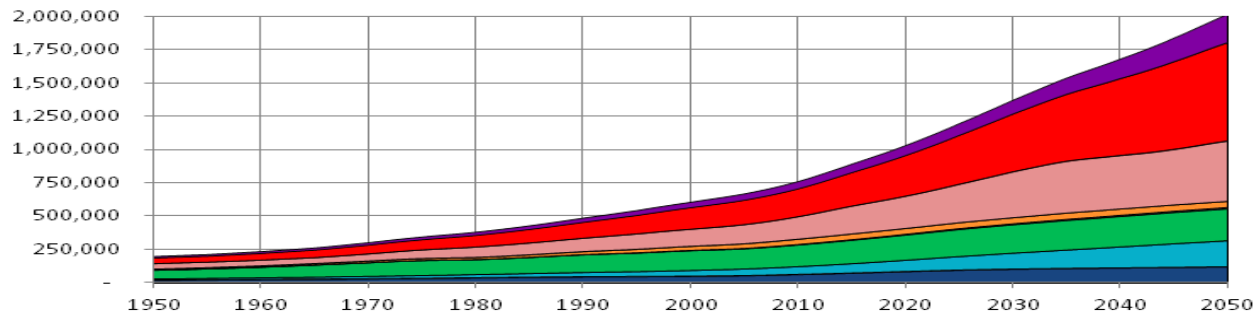
The world is getting older



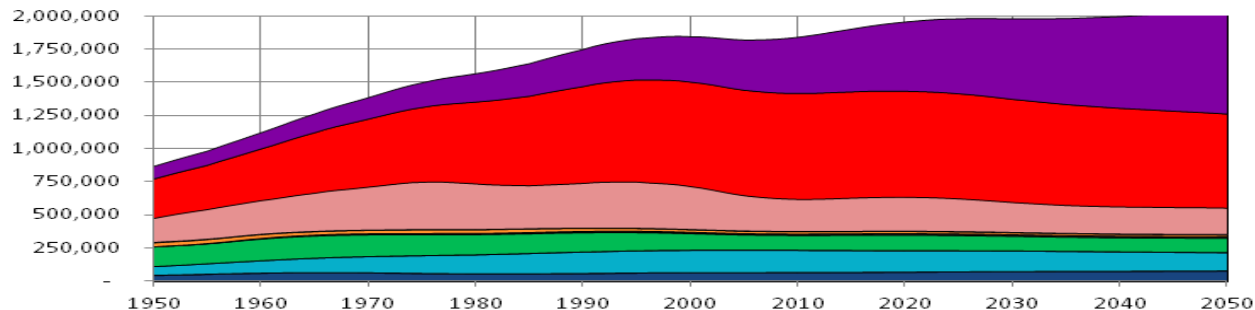
“An Aging World: 2015” / National Institute on Aging 2016

Particularly vital in the developing world

Over 60s



Under 15s



Source: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, *World Population Prospects: The 2008 Revision*; <http://esa.un.org/unpp>, accessed 13 May 2010

Bangladesh

- The percentage of the elderly population in Bangladesh is projected to be 17.2 million in 2025 and is expected to double to 36.0 million (21.9%) in 2050
- “The increasing aging population will have an impact on health status, the healthcare system, economic growth, labour markets, consumption, savings, investment, pension, and intergenerational transfers.
- Bangladesh needs to prepare to provide the necessary support for the coming surge of older adults”.

Md Aminul Haque and Sadiya Afrin: Construction of the active aging index in Bangladesh ; Hellyon 2022; 8(10)

e10922

Haque M.A., Afrin S. Active Aging Index in Bangladesh: A Comparative Analysis with a European Approach. Ageing Int. 2021

How common is frailty?

- 10% of all people aged > 65 years
 - 5% aged 65 and 74
 - 25%-50% aged > 85 years have frailty
- Four year incidence 7.2%
- Greater in women than men

Why is it important to identify frailty?

- A **small insult** can result in **catastrophic loss of function**
- High association with
 - Falls
 - Infections
 - Disabilities
 - Hospitalisation
 - Institutionalisation
 - Death
- Johns Hopkins - Frailty:
 - Doubles the risk of surgical complications
 - Lengthens hospital stays, &
 - Increases the odds of losing independence after surgery x 20

Leading cause of death

754 followed up for 10 years

Cause of death:

27.9% FRAILITY

21.4% Organ Failure

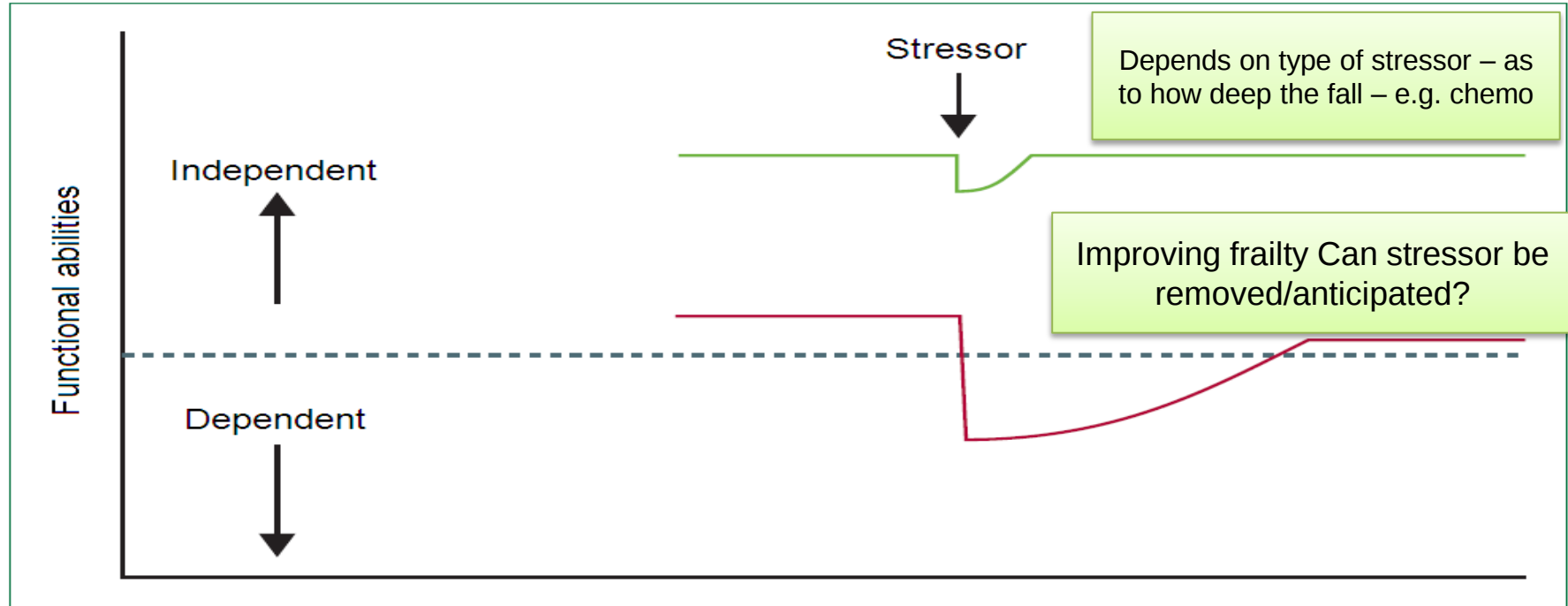
19.3% Cancer

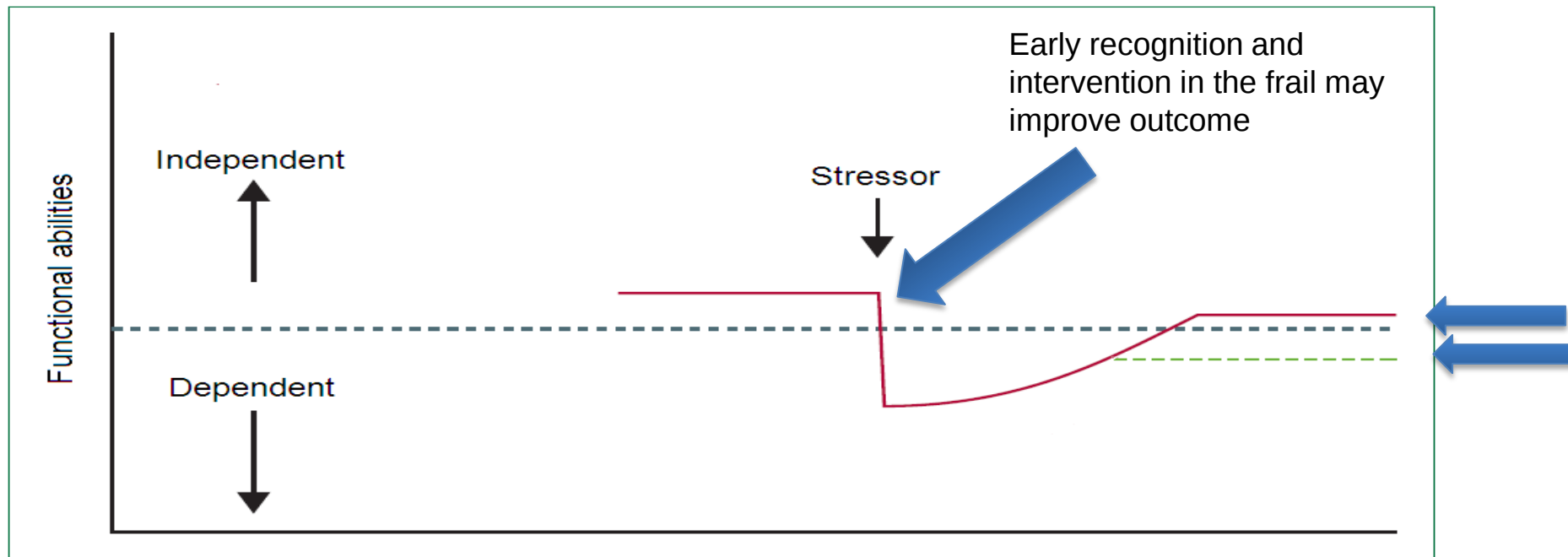
13.8% Dementia

Clegg A, Rockwood K. Frailty in elderly people. *The Lancet* 2013; 381: 752–62

Gill TM et al. Trajectories of disability in the last year of life. *N Engl J Med* 2010; **362**: 1173–80.

Stressor may be a small insult – e.g. new drug, minor infection or surgery





Identifying Frailty

A successful frailty model should help to:

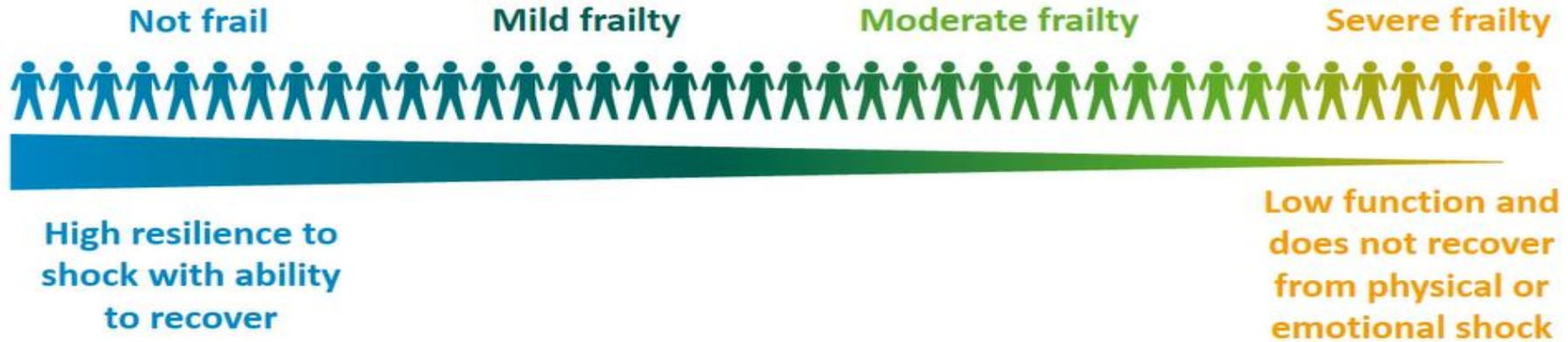
- identify frailty,
- predict natural history, and
- predict response to therapeutic interventions

Cumulative Deficit Model: Canadian Study of Health and Aging

- **70-item Frailty Index**
 - Symptoms, signs, lab results, disease states and disabilities
- The Index assumes an **accumulation of deficits** (which can occur with ageing) along with other variables

Cumulative Deficit Model: Canadian Study of Health and Aging

A form of complexity, associated with developing multiple long-term conditions over time leading to low resilience to physical and emotional crisis and functional loss leading to gradual dependence on care.





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.

Clinical Frailty Scale*



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Severe

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.

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Mild

Moderate

Electronic frailty index

UK NHS

Disease State



Arthritis



Diabetes



Heart Valve
Disease



Parkinson's
Disease



Skin
Ulcer



Dizziness



Polypharmacy



Activity
Limitation



Requirement
for Care



Anaemia &
Haematinic
Deficiency



Atrial
Fibrillation



Foot
Problems



Hypertension



Peptic
Ulcer



Stroke
and TIA



Dyspnoea



Sleep
Disturbance



Housebound



Social
Vulnerability



Chronic Kidney
Disease



Fragility
Fracture



Hypotension
/Syncope



Peripheral
Vascular Disease



Thyroid
Disorders



Falls



Urinary
Incontinence



Hearing
Loss



Vision Problems
- Blindness



Coronary Heart
Disease



Heart
Failure



Osteoporosis



Respiratory
Disease



Urinary
System Disease



Memory and
Cognitive
Problems



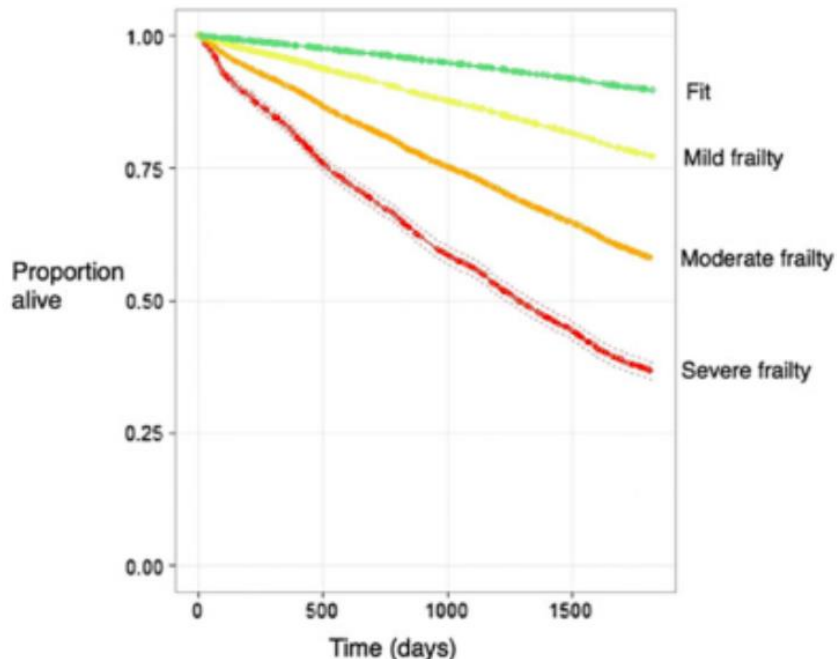
Weight Loss
and Anorexia



Mobility and
Transfer problems

Abnormal Lab Value

Mortality due to frailty



Systematic review (Kojima et al)
18 cohort studies - 65,048 participants.
Higher Frailty index was
significantly associated with higher mortality risk

For every:

0.01 increase in the index the risk
rose by 4% (= 1.04, 95% CI = 1.03 to
1.04)

and by

0.1 increase in the index rose by 28%
(1.28, 95% CI = 1.26-1.31).

Kojima G. et al. Age and Ageing, 2018; 47(2), 193–200.

Conclusions: Part 1

- Frailty is the **cumulative effect** of individual deficits
- Frailty is an important predictor of:
 - Poor outcome – from illness / surgery
 - Institutionalisation
 - Death
- **Identifying and monitoring frailty improves outcomes.**



Fit for Frailty

Consensus best practice guidance for the care of older people living with frailty in community and outpatient settings



ROYAL
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PHYSICIANS of
EDINBURGH

Acute care toolkit 3

Acute medical care for frail older people March 2012

QUALITY CARE FOR OLDER PEOPLE WITH URGENT & EMERGENCY CARE NEEDS



How do we recognise and measure frailty and prevent consequences? Scotland

Clinical Frailty Scale*



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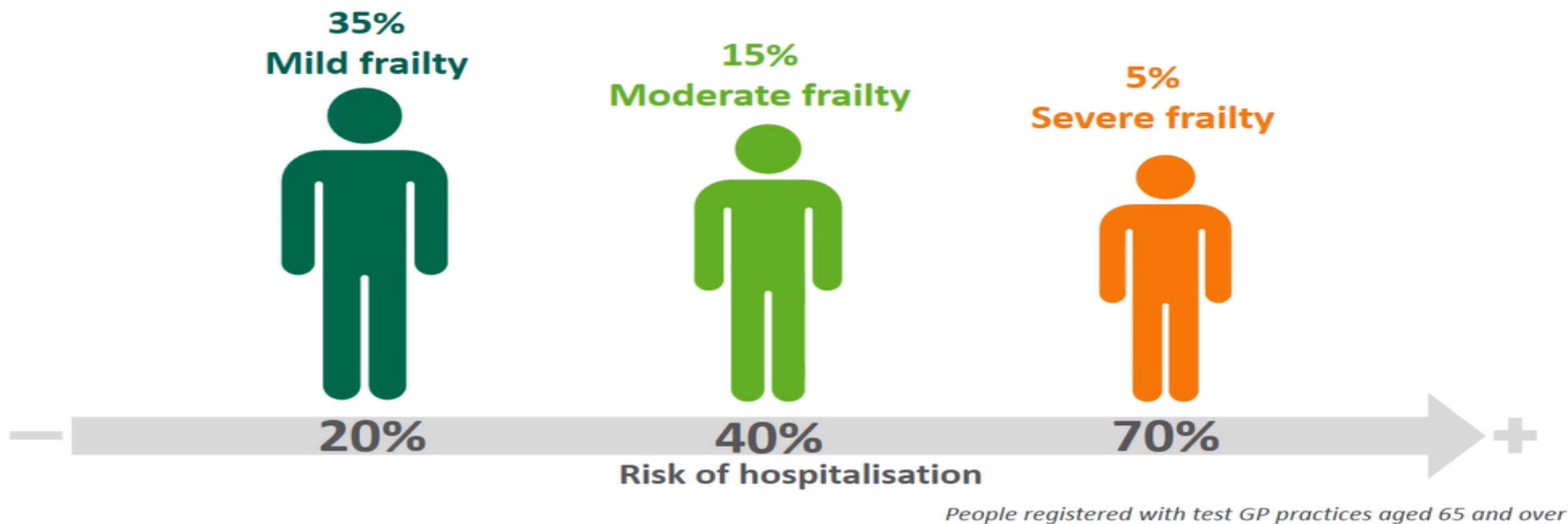
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Mild

Moderate

Electronic Frailty Index



Frailty within Scotland

A form of complexity, associated with developing multiple long-term conditions over time leading to low resilience to physical and emotional crisis and functional loss leading to gradual dependence on care.



Average length of stay per unplanned admission

13.5

23.4

36.4

Average number of GP contacts

10

14

18

People 65 years and older registered with General Practice in ihub frailty sites.

Frailty within Scotland

A form of complexity, associated with developing multiple long-term conditions over time leading to low resilience to physical and emotional crisis and functional loss leading to gradual dependence on care.



People 65 years and older registered with General Practice in ihub frailty sites.

Frailty within Scotland

A form of complexity, associated with developing multiple long-term conditions over time leading to low resilience to physical and emotional crisis and functional loss leading to gradual dependence on care.



Average cost of unplanned admission cost per person per year

£1,119

£3,175

£5,800

Extrapolated cost of unplanned bed days across Scotland per year

£396m

£482m

£293m

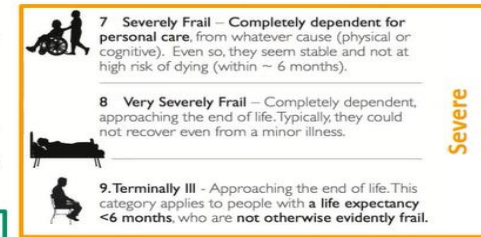
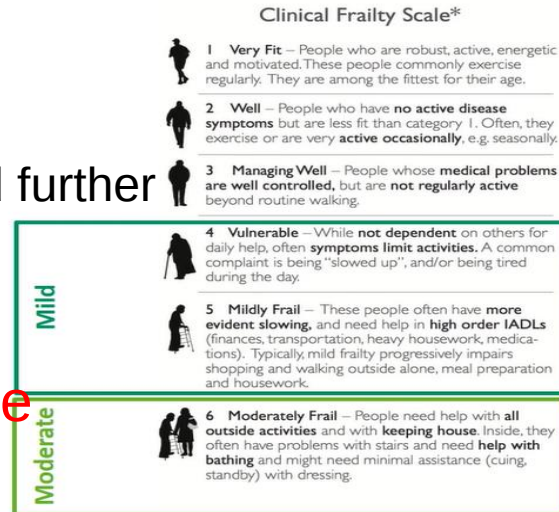
People 65 years and older registered with General Practice in ihub frailty sites.

Edinburgh Hospitals: Frailty Screening

- Patients aged > 65 years admitted to hospital
- Patients attending Day Hospitals
- Patients being assessed for surgery (urology / colorectal)

- Rockwood Scale:
 - 1-3: Not frail – not assessed further
 - 4+: Vulnerable / Frail

- Proceed to Comprehensive Geriatric Assessment



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Edinburgh: Frailty Screening

Comprehensive Geriatric Assessment (CGA)



Multidisciplinary team

Review Health and
Wellbeing of
vulnerable adults

Multidimensional
holistic
assessment

Formulation of
a plan to
address issues

Interventions

Edinburgh: Frailty Screening: (CGA)

Health and Wellbeing Domains

- Physical health issues (e.g. OA, Heart failure, continence)
- Mental health issues (e.g. delirium, depression, dementia)
- Functional issues (e.g. ability to wash, dress, shop)
- Social issues (e.g. lives alone, family situation)
- Environmental issues (e.g. trip risk, heating)
- Medications (STOP/START)

Edinburgh: Frailty Screening

Multidisciplinary team

- Doctors
- Nurses
- Physiotherapy
- Occupational Therapy
- Others



Edinburgh: Frailty Screening

Examples of Interventions

Delirium: Dr Nick Murch

- 30% of older admissions
- 4AT <http://www.the4at.com>
- Early identification:
 - Reduces mortality
 - Reduces length of stay



RAPID CLINICAL TEST FOR
DELIRIUM



RAPID CLINICAL TEST FOR DELIRIUM

CIRCLE

[1] ALERTNESS

This includes patients who may be markedly drowsy (eg. difficult to rouse and/or obviously sleepy during assessment) or agitated/hyperactive. Observe the patient. If asleep, attempt to wake with speech or gentle touch on shoulder. Ask the patient to state their name and address to assist rating.

Normal (fully alert, but not agitated, throughout assessment)	0
Mild sleepiness for <10 seconds after waking, then normal	0
Clearly abnormal	4

[2] AMT4

Age, date of birth, place (name of the hospital or building), current year.

No mistakes	0
1 mistake	1
2 or more mistakes/untestable	2



RAPID CLINICAL TEST FOR DELIRIUM

[3] ATTENTION

Ask the patient: "Please tell me the months of the year in backwards order, starting at December."

To assist initial understanding one prompt of "what is the month before December?" is permitted.

Months of the year backwards	Achieves 7 months or more correctly	0
	Starts but scores <7 months / refuses to start	1
	Untestable (cannot start because unwell, drowsy, inattentive)	2

[4] ACUTE CHANGE OR FLUCTUATING COURSE

*Evidence of significant change or fluctuation in: alertness, cognition, other mental function
(eg. paranoia, hallucinations) arising over the last 2 weeks and still evident in last 24hrs*

No	0
Yes	4

4 or above: possible delirium +/- cognitive impairment

1-3: possible cognitive impairment

0: delirium or severe cognitive impairment unlikely (but delirium still possible if [4] information incomplete)

4AT SCORE

Edinburgh: Frailty Screening

Examples of Interventions

Falls and immobility

Falls checklist

- Medication review
- Lying and standing BP
- Neurological examination
- Foot review

Physiotherapy

- Timed up and go test (TUAG):
 - 10 seconds to get up from a chair, walk 3 metres, turn around, and sit down again
- Gait speed
 - > 5 seconds to cover 4 metres

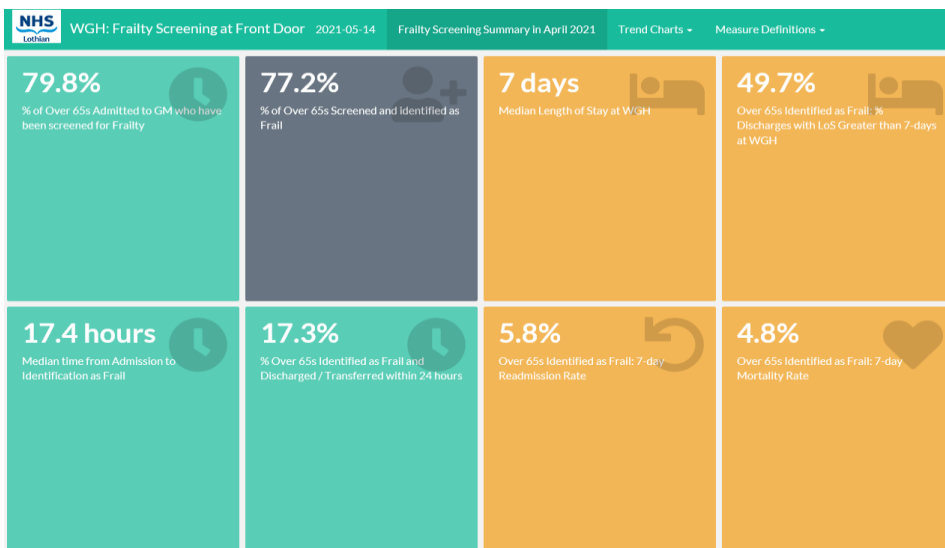


Early intervention reduces morbidity, mortality and risk of readmission

Comprehensive Geriatric Assessment: Benefits

- Effective in reducing mortality and improving independence (still living at home) for older people admitted to hospital as an emergency
- Reduces re-admission
- Prevents institutionalisation
- Decreases falls and fractures
- Increases subjective well being

*Ellis et al. Cochrane review 2017: **Comprehensive geriatric assessment for older adults admitted to***

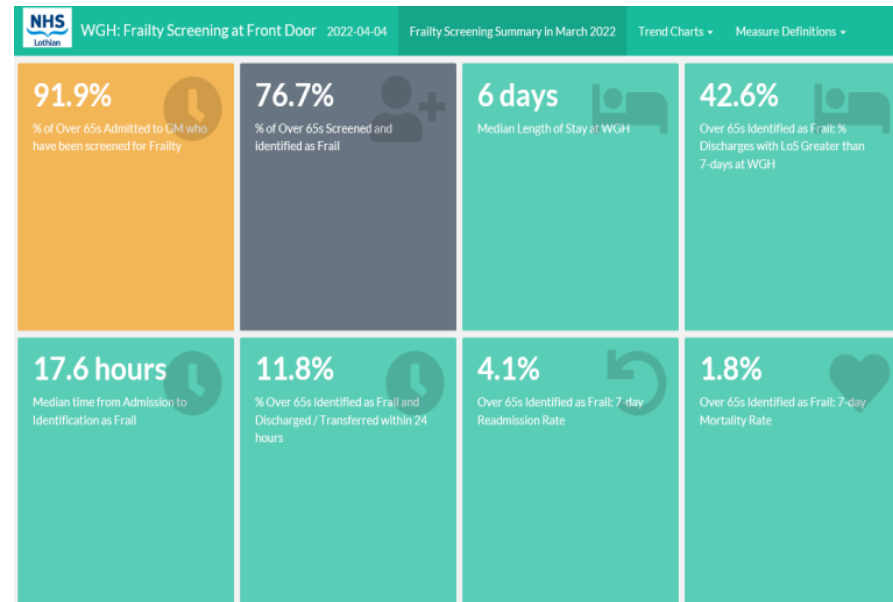


2022



2024

Most older patients screened on admission (79.8%-
91.7%)
 Majority are frail (**77%**)
 Length of stay of frail reduced (8 -7- **6 days**)
 Greater number discharged within 24 hrs (17.3%—**11.8%**)
 Readmission rate reduced (5.8%-**4.1%**)
 Mortality rate of frail reduced (4.8%-**1.8%**)
 Age: Mean **84 yrs**
 Frailty Score: **Mean 5.98 / Median 6**



How to prevent frailty



Fit for Frailty

Consensus best practice guidance for the care
of older people living with frailty in community
and outpatient settings

Four Ways to Beat the Frailty Risk

1. Identify Frailty early

- You're shrinking / losing weight.
- You feel weak / reduced grip strength.
- You feel exhausted
- Your activity level is low.
- You walk slowly (Pace is considered slow if the time it takes you more than 6 seconds to walk 15 feet).



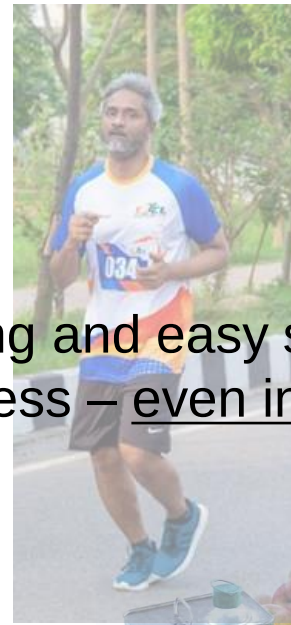
Fit for Frailty

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Four Ways to Beat the Frailty Risk

2. Be active most days of the week

- Research suggests that activities like walking and easy strength-training moves improve strength and reduce weakness – even in very old, frail adults.



3. Eat well

- People who follow this Mediterranean diet faithfully were 74% less likely to become frail



Four Ways to Beat the Frailty Risk

4. Keep your mind active, your attitude optimistic

- Positive feelings translated into a lower risk of frailty in one study.
- “Staying socially connected”
- Johns Hopkins research has found that older volunteers who teach in schools sharpen their own thinking skills and improve their physical functioning

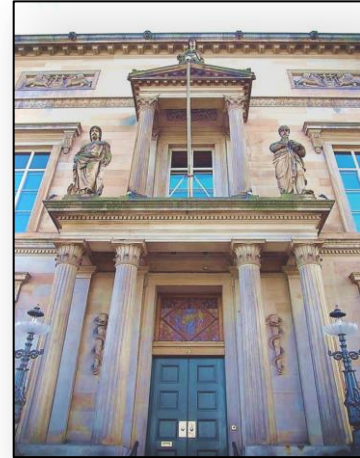
AND - For people at risk

Modify the following:

- Smoking
- Alcohol excess
- Nutritional compromise
- Physical inactivity
- NCD management – DM / HTN / IHN
- Cognitive impairment
- Falls
- Hearing problems
- Mood problems
- Poly-pharmacy
- Vision problems
- Social isolation and loneliness

Conclusion

- The population is ageing
- Frailty is commoner with ageing
- Frailty is associated with increased morbidity and mortality
- Early identification and intervention reduces complications
- The risk of developing frailty can be reduced
 - Fitness, good diet and better socioeconomic situation earlier in life reduces risk of frailty
- Consider screening for frailty in over 65's
 - In community
 - On admission to hospital
 - Prior to surgery
- It is not an inevitable result of ageing



Thank you



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