What is Frailty?

(Lekan, 2009)
Lupón et al. (2008) reported that frailty is a prognostic indicator in heart failure patients. They demonstrated that 30% of patients with HF met frailty criteria at a younger than expected age.

Methods

Observational study conducted in 7 tertiary level hospitals in New Zealand

Inclusion
Admitted with ACS (MI, valvular replacement, catheter/PCI intervention), aged >70 yrs or >60 yrs (for Māori & Pacific Islanders) between July 2015 and October 2016

Exclusion
Refusal to participate, limitations to hand function or wheelchair bound, severe cognitive impairment, terminal status within 24 hours of admission or inability to comprehend English

Baseline data is from ANZACS QI database
The Frailty Phenotype is based around 5 domains that reflect systems of impaired regulation defined by Fried & Colleagues.

1. Unintentional weight loss
2. Exhaustion
3. Weak grip strength
4. Slow walking speed
5. Low physical activity

Edmonton Frail Scale is a self-reported subjective scale that assesses nine independent domains of frailty.

### Table 1: Edmonton measures of frailty

<table>
<thead>
<tr>
<th>Frailty Measure</th>
<th>Score</th>
<th>1 point</th>
<th>2 points</th>
<th>3 points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognition</td>
<td>Excellent, Very Good, Good</td>
<td>Fairly good</td>
<td>Poor</td>
<td></td>
</tr>
<tr>
<td>General health status</td>
<td>In the past year, how many times have you been admitted to hospital?</td>
<td>Excellent, Average, Poor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Functional independence</td>
<td>Do you need help with the following activities? (e.g. preparing meals, shopping, transportation, telephones, housekeeping, laundry, managing money, using 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 errors</td>
<td>Do you use too many prescription medications or are you taking medications?</td>
<td>No</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Nutrition</td>
<td>Have you recently lost weight and/or your clothing has become loose?</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 problems with incontinence?</td>
<td>No</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Functional performance</td>
<td>Time to get up and go Test</td>
<td>&lt;10s</td>
<td>10-20s</td>
<td>&gt;20s</td>
</tr>
</tbody>
</table>

**Results**
Baseline characteristics (n= 694)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>76.7 ± 6.1</td>
</tr>
<tr>
<td>Gender</td>
<td>62.2% Male</td>
</tr>
<tr>
<td>Body mass index (kg/m²)</td>
<td>28.4 ± 5.78</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
</tr>
<tr>
<td>European</td>
<td>71.3%</td>
</tr>
<tr>
<td>Māori</td>
<td>5.6%</td>
</tr>
<tr>
<td>Pacifica</td>
<td>4.62%</td>
</tr>
<tr>
<td>Other</td>
<td>18.5%</td>
</tr>
</tbody>
</table>

Age

Fried Criteria Scale

Edmonton Frail Scale

Proportion of Frail/Not Frail (%)

Age (yrs)

< 70  70-74  75-79  80-84  > 85

Frail  Not Frail
**Ethnicity**

**Fried Criteria Scale**

**Edmonton Frail Scale**

**Proportion of Frail/Not Frail (%)**

- **Frail**
- **Not Frail**

**Geographics**

*Figure 1: Map of socioeconomic deprivation (NZDep2013), by census area unit, 2013*

(Ministry Of Health, 2013)
Admission Location

Fried Criteria Scale

- Central North Island
- Lower North Island
- South Island
- Upper North Island

Proportion of Frail/Not Frail (%)

- Frail
- Not Frail

Edmonton Frail Scale

- Central North Island
- Lower North Island
- South Island
- Upper North Island

Proportion of Frail/Not Frail (%)

- Frail
- Not Frail

Gender

Fried Criteria Scale

- M
- F

Proportion of Frail/Not Frail (%)

- Frail
- Not Frail

Edmonton Frail Scale

- M
- F

Proportion of Frail/Not Frail (%)

- Frail
- Not Frail
Summary

Proportion of Frailty increased in:

• Female

• Extremely low or high BMI

• Māori and Pacific groups
Frailty is not an inevitable part of ageing, it is potentially modifiable and warrants further research in this population.

Health care and socio economic disparities may explain difference in Māori and Pacific populations

Research needed to assess effects of interventions on reducing risk of frailty

**Prevention**

**Health benefits from regular exercise:**
- ↑ Exercise tolerance & capacity
- ↑ Muscular strength and functional mobility
- ↑ Quality of life
- ↑ Cognitive function
- ↓ Risk of secondary CVD events
- ↓ Risk of cardiac-related mortality
- ↓ CVD risk factors
- ↓ Inflammation & oxidative stress
- ↓ Risk of falls

Acknowledgments

Supervisors

- **James Stinear** PhD
- **Jocelyne Benatar** MBChB, MD

**Ralph Stewart**, Lead investigator of on-going study at Auckland DHB

**Karishma Sidhu**, Statistician at Auckland DHB

ANZACS QI group

References


