

Geriatric Medicine can detect early
physical frailty and reverse it.

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Case report...

- Man 85 years,
- Send to the Geriatric Acute Unit because major disability, and proposed for placement in a long term care.
- Complaints:
 - Not longer able to walk
 - Deaf
 - Nearly blind....

Case report...

- Within two weeks normally functioning, happy, back to his home!
- the cardiac insufficiency was not optimally treated;
- he had pronounced cataract: that was operated with success;
- he had two ear props, that where successfully easily removed.



What is frailty?

What is frailty?

- Well known by all geriatricians, but not so easy to quantify.
- Ex.
 - SOF-Index
 - Short Physical Performance Battery

The SOF index (Study of Osteoporotic Fractures)

- There is frailty when 2 or more of the components are present:
 - 1. Weight loss (of $\geq 5\%$ between 2 examinations)
 - 2. Inability to rise from a chair (5 times without using the arms)
 - 3. Poor energy (a no answer on the question: “do you feel full of energy?”)
- If no components are present: ROBUST
- If one component is present: INTERMEDIATE STAGE

Short Physical Performance Battery

score	5 chair stands (time)	4m walking (time)	Balance
0	unable	unable	Side-by-side 0-9 s
1	>16,6 s	>7,5 s	Semitandem 0-9 s
2	13,7-16,6 s	5,4-7,5 s	Tandem 0-2 s
3	11,2-13,6 s	4,1-5,3 s	Tandem 3-9 s
4	<11,2 s	<4,1 s	Tandem 10 s

What is the aetiology of frailty?

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- Complex situation
- Need for a Comprehensive Geriatric Assessment

Comprehensive Geriatric Assessment

- Is routinely performed in the Acute Geriatric Units in the general Hospitals.

L.Rubenstein
NEJM 1983

RUBENSTEIN – 1 – MORTALITY AFTER 1 YEAR

DISCHARGE TO	FROM GERIATRIC UNIT	FROM NON-GERIATRIC DEPARTMENTS
NURSING HOME	12%	37%
HOME	11%	41%

PERCENT DEAD

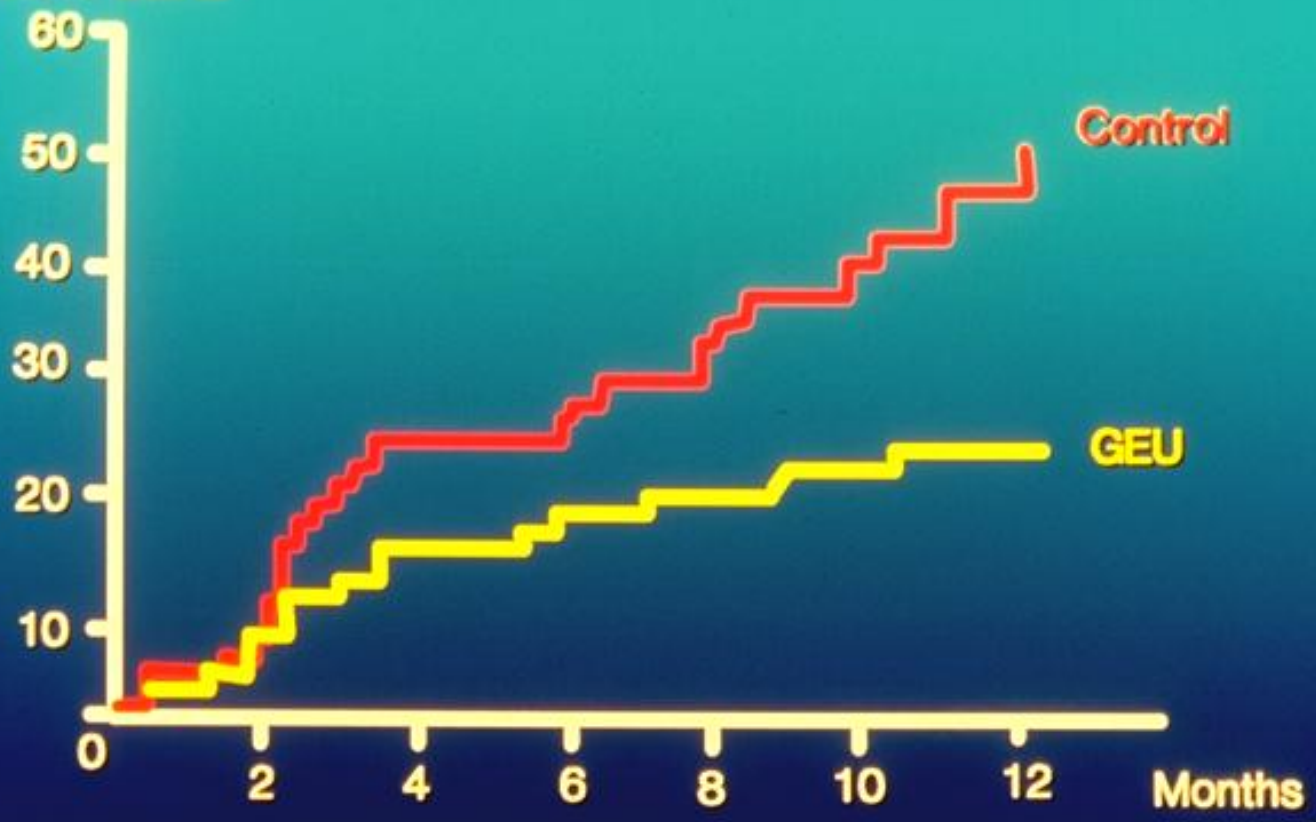


Figure 1. One-Year Mortality Curves for Geriatric Evaluation Unit (GEU) and Control Patients.

RUBENSTEIN – 2 – FUNCTIONALITY AFTER 1 YEAR

DISCHARGE TO	FROM GERIATRIC UNIT	FROM NON-GERIATRIC DEPARTMENTS
NURSING HOME	12%	30%
HOME	73%	53%

RUBENSTEIN - 3- COST AFTER 1 YEAR

DISCHARGE TO	FROM GERIATRIC UNIT	FROM NON-GERIATRIC DEPARTMENTS
Length of stay hospital	119,3	93,4
Length of stay NH	30	76,3
Total length of stay	149,3	168,7
COST (US \$)	22.597	27.826



Comprehensive geriatric assessment for older adults admitted to hospital (Review)

**Ellis G, Whitehead MA, O'Neill D, Langhorne P,
Robinson D**

July 2011

The Cochrane Library

- -if admission on age alone: NNT is 25
- -if admission according the needs of the patient: NNT is 6

to allow the person to stay at home within 6 months. (NNT 13 for 12 months)

The Cochrane Library

- More older patients are likely to survive and return home if they receive comprehensive geriatric assessment (CGA) whilst an inpatient.

Comprehensive Geriatric Assessment

- To avoid missing important elements:
 - ADL
 - IADL
 - Cognition
 - Mobility (falls)
 - Pain
 - Depression
 - Nutrition
 - Social problems
 - Quality of life

Comprehensive Geriatric Assessment

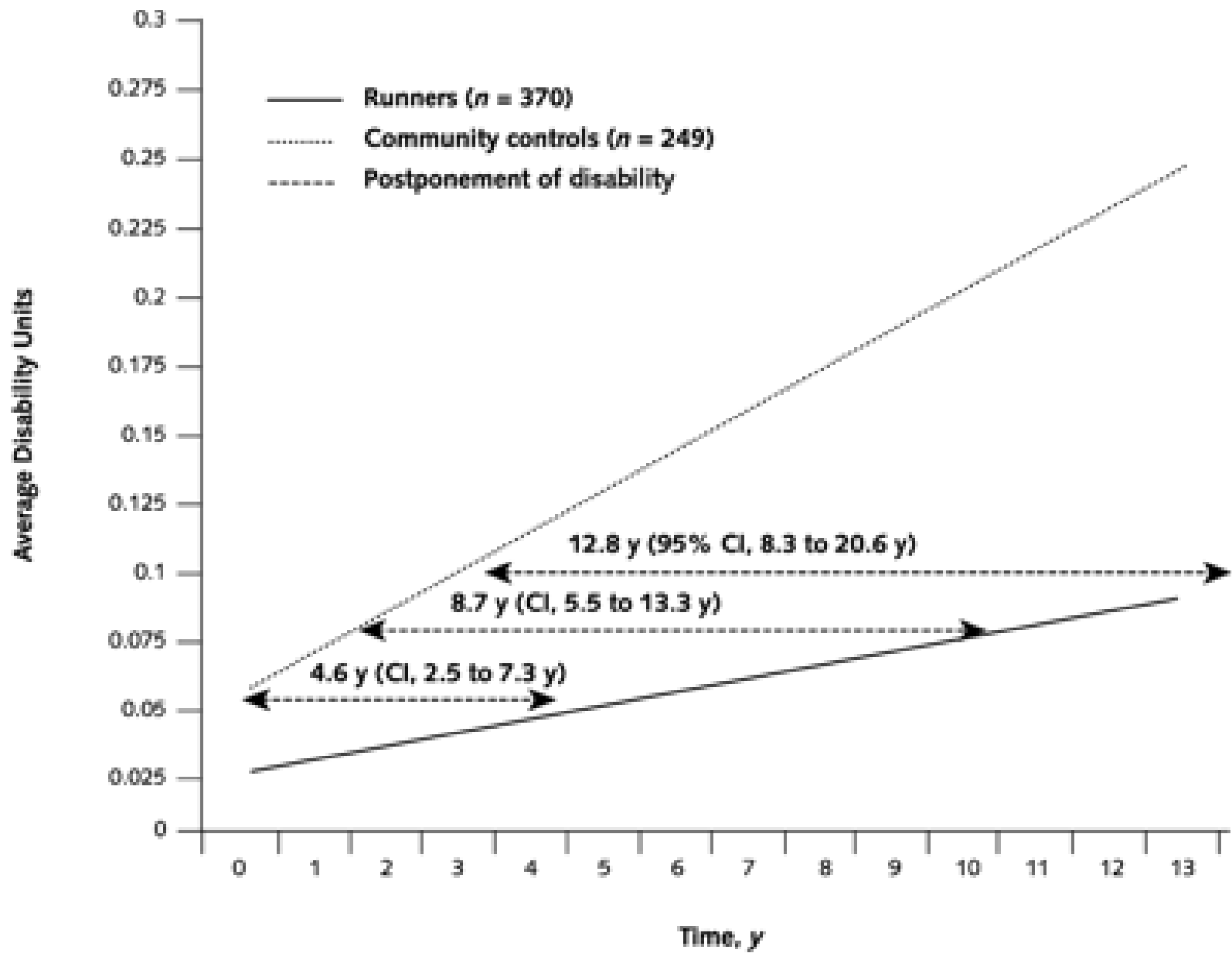
New Universal Instrument: the **InterRAI tool**:

- used world wide,
- detect all possible aspects of impaired function,
- easy to use,
- give on line the list of problems,
- makes possible a follow up of the person through all sites of care,
- makes possible to compare units, regions, countries,
- makes possible to optimize the entrance in long term care or for long term care at home,
- makes possible to compare groups of identical complex patients,
- etc .

Most important factors in developing frailty:

- Lack of Physical exercise.
- Undernutrition

Lack of Physical exercise.



Undernutrition

- Not only in Africa...

Introduction

MALNUTRITION

- **OVER**nutrition -> **OBESITY**

60-75 years

- **UNDER**nutrition -> **Sarcopenia**

>75 years

Definition of undernutrition

- Undernutrition is a state of nutrition in which a deficiency of energy, protein and other nutrients causes adverse effects on tissue or body form (body shape, size and composition), function or clinical outcome.

(Stratton RJ et al. 2003)

Pathophysiology

In case of protein-energy undernutrition:

- Phase 1: use of the fat stores, easy recovery
- Phase 2: cachexia, with acute phase response, acute protein and muscular degeneration : **great risk of no recovery**, once installed.

Why so many under nourished older persons?

- Normal intake
 - Man 1600 Kcal
 - Female 1200Kcal
- Older persons: >15% consumes < 1000Kcal

Prevalence of undernutrition at home

- Many studies concludes that 15-25% of older persons living at home are undernourished.

In frigo veritas...Rapin(Geneva)

Un réfrigérateur vide

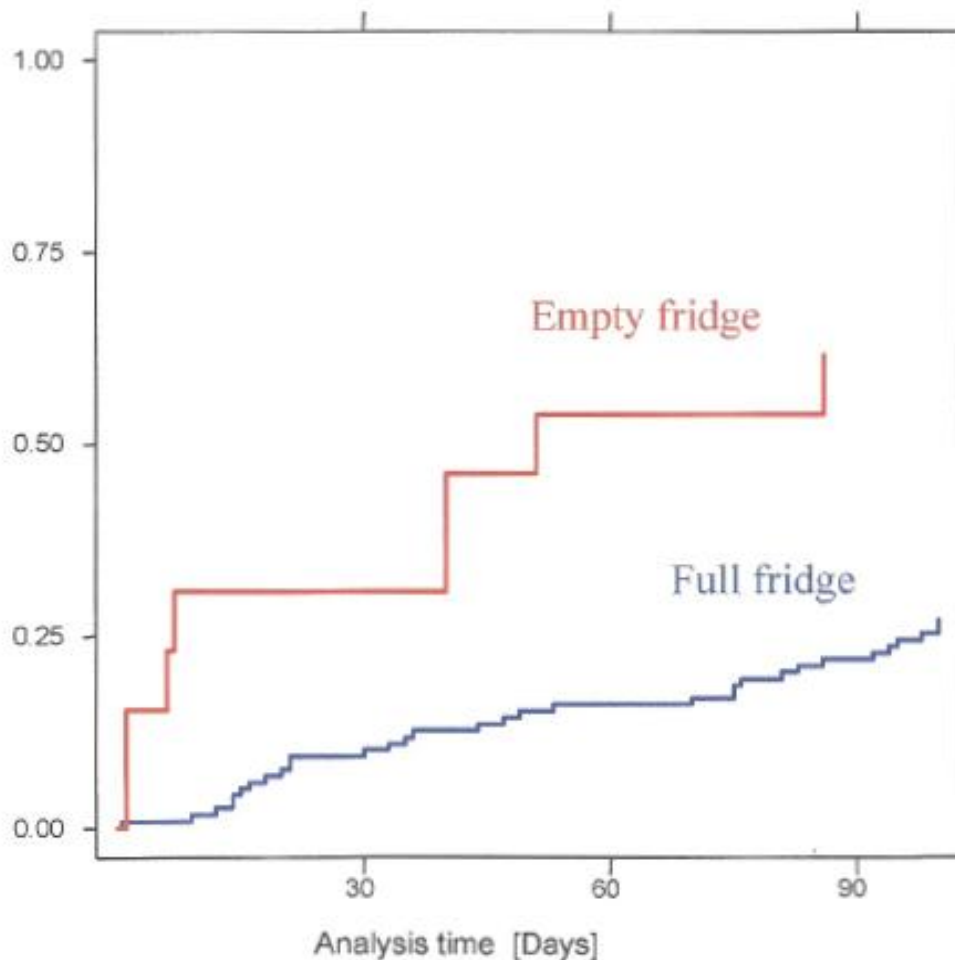
In Frigo Veritas



In frigo veritas...Rapin(Geneva)

Risques d'hospitalisation lorsque le frigo est vide

Kaplan-Meier



Log-rank test:

$p = 0.006$ at 30 days,

$p = 0.812$ at 60 days,

$p = 0.458$ at 90 days

Prevalence of malnutrition in Hospitals

- Between 25 and 45% undernourished.

Study in acute Geriatric wards in General Hospitals in Belgium (2007)

Details:

- MNA-SF:
 - Score <12: risk for undernutrition and undernutrition in 72,60%
- MNA:
 - Score <17: undernutrition in 35,90%
 - Score 17-23: risk for undernutrition in 41,90%

Prevalence of malnutrition in NH

- The Netherlands: 18-28%
- 17-65% : Stanga Z et al. 2004

Nobody is aware of the problem...

Origins of undernutrition in the older person

Origins of undernutrition in the older person

- SOCIAL
 - Living alone
 - Physical handicap or cognitive deficit
- ECONOMICAL
 - Poverty/ low incomes of retirees
- HEALTH
 - Poor oral/dental situation
 - Depression
 - Cognitive disorders
 - Diminution of taste and smell
 - Drugs
 - Many diseases

Malnutrition is a disaster:

- Malnutrition causes:
 - Higher vulnerability to illness: FRAILITY
 - Impaired wound healing
 - More infections
 - Increased mortality
 - Reduced effectiveness of drugs
 - Increase in falls (SARCOPENIA: often irreversible!)
 - Inactivity, bedridden situations, pressure sores and tromboembolims
 - Depression
 - Confusion with slower recovery
 - Etc (NICE , 2005)

Interventions are possible.

National Care Program among Acute Geriatric Units (Be)

- 12 hospitals geriatric units
- 1139 consecutively admitted patients
- Observational 6 month trial: only registration nutritional status at admission and at discharge
- Interventional 6 month trial: + standardized nutritional intervention (“meals on wheels” approach)

“Meals on wheels”

- **M**edication
- **E**motional problems (depression)
- **A**norexia nervosa (tardive) and abnormal attitudes to food
- **L**ate life paranoia
- **S**wallowing problems

- **O**ral problems
- **N**o Money

- **W**andering and other dementia behaviours
- **H**yperthyroidism, hyperparathyroidism
- **E**ntry problems (malabsorption)
- **E**ating problems (physical and cognitive)
- **L**ow salt, low cholesterol diets
- **S**hopping (food availability)

Results

- MNA at admission: mean 18.5 (9-29)
- Length of stay:
 - Phase I : 27.1d
 - Phase II: 21.7d
- % of patients receiving caloric supplements:
 - Phase I : 20%
 - Phase II: 25%

Belgian Nutrition Plan

- Hospitals with a Nutritional plan can receive a grant to pay a “Nutrition Nurse” to supervise the Nutritional optimisation in the hospital.
- Results: less use of parenteral nutrition!!

Take Home Messages

- Frailty is now identified as one of the major challenges for older people.
- Comprehensive Geriatric Assessment is needed to identify all the possible causes.
- The Inter RAI tool is an unique opportunity to help.
- Promoting regular physical exercise and preventing undernutrition are two very simple methods to diminish this actual societal problem.