

FRAILTY

THE F WORD WE OVERLOOK



AGENDA

- Define Frailty
- Mortality / Morbidity Implications
- Normal Aging vs. Frailty
- Symptoms of Frailty
- Risk Factors Associated With Frailty
- Frailty Assessment Tools,, Clinical and Underwriting

WHAT IS FRAILTY

Usually, a geriatric syndrome but concept can be applied across ages

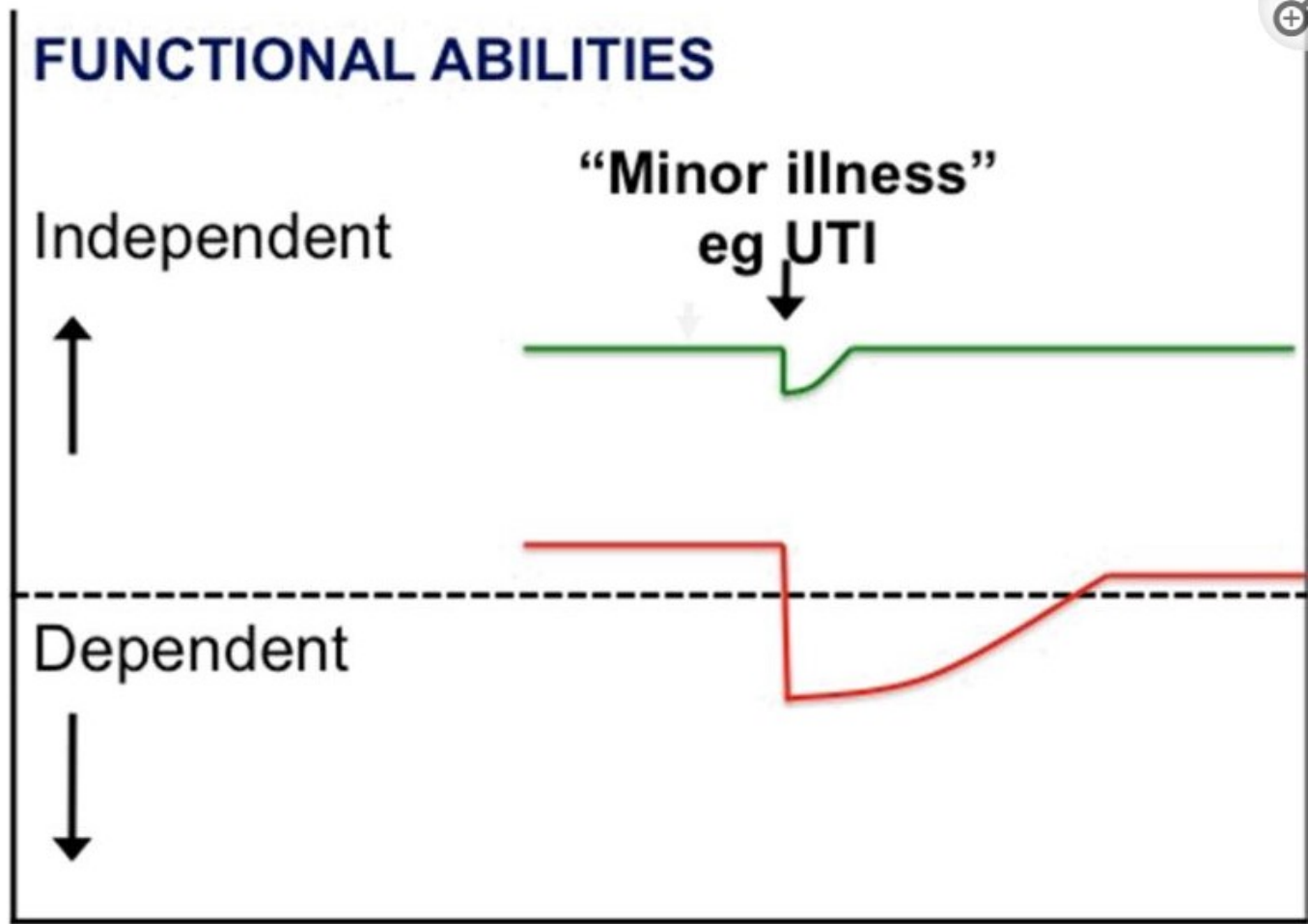
There is a state of increased vulnerability across multiple health domains that can lead to adverse health outcomes

Can be initially overlooked or incorrectly identified as part of the normal aging process because of its variable nature of presentation

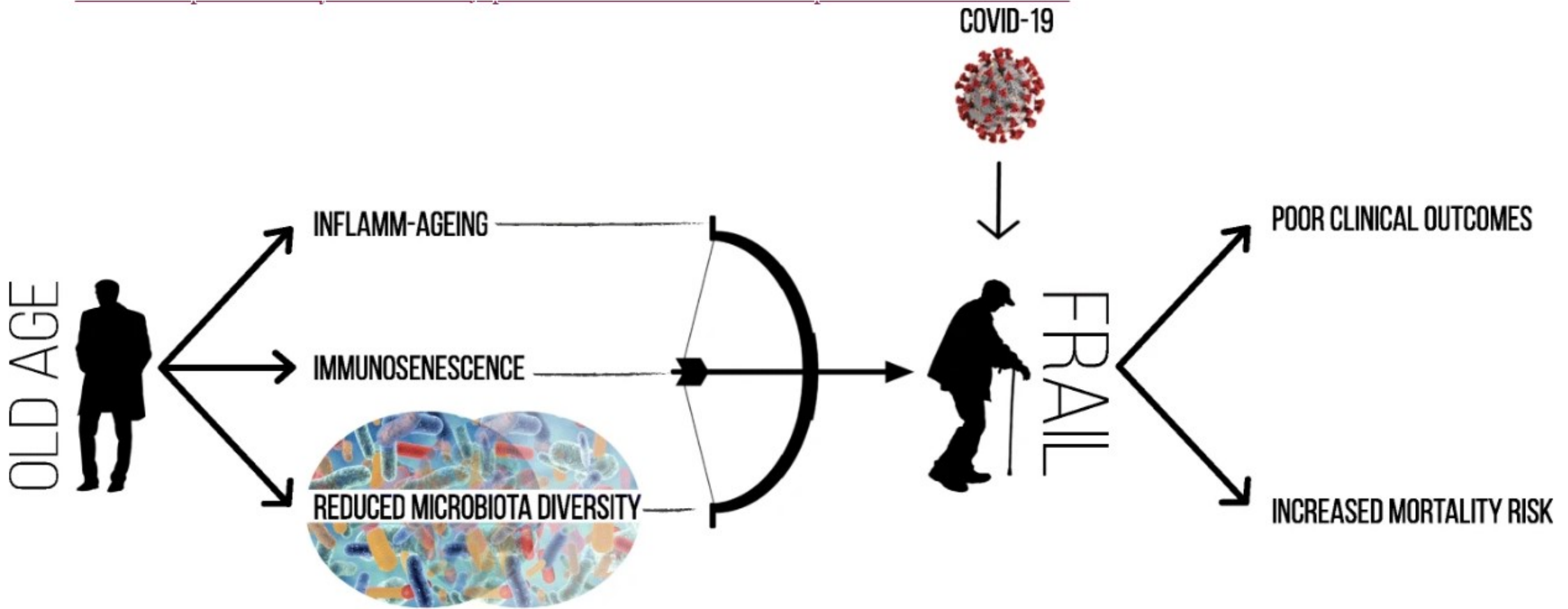
FRAILITY

- A state of vulnerability to poor resolution of homeostasis after a stressor event and is a consequence of cumulative decline in many physiological systems during a lifetime (Lancet)
- This is a loss of homeostasis which leaves an individual vulnerable
- This cumulative decline depletes homeostatic reserves until minor stressor events trigger disproportionate changes in health status





Vulnerability of frail older people to a sudden change in health status following a minor illness. The green line represents a fit older person who, following a minor stress such as an infection, experiences a relatively small deterioration in function and then returns to homeostasis. The red line represents a frail older person who, following a similar stress, experiences a larger deterioration which may manifest as functional dependency and who does not return to baseline homeostasis (Lancet)



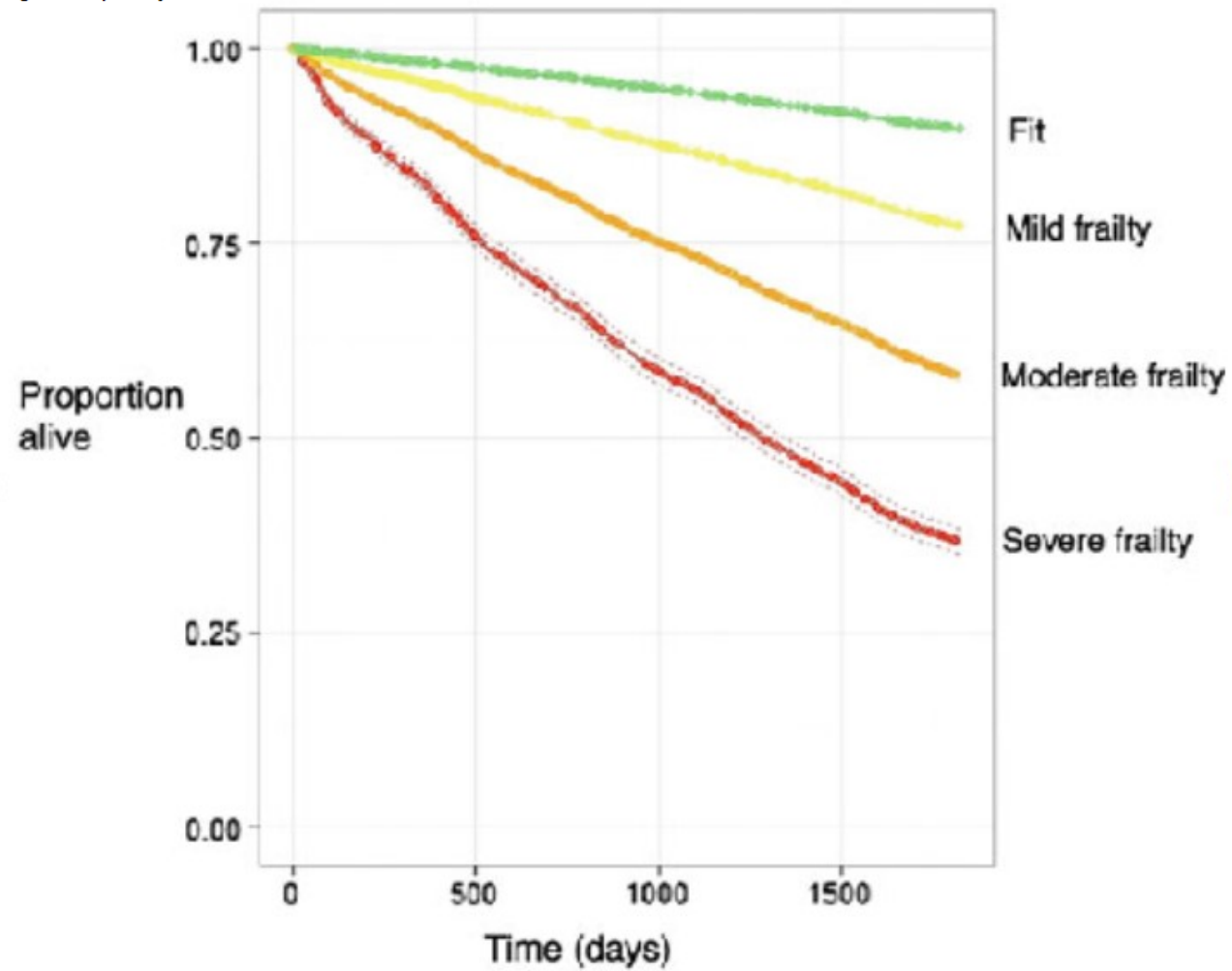
This figure shows the pathological mechanisms in older adults which expose frail patients with COVID-19 to undesired outcomes



FRAILTY, THERE IS MORTALITY AND MORBIDITY ASSOCIATED!

- Frailty independently associated with adverse outcomes (Lancet)
- Frail older adults are less able to tolerate and adapt to stressors such as acute illness, surgical or medical interventions, or trauma than younger or non-frail older adults
- This increased vulnerability contributes to increased risk for procedural complications, falls, institutionalization, disability, and death (Lancet)

Development and validation of an electronic frailty index using routine primary care electronic health record data



Five-year Kaplan–Meier survival curve for the outcome of mortality for categories of fit, mild frailty, moderate frailty and severe frailty (internal validation cohort).



ASSOCIATED MORBIDITY AND MORTALITY

- After adjustment for comorbidities, frailty predicts hip fractures, disability, and hospitalization (Journal of American Geriatrics Society)
- Frailty also predicts adverse outcomes related to renal transplantation, general surgery (elective and emergency), and cardiac surgery interventions (Journal of Gerontology and Biological Science)
- Frailty is also thought to have quadruple the risk of cardiovascular mortality
- The prevalence of frailty increases with age and at any age lessens survival

EPIDEMIOLOGY OF FRAILITY

Affects 5-17 % of older adults over 65 y/o

25% prevalence in individuals 85 and older

Women have a high incidence than men

Affects every organ system

Reversible to some degree

Increased morbidity / mortality in frailer individuals



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

NORMAL AGING

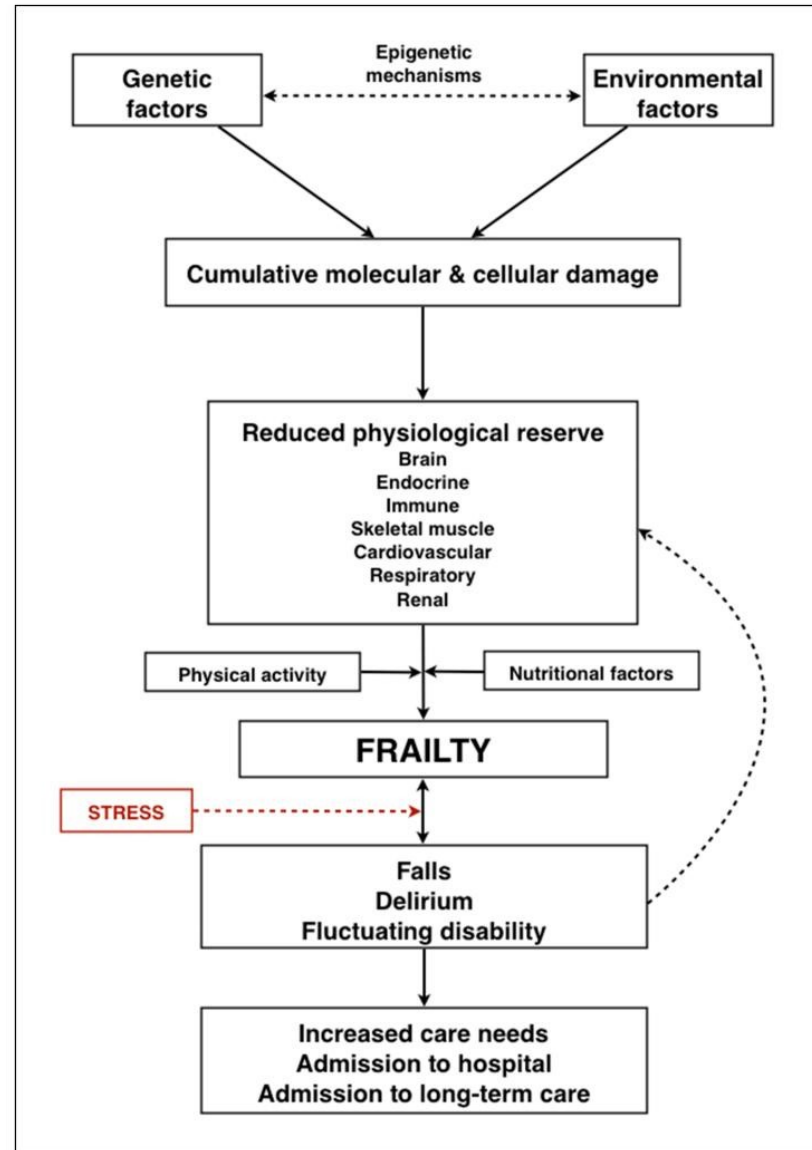
A cumulative result of molecular and cellular damage that leads to a loss of physiologic reserve

Physiological reserve provides the ability to compensate for disease-related changes and maintain a homeostatic balance in the natural aging process

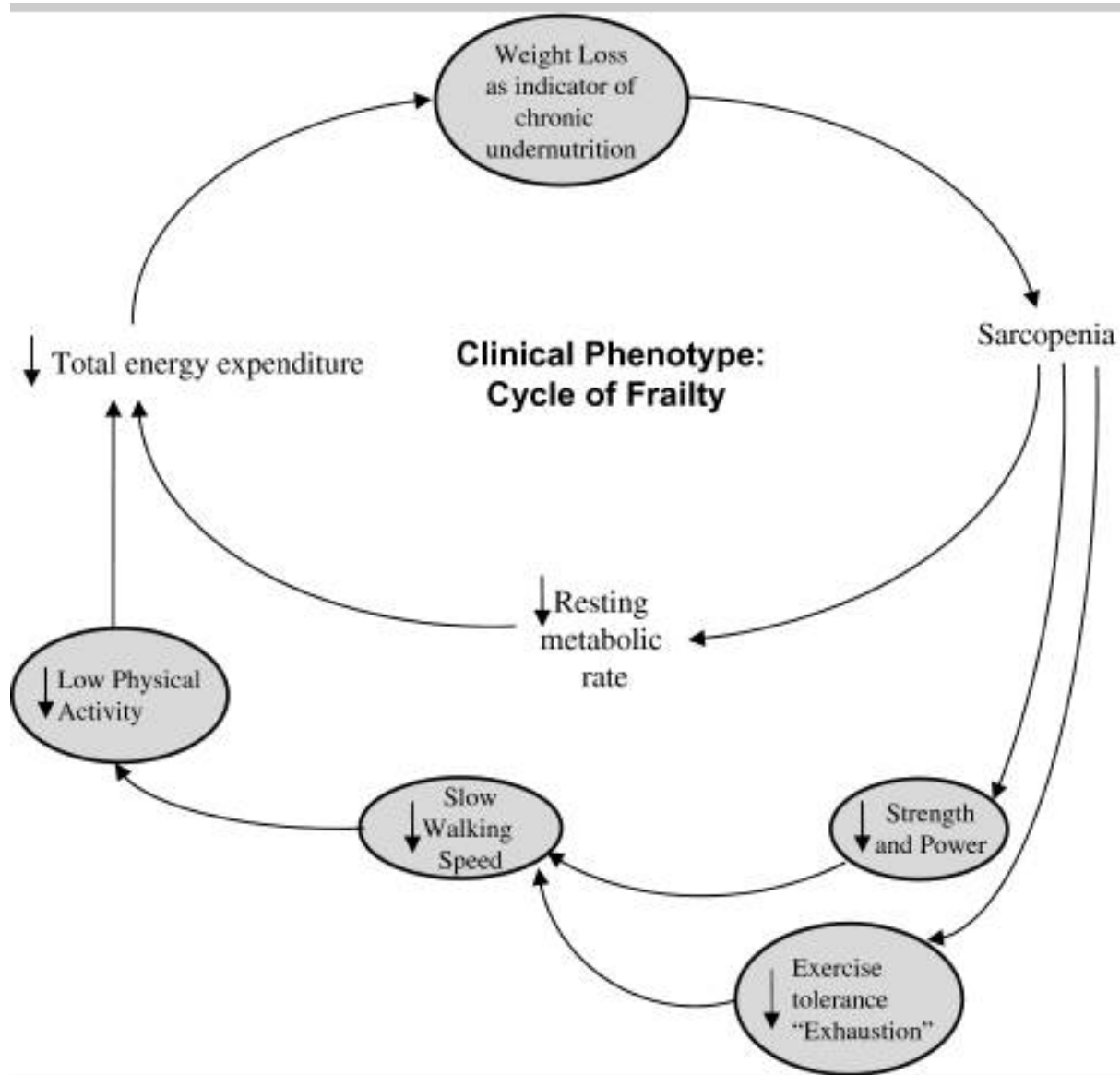
Loss of homeostasis and physiologic reserve lead to functional decline in frail individuals

Older ages do not automatically indicate that someone is frail

Hormonal dysregulation, (increased cortisol levels), loss of skeletal and muscle mass, increased immune system activation and proinflammatory cytokines)



Lancet. 2013 Mar 2; 381(9868): 752–762.



SYMPTOMS OF FRAILITY

Generalized
weakness

Exhaustion

Slow gait

Poor balance

Decreased
physical
activity

Cognitive
impairment

Weight loss



RISK FACTORS FOR FRAILITY

Older age

Female sex

Unhealthy
lifestyle

Lower
economic
status

Marital status

Smoking
history

Social
Isolation

Lower levels
of education

Polypharmacy

RISK FACTORS FOR FRAILTY

-
- Frailty increases with the number of health deficits and comorbidities
 - Diabetes mellitus
 - Respiratory disease
 - Stroke
 - Dementia
 - Multiple sclerosis
 - Connective tissue disease
 - Osteoarthritis
 - Chronic fatigue syndrome

IS THERE ROUTINE SCREENING?



No recommended routine screening... but this is changing



Comprehensive geriatric assessment can identify risk factors and symptoms

Systematic, multidimensional assessment conducted by an interprofessional team (PMD, geriatrician, social worker, pharmacist, ect)



Frailty is a dynamic state of well-being involving multiple health domains that are influenced by a range of variables. It's easily overlooked.



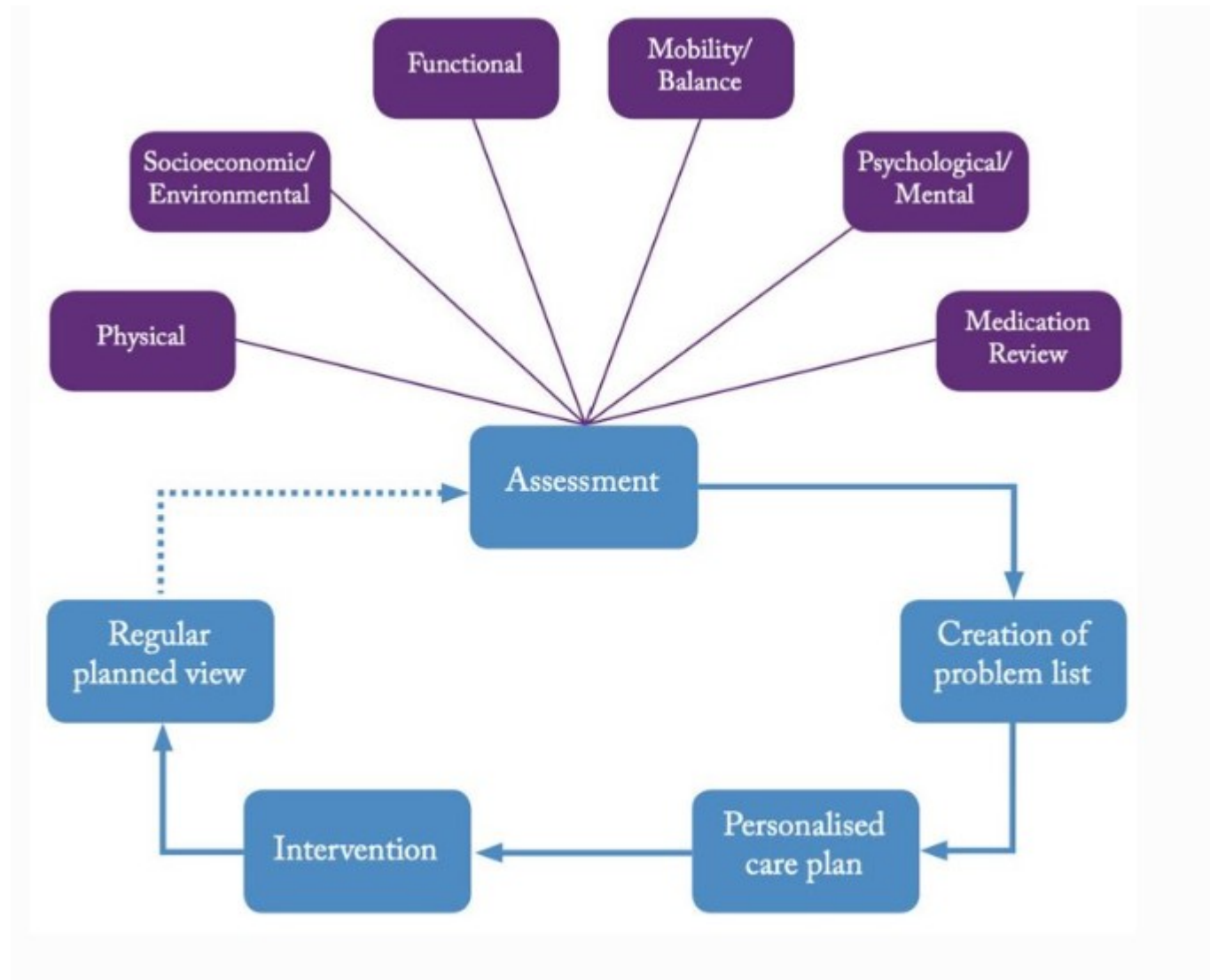
No hallmark sign or symptoms that is pathognomic to confirm diagnosis

Basic principles

The elements of CGA:

- Physical assessment
- Functional, social and environmental assessment
- Psychological components
- Medication review
- Creating a problem list
- Care and support planning
- Involving Social Services

CGA in Primary Care Settings. British Geriatrics Society. British Geriatrics Society. 28 January 2019



-
- Who may be involved?
 - General practitioner
 - Community geriatrician
 - Community nursing team Physiotherapists
 - Occupational therapists
 - Community psychiatric nurses
 - Pharmacists
 - Social Worker
 - Dietician



It was a free gift with my AARP membership.'

FRAILTY ASSESSMENT TOOLS



Fried Frailty Criteria

Weight, gait speed, grip strength, physical exhaustion scale, low energy expenditure, history and physical exams



Rockwood Frailty Index

History and physical exam as well as many health indices

ROCKWOOD CLINICAL FRAILITY SCALE (CFS)

- The Rockwood Clinical Frailty Scale (CFS),¹² first described in 2005
- Semiquantitative tool used to estimate an individual's degree of frailty on a scale of 1 (very fit) to 9 (terminally ill)
- Patients who score a 5 or higher are considered frail
- Main advantage of the CFS is its ease of application
- Score can be derived through a brief interview with a patient or family member without the need for further objective data such as grip strength or gait speed

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.

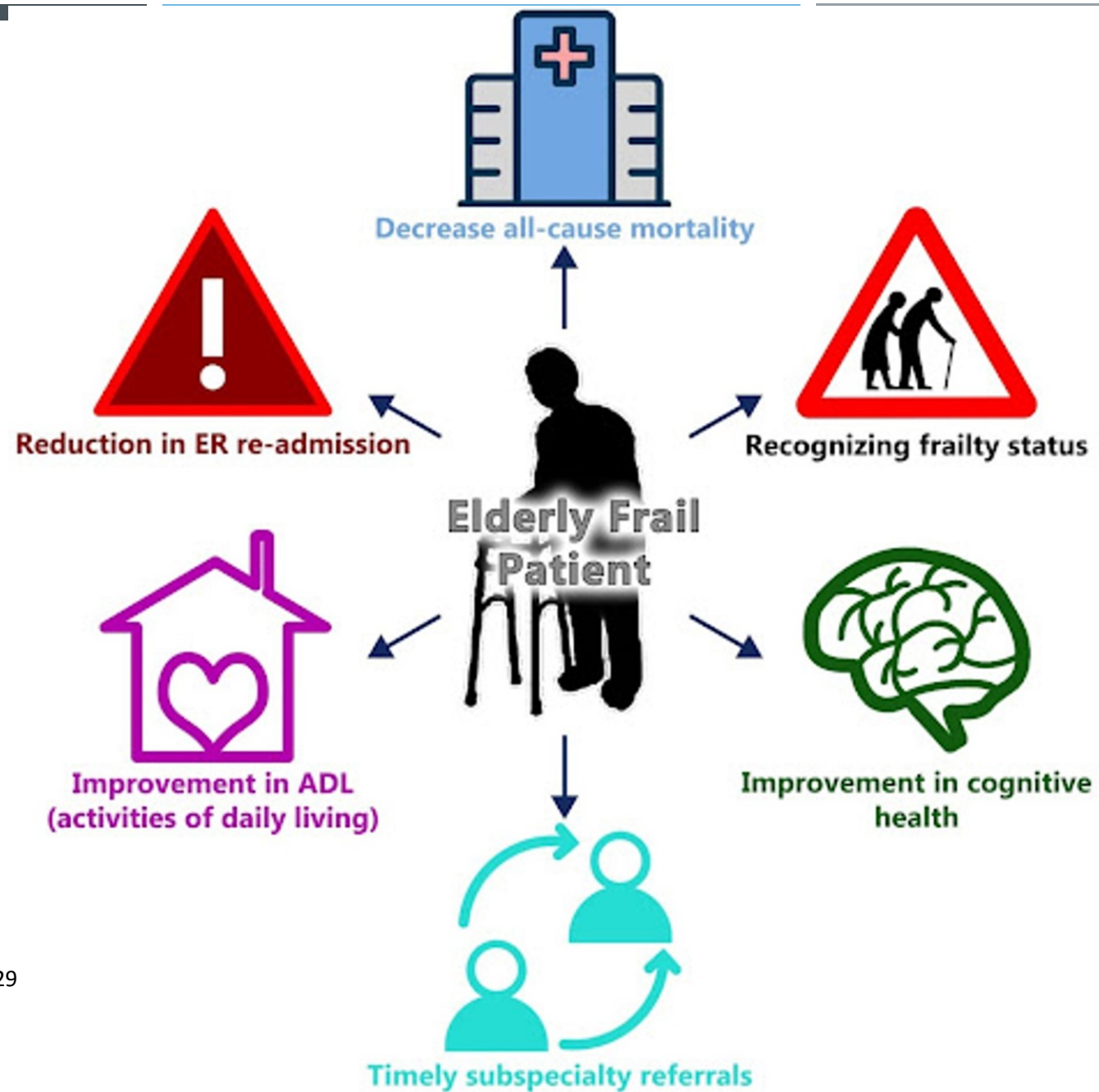
2. K. Rockwood et al. A global clinical measure of fitness and frailty in elderly people. CMAJ 2005; 173:489-495.

FRIED FRAILTY CRITERIA

- Based on the five Fried frailty criteria
 - Weight loss, exhaustion, low physical activity, slowness, weakness
- Three stages: non-frail (score 0), pre-frail (score 1–2) and frail (score 3–5).

Frailty Phenotype





DETECTIVE

word search



M J F
R T
L E I
S U
B

PLAY

INSTRUCTIONS

HIGH SCORES

QUIT





THE EVIDENCE



Non-Medical Application



Medical Application

Medical History
Limited Physical Exam
Lab Studies
PHI or Inspection Report
Prescription Database Checks
Attending Physician Statements
EKG, Stress test
Supplements

■ Discretionary Requirements

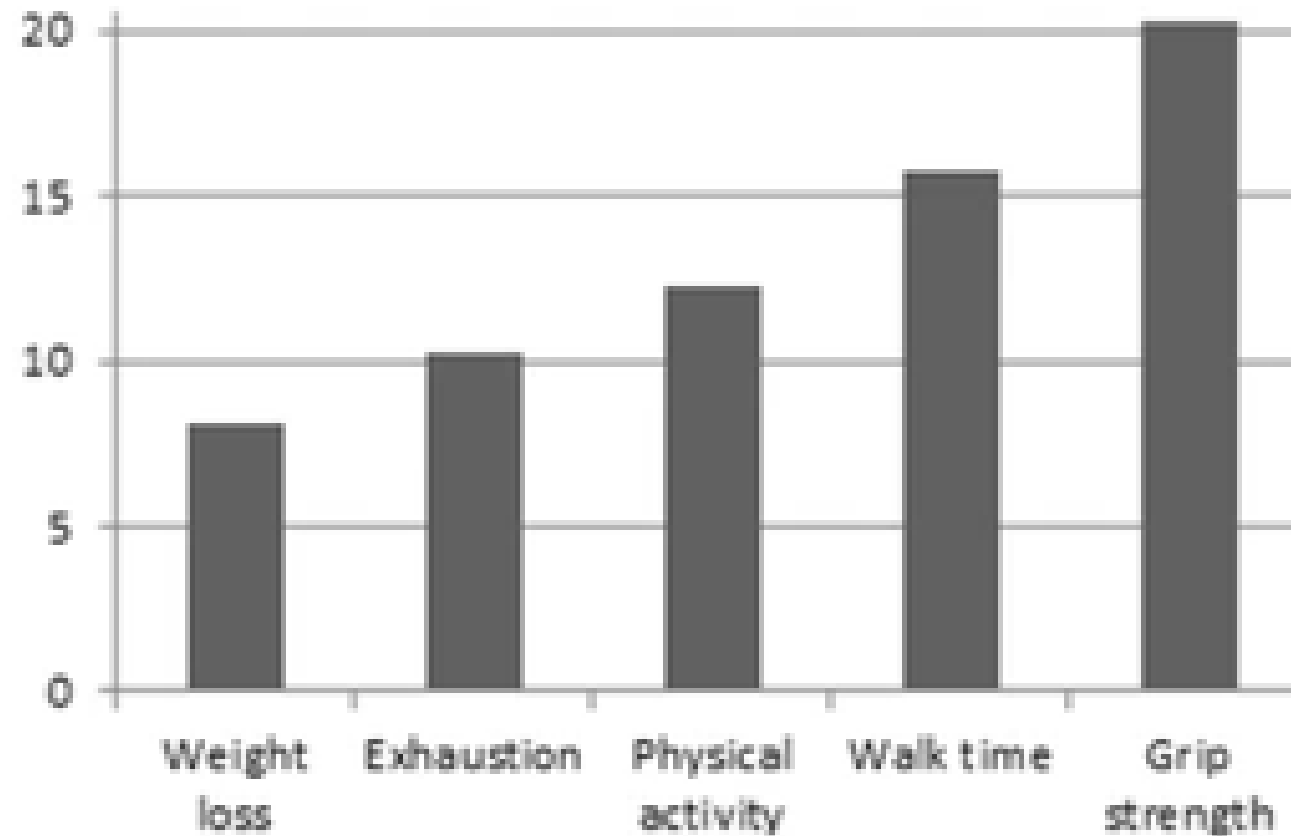
- Supplemental Health Questionnaires
- Additional APS
- Additional lab testing
- Cognitive testing

Chronic Therapist Elderly Cost
Assessing Disabilities Assisted
LONG Caregiver
Physicians Insurance **TERM** On Site
CARE Experience
Age Hygiene Residential
Supervised Senior Personal
Health Facility

person rehabilitation developmental
accessibility interaction emotional
handicap assistance
wheelchair injury safety
disability mental
handicapped impairment
care physical
invalid medical chair help
cognitive healthcare medicine

shock
mortality
horror hazard
grave fear life
death

FRIED PHENOTYPE OF FRAILITY



FACES OF FRAILTY- MOBILITY ISSUES



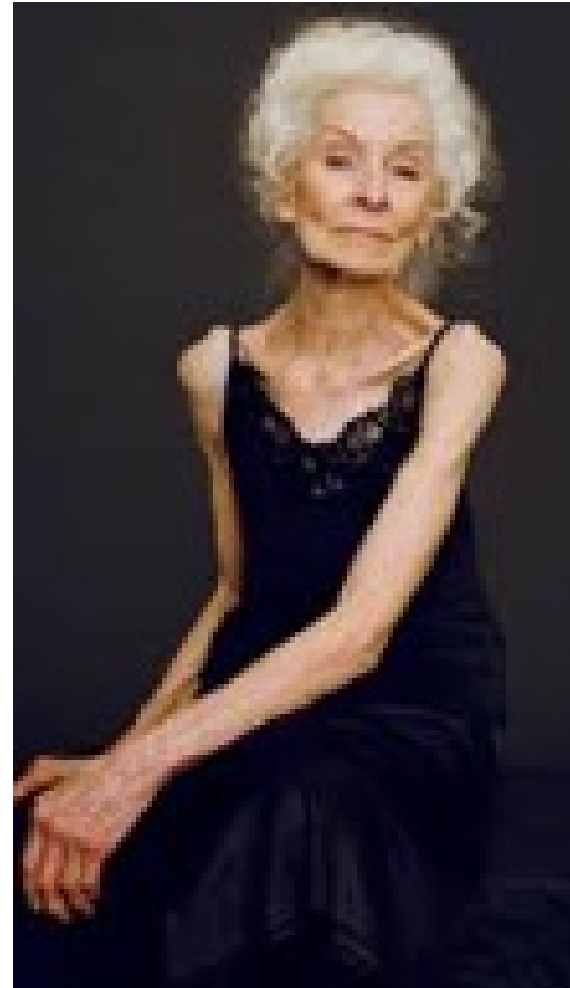
FACES OF FRAILITY - WEAKNESS



FACES OF FRAILTY- DEPRESSION / ISOLATION



FACES OF FRAILITY - WEIGHT LOSS





Witold Bialokur is a strong runner at age 71
Credit...Jessica Dimmock for The New York Times

ADLS



Eating



Bathing



Dressing



Transferring



Toileting



Walking or moving around

IADLS

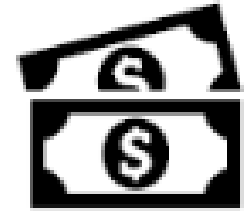
IADLs



Housework



Grocery Shopping



Money Management



Laundry



Getting Around Outside



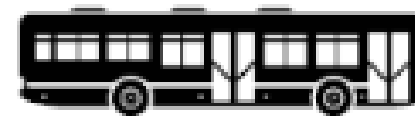
Medicine



Preparing Meals



Telephone Use



Going Places Outside of Walking Distance

COGNITIVE SCREENING

- Delayed word recall
- Clock drawing
- Orientation questions
- Montreal Cognitive Assessment (MoCA) testing
- EMST- Enhanced Mental Skills Test
- Senior Supplements
- Mini-mental Status Exams

MONTREAL COGNITIVE ASSESSMENT (MOCA)
Version 7.1 Original Version

NAME: _____ Education: _____ Date of birth: _____
Sex: _____ DATE: _____

VISUOSPATIAL / EXECUTIVE Copy cube _____ Draw CLOCK (Ten past eleven) (3 points) _____

Points: _____/5

NAMING

Points: _____/3

MEMORY Read list of words, subject must repeat them. Do 2 trials, even if 1st trial is successful. Do a recall after 5 minutes.

	FACE	VELVET	CHURCH	DAISY	RED	No points
1st trial						
2nd trial						

ATTENTION Read list of digits (1 digit/ sec.). Subject has to repeat them in the forward order [] 2 1 8 5 4
Subject has to repeat them in the backward order [] 7 4 2

Points: _____/2

Read list of letters. The subject must tap with his hand at each letter A. No points if > 2 errors
[] FBACMNAAJKLBAFAKDEAAAJAMOFAB

Points: _____/1

Serial 7 subtraction starting at 100 [] 93 [] 86 [] 79 [] 72 [] 65
4 or 5 correct subtractions: 3 pts, 2 or 3 correct: 2 pts, 1 correct: 1 pt, 0 correct: 0 pt

Points: _____/3

LANGUAGE Repeat: I only know that John is the one to help today. []
The cat always hid under the couch when dogs were in the room. []

Points: _____/2

Fluency / Name maximum number of words in one minute that begin with the letter F [] _____ (N > 11 words)

Points: _____/1

ABSTRACTION Similarity between e.g. banana - orange = fruit [] train - bicycle [] watch - ruler

Points: _____/2

DELAYED RECALL Has to recall words WITH NO CUE

	FACE	VELVET	CHURCH	DAISY	RED	Points for UNCUED recall only
Category cue						
Multiple choice cue						

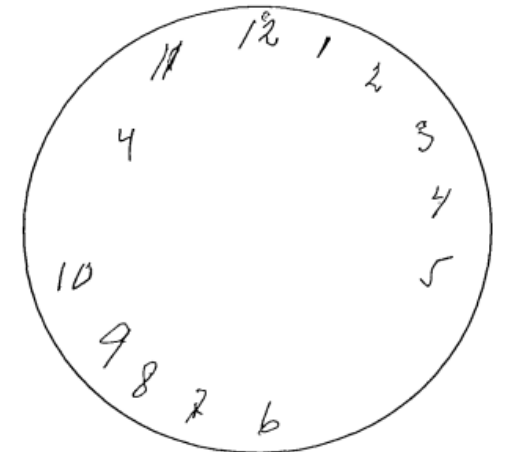
Points: _____/5

Optional

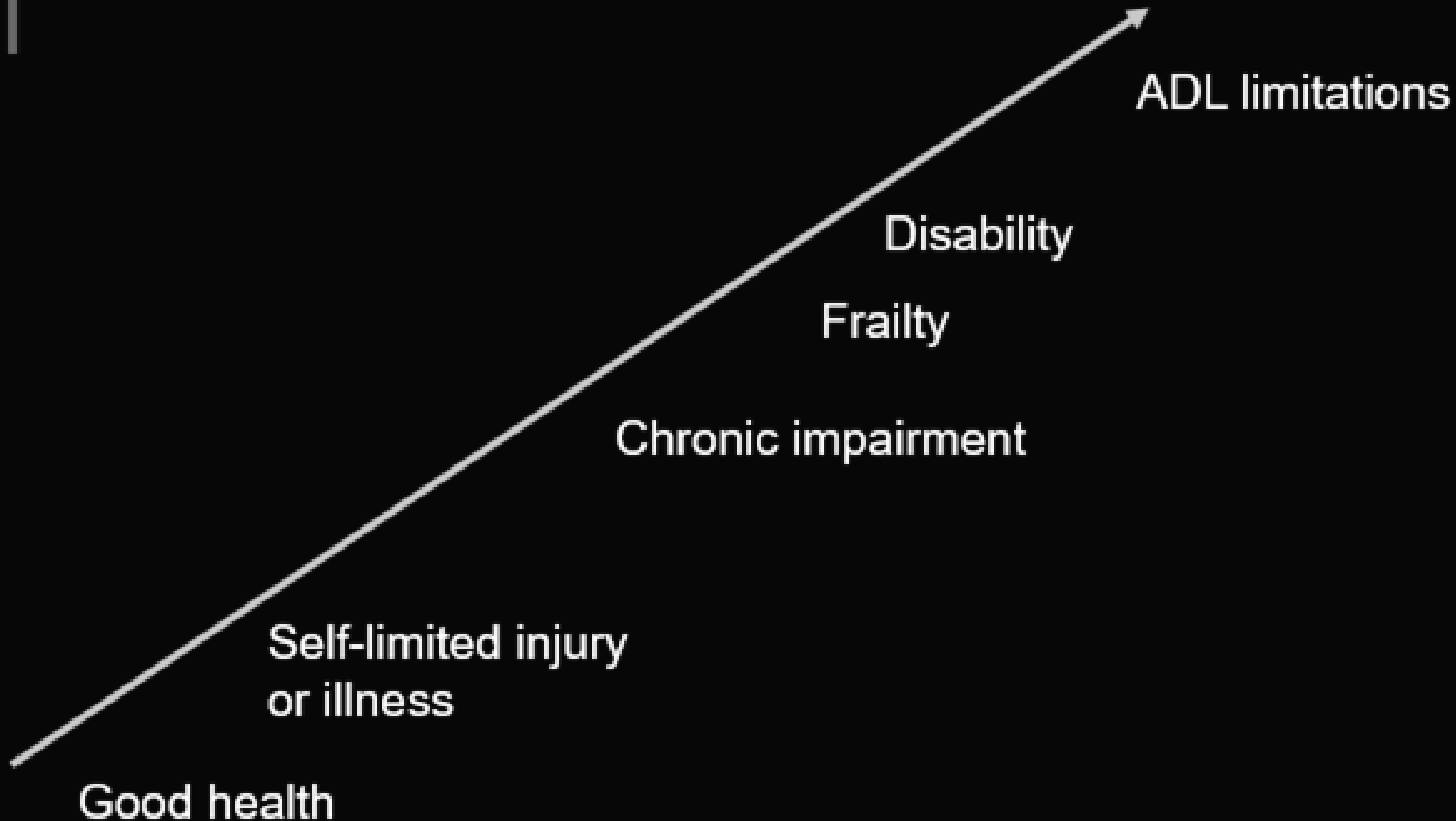
ORIENTATION [] Date [] Month [] Year [] Day [] Place [] City

Points: _____/6

© Z.Nasreddine MD www.mocatest.org Normal 26 / 30 TOTAL _____/30
Administered by: _____ Add 1 point if < 12 yr old







FRAILTY – A CRITICAL THINKING CONCEPT



