

# *Exercise as a component of treatment for frailty*

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**NSW FALLS PREVENTION NETWORK FORUM**

**TRANSLATING EVIDENCE INTO PRACTICE**

27 May 2011



THE UNIVERSITY OF  
SYDNEY

- weak; not robust; having delicate health
- easily broken or destroyed
- [morally weak]
- the state of being weak in health or body

Macquarie Dictionary

Web Dictionary

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# Frail / Frailty – definitions



# Frail / Frailty – definitions



Operationally defined as:

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

- unintentional weight loss (10lbs 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)

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## Frailty: what is it? (Rockwood and Mitnitsky)

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

(Mitnitski et al. The mortality rate as a function of accumulated deficits in a frailty index. *Mechanisms of Ageing and Development* 123 (2002) 1457 - 1460)

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# Clinical Frailty Scale (Rockwood et al)

Rockwood et al. A global measure of fitness and frailty in elderly people. *Can Med Assoc J* 2005; 173 (5):489-495

## The CSHA Clinical Frailty Scale



1 Very Fit – robust, active, energetic, well motivated and fit; these people commonly exercise regularly and are in the most fit group for their age



2 Well – without active disease, but less fit than people in category 1



3 Well, with treated comorbid disease – disease symptoms are well controlled compared with those in category 4



4 Apparently vulnerable – although not frankly dependent, these people commonly complain of being “slowed up” or have disease symptoms



5 Mildly frail – with limited dependence on others for instrumental activities of daily living



6 Moderately frail – help is needed with both instrumental and non-instrumental activities of daily living



7 Severely frail – completely dependent on others for the activities of daily living

8 Terminally ill

Note: 1. Canadian Study on Health and Aging  
2. K. Rockwood et al. A global clinical measure of fitness and frailty in elderly people. *CMAJ* 2005; 173:489-495.

## Can it improve?



Fried : yes

- Better physical function
- Better nutrition
- Better psychological status

Rockwood : yes

- ‘Amelioration of deficits’
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If 'treatment' is defined broadly

- Exercise (strength, balance, endurance)
  - Nutrition (mainly under-, but over- occasionally)
  - Psychological / social factors
  - Chronic disease management
  - Support services
  - Carer assistance
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- People over 70, who are ‘frail’ using the Fried criteria
- Treatment approach is an “interdisciplinary multifactorial” program
- ‘Treatment’ is individually provided and offered according to:
  - Lack of strength, slow walking, inactivity
  - Weight loss
  - Exhaustion
  - Chronic illnesses
  - Other factors eg support services or carer issues
- RCT – intervention group treated for 12 months (control group ‘usual care’)
- The study has completed data collection and analysis is in progress
- First results announced today at the Forum



Fried - “frail” – Walking speed, Exhaustion, Grip, Energy expenditure

Rockwood – category 4 - “apparently vulnerable”

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# The Frailty Intervention Trial - outcomes

- Primary
    - Frailty (Fried definition) index score
    - Short Physical Performance Battery (SPPB)
  
  - Secondary
    - Hospitalisation and residential aged care facility use
    - ADL (Barthel Index)
    - EQ5D
    - Geriatric Depression Scale
    - Falls risk (PPA)
    - Other
    - Falls
-

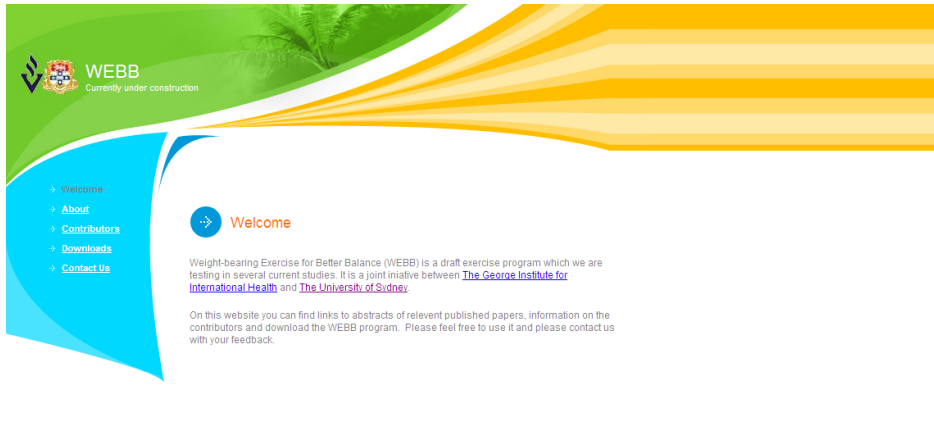
# The Frailty Intervention Trial (FIT)

- It is possible to successfully “treat” frailty
  - Human frailty is reversible
  
  - How is this done?
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## Interventions directly targeting Fried criteria

Fried criterion	Intervention (per FIT protocol)	Subjects receiving intervention	
		n	%
Slow walking	<b>WEBB</b>	111	<b>93</b>
Weakness			
Weight loss	Dietician intervention	60	<b>50</b>
	- advice	60	<b>50</b>
	- nutritional supplements	35	<b>29</b>
	- other	7	<b>6</b>
Self reported exhaustion	Referral to psychiatrist/psychologist	4	<b>3</b>
	Options to increase social engagement		
Self reported exhaustion / Reduced energy expenditure	Cognitive behavioral intervention		
	Working toward activity goals		
	Working toward participation goals	61	<b>51</b>
	Referral to services as necessary	120	<b>100</b>

- Median 10 sessions with physiotherapist
  - Median 4 phone calls to participant
  - Median 4 phone calls to other parties
  
  - Including median 8 sessions of strength, balance and endurance training
  - Weight-bearing for Better Balance (WEBB) program ([www.webb.org.au](http://www.webb.org.au))
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# Weight-bearing Exercise for Better Balance (WEBB)

A challenging, safe, evidence-based  
physiotherapy program for older

## *Warm-up*

1. *High stepping on the spot*

## *Co-ordination exercises*

2. *Standing with a decreased base*
3. *Graded reaching in standing*
4. *Stepping in different directions*
5. *Walking practice*

## *Strength/co-ordination exercises*

6. *Sit-to-stand*
7. *Heel raises*
8. *Lateral step-up*
9. *Forward step-up*
10. *Half-squats sliding down a wall*

## *Endurance exercise*

11. *Bike, treadmill walk, overground walk or sit-to-stand*

## *Other interventions if appropriate*

*Getting off the floor training*

*Additional strength/co-ordination exercises and stretches*

www.webb.org.au