Frailty in Clinical Practice

Susan Kurrle

Geriatrician, Hornsby Ku-ring-gai and Eurobodalla Health Services
Network Director, NSLHD Aged Care and Rehabilitation Network
Curran Professor in Health Care of Older People
Faculty of Medicine, University of Sydney
What is frailty?
Definition of Frailty 1

Operationally defined as:

“A clinical syndrome in which three or more of the following are present:

- unintentional weight loss (>4.5kgs in last year)
- self-reported exhaustion
- weakness (grip strength)
- slow walking speed
- low physical activity”

Fried et al. Frailty in older adults: evidence for a phenotype. J Geront 2001;56:M146-M156
FRAIL scale

- Fatigue
- Resistance (ability to climb one flight of stairs)
- Ambulation (ability to walk one block)
- Illnesses (Greater than 5)
- Loss of Weight (>5%)

0 = robuste / 1-2 = pre-frail / ≥ 3 = frail

Morley 2012
Definition of Frailty 2

- Biological process
- “Accumulated deficits”
- Gender specific
- Clearly related to mortality
- Expressed as an “index”

## Frailty Index

### Appendix 1: List of variables used by the Canadian Study of Health and Aging to construct the 70-item CSHA Frailty Index

- Changes in everyday activities
- Head and neck problems
- Poor muscle tone in neck
- Bradykinesia, facial
- Problems getting dressed
- Problems with bathing
- Problems carrying out personal grooming
- Urinary incontinence
- Tollling problems
- Bulk difficulties
- Racial problems
- Gastrointestinal problems
- Problems cooking
- Sucking problems
- Problems going out alone
- Impaired mobility
- Musculoskeletal problems
- Bradykinesia of the limbs
- Poor muscle tone in limbs
- Poor limb coordination
- Poor coordination, trunk
- Poor standing posture
- Irregular gait pattern
- Falls
- Mood problems
- Feeling sad, blue, depressed
- History of depressed mood
- Tiredness all the time
- Depression (clinical impression)
- Sleep changes
- Restlessness
- Memory changes
- Short-term memory impairment
- Long-term memory impairment
- Changes in general mental functioning
- Onset of cognitive symptoms
- Clouding or delirium
- Paranoid features
- History relevant to cognitive impairment or loss
- Family history relevant to cognitive impairment or loss
- Impaired vibration
- Tremor at rest
- Postural tremor
- Intention tremor
- History of Parkinson's disease
- Family history of degenerative disease
- Seizures, partial complex
- Seizures, generalized
- Syncope or blackouts
- Headache
- Cerebrovascular problems
- History of stroke
- History of diabetes mellitus
- Arterial hypertension
- Peripheral pulses
- Cardiac problems
- Myocardial infarction
- Arrhythmia
- Congestive heart failure
- Lung problems
- Respiratory problems
- History of thyroid disease
- Thyroid problems
- Skin problems
- Malignant disease
- Breast problems
- Abdominal problems
- Presence of snout reflex
- Presence of the palatoglossal reflex
- Other medical history
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.


© 2007-2009. Version 1.2. All rights reserved. Geriatric Medicine Research, Dalhousie University, Halifax, Canada. Permission granted to copy for research and educational purposes only.
Is frailty treatable?

**Frailty Phenotype : yes**
- Improve physical function
- Improve nutrition
- Improve psychological status

**Accumulated Deficits : yes**
- Amelioration of physical deficits
- Improvement of physiological reserve
- Treatment of medical conditions and polypharmacy
Frailty Intervention Trial (FIT)

• RCT with intervention of individually designed program addressing physical limitations and nutrition
• 241 community dwelling people aged 70yrs and over, assessed as frail using Fried Frailty criteria (3 or more criteria)
• Randomised to intervention (mainly exercise and nutritional advice) or control (normal care)
• Blinded follow-up at 3 and 12 months

Primary outcomes:
• Frailty (Fried) index score
• Short Physical Performance Battery (SPPB)

FIT Program: Results

Fried Frailty Criteria
Scored out of 5, higher is worse

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>3 months</th>
<th>12 months</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intervention</td>
<td>Control</td>
<td>Intervention</td>
</tr>
<tr>
<td>Fried frailty index (mean)</td>
<td>3.44</td>
<td>3.45</td>
<td>2.87</td>
</tr>
<tr>
<td>Fried frailty (%)</td>
<td>100</td>
<td>100</td>
<td>64.5</td>
</tr>
</tbody>
</table>

NNT to successfully intervene in frailty = 7
FIT Program Results

Short Physical Performance Battery (mean score)
Scored out of 12, higher is better

Baseline | 3 months | 12 months
--- | --- | ---
Intervention | | |
Control | | |
Case  Mrs T: start of intervention

Fried criteria - “frail” – Walking speed, Exhaustion, Grip, Energy expenditure
Case  Mrs T: end of intervention

No longer “frail” – only grip strength
Treating frailty—a practical guide

Nicola Fairhall¹², Colleen Langron³, Catherine Sherrington², Stephen R Lord⁴, Susan E Kurrle³, Keri Lockwood³, Noeline Monaghan¹, Christina Aggar⁵, Liz Gill¹ and Ian D Cameron¹*

Abstract

Frailty is a common syndrome that is associated with vulnerability to poor health outcomes. Frail older people have increased risk of morbidity, institutionalization and death, resulting in burden to individuals, their families, health care services and society. Assessment and treatment of the frail individual provide many challenges to clinicians working with older people. Despite frailty being increasingly recognized in the literature, there is a paucity of direct evidence to guide interventions to reduce frailty. In this paper we review methods for identification of frailty in the clinical setting, propose a model for assessment of the frail older person and summarize the current best evidence for treating the frail older person. We provide an evidence-based framework that can be used to guide the diagnosis, assessment and treatment of frail older people.
So what else do we know about this area?
Frailty and Cancer

The Prognostic Importance of Frailty in Cancer Survivors
Justin C. Brown, MA,* Michael O. Harhay, MPH,* and Meera N. Harhay, MD, MSCE†

• NHANES
• Assessed using Fried Frailty criteria
• N = 416 with cancer
• 9.1% frail, 37.3% pre-frail
• Survival over 11 + years:
  - non frail 13.9 yrs
  - pre frail 9.5 years
  - frail 2.5 years

JAGS 2015; 63: 2538
Assessment for frailty is useful for predicting morbidity in elderly patients undergoing colorectal cancer resection whose comorbidities are already optimized

Kok-Yang Tan, M.B.B.S., M.Med.(Surg), F.R.C.S.\textsuperscript{a,*}, Yutaka J. Kawamura, M.D., Ph.D.\textsuperscript{b}, Aika Tokomitsu, M.D.\textsuperscript{b}, Terence Tang, MBBS, M.R.C.P.\textsuperscript{c}

- 83 patients >75 yrs undergoing colorectal surgery were assessed using Fried criteria
- 23% were frail, and had a 4 fold increase in major complications (OR = 4.083, CI 1.4 – 11.6)
- Aim to use frailty classification to optimise physical condition prior to surgery
Frailty Clinical Practice Guidelines

The Asia-Pacific Clinical Practice Guidelines for the Management of Frailty

Recommendations:

• **Strong:**
  • Use a validated measurement tool to **identify frailty**
  • Prescribe **physical activity** with a resistance training component
  • Address **polypharmacy**

• **Conditional**
  • Screen for, and address, **fatigue**
  • Address **weight loss** with **protein/calorie** supplementation if appropriate
  • Prescribe **Vit D** if Vit D deficient
Use a validated measurement tool to identify frailty

The Edmonton Frail Scale

<table>
<thead>
<tr>
<th>Frailty domain</th>
<th>Item</th>
<th>0 point</th>
<th>1 point</th>
<th>2 points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognition</td>
<td>Please imagine that this pre-drawn circle is a clock. I would like you to place the numbers in the correct positions then place the hands to indicate a time of 'ten after eleven'.</td>
<td>No errors</td>
<td>Minor spacing errors</td>
<td>Other errors</td>
</tr>
<tr>
<td>General health status</td>
<td>In the past year, how many times have you been admitted to a hospital?</td>
<td>3</td>
<td>1–2</td>
<td>a2</td>
</tr>
<tr>
<td>Functional independence</td>
<td>With how many of the following activities do you require help? (meal preparation, shopping, transportation, telephone, housekeeping, laundry, managing money, taking medications)</td>
<td>0–1</td>
<td>2–4</td>
<td>5–8</td>
</tr>
<tr>
<td>Social support</td>
<td>When you need help, can you count on someone who is willing and able to meet your needs?</td>
<td>Always</td>
<td>Sometimes</td>
<td>Never</td>
</tr>
<tr>
<td>Medication use</td>
<td>Do you use five or more different prescription medications on a regular basis?</td>
<td>No</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Nutrition</td>
<td>Have you recently lost weight such as your clothing has become looser?</td>
<td>No</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Mood</td>
<td>Do you often feel sad or depressed?</td>
<td>No</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Continence</td>
<td>Do you have a problem with losing control of urine when you don’t want to?</td>
<td>No</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Functional performance</td>
<td>I would like you to sit in this chair with your back and arms resting. Then, when I say 'GO', please stand up and walk at a safe and comfortable pace to the mark on the floor (approximately 3 m away), return to the chair and sit down.</td>
<td>0–10 s</td>
<td>11–20 s</td>
<td>One of: 11–20 s, or patient unwilling or requires assistance</td>
</tr>
</tbody>
</table>

**FRAIL scale**

- E___fatigue
- R___esistance (ability to climb one flight of stairs)
- A___mbulation (ability to walk one block)
- I___llnesses (Greater than 5)
- L___oss of Weight (>5%)

0 = robuste/ 1-2 = pre-frail / ≥3 = frail

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, standing) 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 III** - 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/answer and social withdrawal.

In moderate dementia, recent memory is very impaired, even though they seemly can remember past life events well. They can do personal care with prompting.

In severe dementia, they cannot do personal care without help.


**DALLAHOUSE UNIVERSITY**

Administered by: _____________________
Is this person frail?

Edmonton Frail Scale: 10/17 Mod frail

FRAIL Scale: 3/5 Frail

Clin Frailty Scale: 6/9 Mod frail
Is this person frail?

- Edmonton Frail Scale: 4/17 Not frail
- FRAIL Scale: 4/5 Frail
- Clin Frailty Scale: 6/9 Mod frail
Is this person frail?

- Edmonton Frail Scale: 10/17 Mod frail
- FRAIL Scale: 0/5 Frail
- Clin Frailty Scale: 4/9 Vulnerable
Where to next for frailty?

- **In hospital:**
  - Assess using FRAIL scale (questionnaire), or Clinical Frailty Scale (observation)
  - Use Fried Frailty criteria (need walking speed and hand grip strength)
  - Identify using eMR based assessment tool
  - Intervene with physiotherapy, dietetics, pharmacy
- **In outpatient setting:**
  - Frailty clinics with nursing, allied health, medical input
  - Pre-op clinics to assess for pre-habilitation
- **In general practice:**
  - Assess using FRAIL scale (questionnaire), or Clinical Frailty Scale (observation and questions)
  - Routine assessment of sit to stand ability
  - Brief nutritional assessment – ask re weight loss
  - Referral for case management of frailty with allied health input
Thank you