

# Malnutrition or frailty? Overlap and evidence gaps for identification and treatment

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***Jane Murphy RNutr RD  
Professor of Nutrition  
Ageing and Dementia Research Centre***

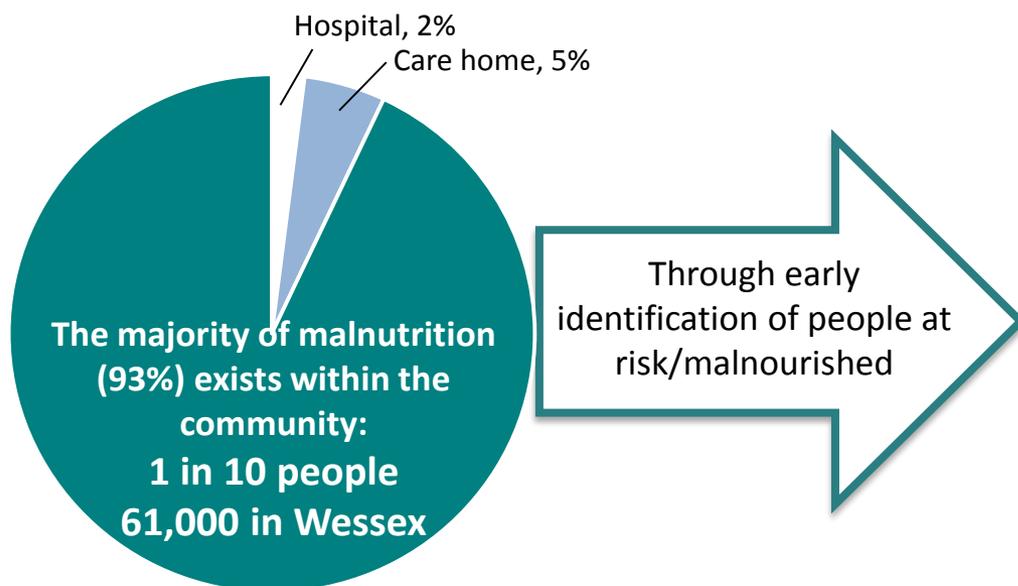
# What is malnutrition?

***‘ a state resulting from a lack of uptake or intake of nutrition leading to altered body composition (decreased fat free mass and body cell mass) leading to diminished physical and mental function and impaired outcome from disease ‘***

*Cederholm et al. 2015 ESPEN Consensus Statement*

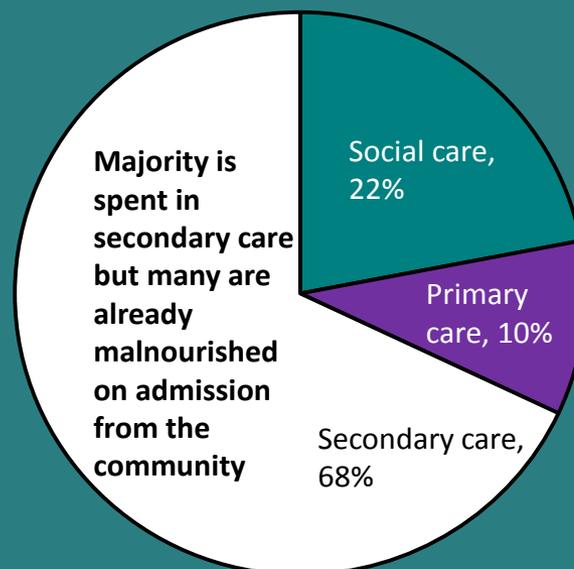
Here we will focus on **undernutrition**.

# Why is it important to identify & prevent malnutrition in older people?



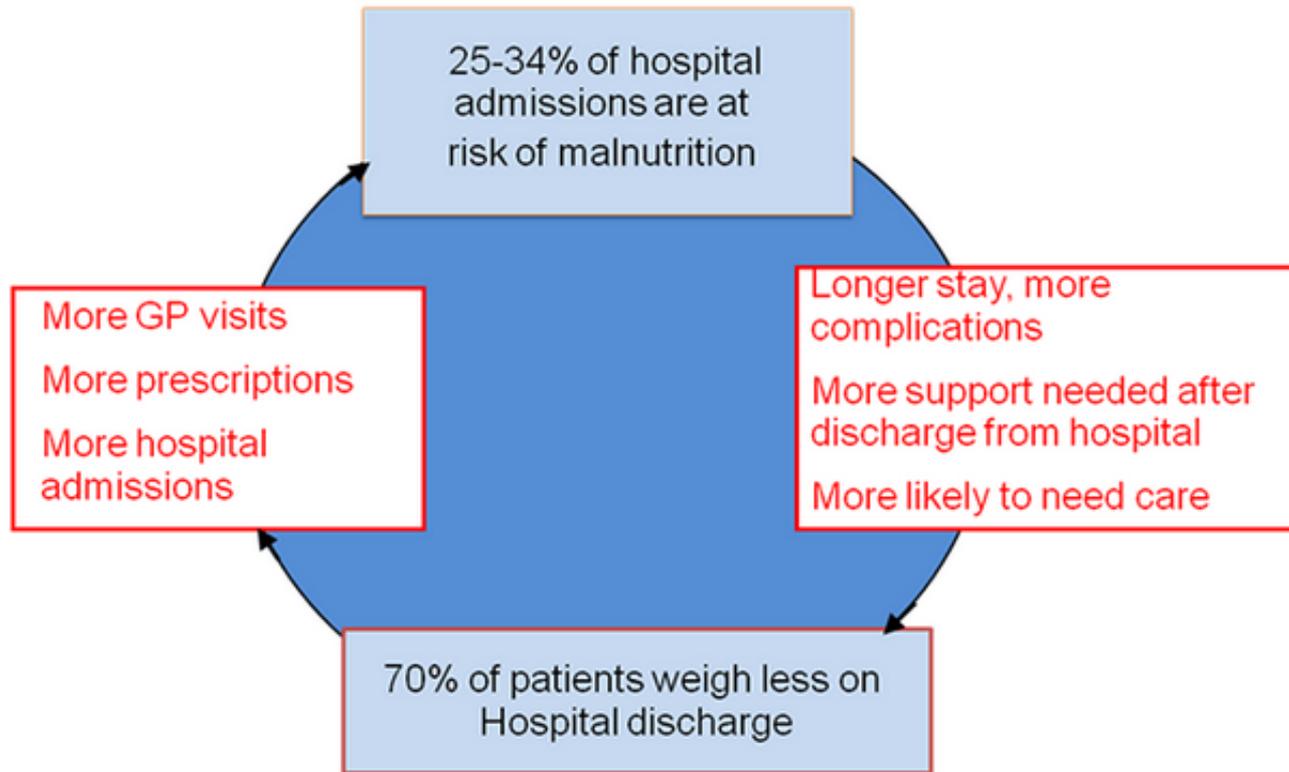
**Despite national guidelines, malnutrition is still under-detected, under-treated, under-resourced.... and often overlooked**

- Delayed onset of frailty (4 times more likely if undernourished)
- Improved recovery & body function
- Fewer nurse, GP visits
- Fewer hospital admissions & decreased length of stay
- Increased independence
- Huge cost savings: undernutrition estimated to cost: **£30.7b in the UK / £1.4b in Wessex (2018\*)** and by 2043\*: **£70b in the UK £2.5b in Wessex**



\*Elia, 2015, plus estimation for inflation & population growth. Wessex data from 2016 Local Authority District population data and extrapolating from 2015 estimates

## The Malnutrition Carousel



# Why do older people become malnourished?

## Medical (disease-related) Factors

- Nausea, vomiting or poor appetite caused by ill health / medication
- Conditions affecting the digestive system
- Dementia,
- Chronic obstructive pulmonary disease (COPD)
- Cancer
- Chronic liver disease
- Swallowing difficulties

**Malnutrition results from medical, physical and social factors**

## Social Factors

- Eating times
- Poor positioning
- Loneliness and social isolation
- Lack of transport to get to shops
- Bereavement
- Ability to cook nutritious meals
- Reliance on carers to source and prepare food
- Financial issues / poverty
- Culture and beliefs around food

## Physical Factors

- Memory
- Poor appetite, e.g. caused by pain
- Feeling full quickly
- Trouble opening food packaging
- Difficulty reading food labels and instructions
- Inability or difficulty holding cutlery, cutting food or physically feeding oneself
- Taste changes
- Dry mouth
- Loose teeth / dentures
- Sight loss / mobility making it difficult to get to the shops, cook and eat independently



# Nutrition in Older People Programme

Executive Summary

[Click here for the full Nutrition in Older People report](#)

@WessexAHSN  
wessexahsn.org.uk



Nutrition in Older People  
Programme: 2014 - 2018

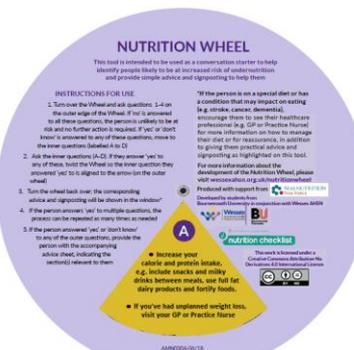
*Implementation of integrated  
nutritional care in the community  
care setting for the identifying,  
screening, prevention and  
treatment of malnutrition in older  
people*

[https://wessexahsn.org.uk/img/programmes/  
NutritionReportExecutiveSummary.pdf](https://wessexahsn.org.uk/img/programmes/NutritionReportExecutiveSummary.pdf)



# The Nutrition Wheel & The Patients Association Nutrition Checklist

- **Simple, well tested** - designed to identify malnutrition risk
  - ❑ **Section A** - 4 questions to focus discussions on unplanned weight loss and nutrition, and identify potential risk of undernutrition
  - ❑ **Section B** - for those at increased risk from section A. It provides guidance around basic advice and signposting
- **Validated research** - **312 older people from 21 lunch/activity clubs** moderate agreement when compared to 'MUST'; identified more people at risk than 'MUST' (21.8% vs 9.9%)  
*(Murphy et al 2019, accepted for publication)*



**Section A:**  
Tick the relevant box to indicate the person's answers; then refer to the actions below.

1. Are you or your family concerned that you may be underweight or need nutritional advice?
  - Yes
  - No
  - Don't know
2. Have you lost a lot of weight unintentionally (in the past 3-6 months)?
  - Yes – do you know why? .....
  - No
  - Don't know
3. Have you noticed that your clothes or rings have become loose recently?
  - Yes
  - No
  - Don't know
4. Have you recently found that you have lost your appetite and/or interest in eating?
  - Yes
  - No
  - Don't know

**Is the person at increased risk of undernutrition?**  
*(tick 'YES' if the client answered 'yes' or 'don't know' to one or more questions)*

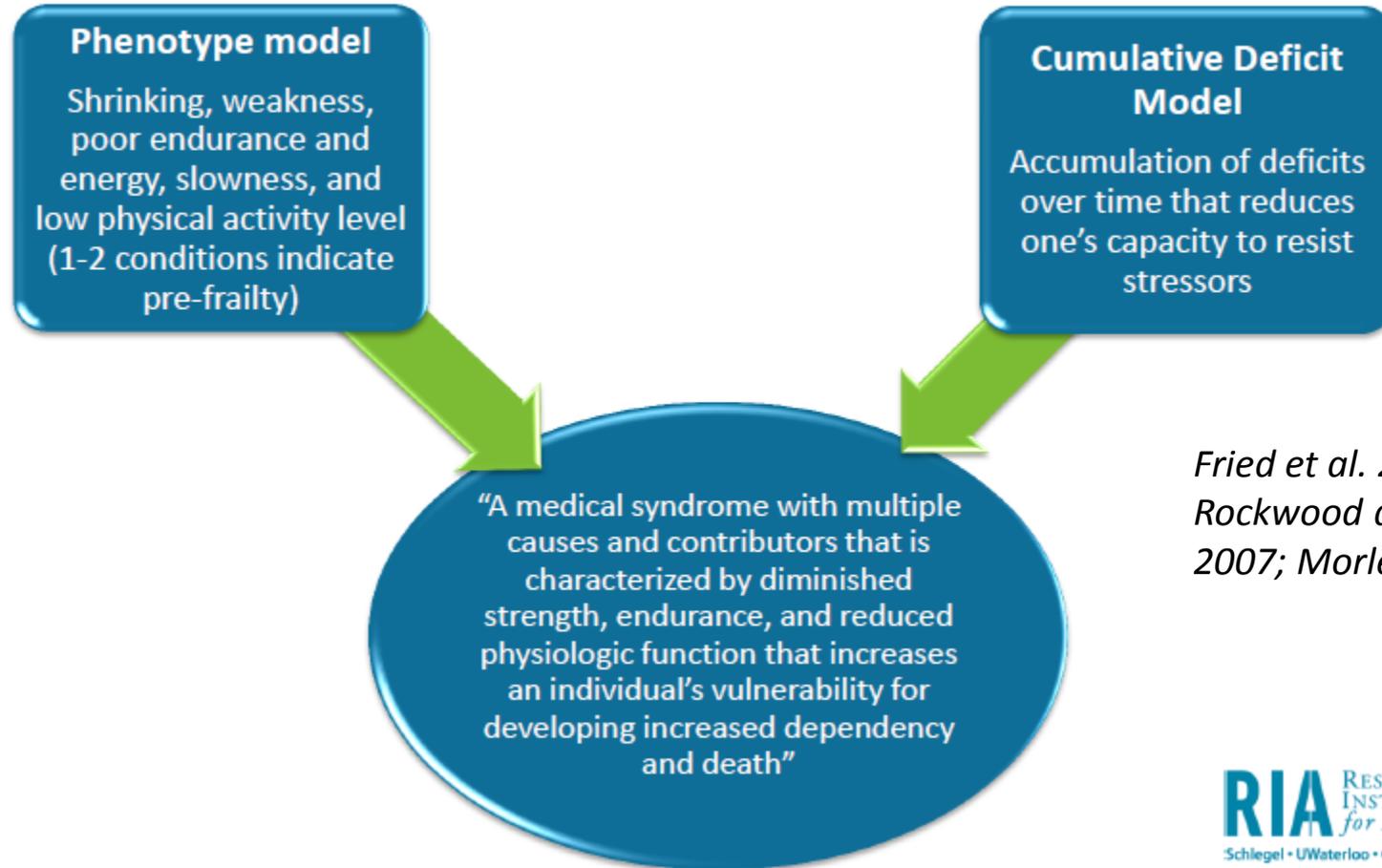
YES       NO

**Further assessment & signposting / advice needed (Section B)**  
 Advise the person to see their GP or Practice Nurse

**No further action needed**

# What is Frailty?

Variable prevalence in community 4-59% (Clegg et al 2013)



Taken from Laur & Keller 2017



*J Nutr Health Aging. 2019;*

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## **PHYSICAL FRAILTY: ICFSR INTERNATIONAL CLINICAL PRACTICE GUIDELINES FOR IDENTIFICATION AND MANAGEMENT**

E. DENT<sup>1,2</sup>, J.E. MORLEY<sup>3</sup>, A.J. CRUZ-JENTOFT<sup>4</sup>, L. WOODHOUSE<sup>5</sup>, L. RODRÍGUEZ-MAÑAS<sup>6</sup>,  
L.P. FRIED<sup>7</sup>, J. WOO<sup>8</sup>, I. APRAHAMIAN<sup>9</sup>, A. SANFORD<sup>3</sup>, J. LUNDY<sup>10</sup>, F. LANDI<sup>11</sup>, J. BEILBY<sup>1</sup>,  
F.C. MARTIN<sup>12</sup>, J.M. BAUER<sup>13</sup>, L. FERRUCCI<sup>14</sup>, R.A. MERCHANT<sup>15</sup>, B. DONG<sup>16</sup>, H. ARAI<sup>17</sup>,  
E.O. HOOGENDIJK<sup>18</sup>, C.W. WON<sup>19</sup>, A. ABBATECOLA<sup>20</sup>, T. CEDERHOLM<sup>21</sup>, T. STRANDBERG<sup>22,23</sup>,  
L.M. GUTIÉRREZ ROBLEDO<sup>24</sup>, L. FLICKER<sup>25</sup>, S. BHASIN<sup>26</sup>, M. AUBERTIN-LEHEUDRE<sup>27</sup>,  
H.A. BISCHOFF-FERRARI<sup>28</sup>, J.M. GURALNIK<sup>29</sup>, J. MUSCEDERE<sup>30</sup>, M. PAHOR<sup>31</sup>, J. RUIZ<sup>32</sup>,  
A.M. NEGM<sup>33</sup>, J.Y. REGINSTER<sup>34</sup>, D.L. WATERS<sup>35</sup>, B. VELLAS<sup>36</sup>

1. Torrens University Australia, Adelaide, Australia; 2. Baker Heart and Diabetes Institute, Melbourne, Australia; 3. Division of Geriatric Medicine, Saint Louis University School of Medicine, St. Louis, Missouri USA; 4. Servicio de Geriatria, Hospital Universitario Ramón y Cajal (IRYCIS), Madrid, Spain; 5. Department of Physical Therapy, Rehabilitation Medicine, University of Alberta, Edmonton, Alberta, Canada; 6. Servicio de Geriatria, Hospital Universitario de Getafe, Madrid, Spain; 7. Mailman School of Public Health, Columbia University Medical Center, New York, NY, USA; 8. Department of Medicine, The Chinese University of Hong Kong, Hong Kong, China; 9. Group of Investigation on Multimorbidity and Mental Health in Aging (GIMMA), Geriatrics Division, Internal Medicine Department, Faculty of Medicine of Jundiaí, Jundiaí, Brazil; 10. Medical School, University City of São Paulo, São Paulo, Brazil; 11. Perry County Memorial Hospital, Perryville, Missouri, USA; 12. Fondazione Policlinico A. Gemelli, Roma, Italy; 13. Population Health Sciences, King's College, London, United Kingdom; 14. Center for Geriatric Medicine, Heidelberg University Agaplesion Bethanien Krankenhaus, Heidelberg, Germany; 15. Intramural Research Program of the National Institute on Aging, USA; 16. Division of Geriatric Medicine, Department of Medicine, National University Hospital, National University Health System, Singapore; 17. Department of Geriatrics and National Clinical Research Center for Geriatrics, West China Hospital of Sichuan University, Chengdu, China; 18. National Center for Geriatrics and Gerontology, Obu, Japan; 19. Department of Epidemiology and Biostatistics, Amsterdam Public Health Research Institute, Amsterdam UMC – location VU University Medical Center, Amsterdam, the Netherlands; 20. Elderly Frailty Research Center, Department of Family Medicine, College of Medicine, Kyung Hee University, Seoul, Korea; 21. Azienda Sanitaria Locale (ASL) di Prosinone, Alzheimer's Disease Clinic Department, Prosinone, Italy; 22. Clinical Nutrition and Metabolism, Department of Public Health and Caring Sciences, Uppsala University and Theme Aging, Karolinska University Hospital, Stockholm, Sweden; 23. Center for Life Course Health Research, University of Oulu, Oulu, Finland; 24. University of Helsinki and Helsinki University Hospital, Helsinki, Finland; 25. National Institute of Geriatrics, Mexico City, Mexico; 26. Western Australian Centre for Health and Ageing, Medical School, University of Western Australia, Perth, Australia; 27. Research Program in Mean's Health: Aging and Metabolism, Boston Claude D. Pepper Older American Independence Center, Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts, USA; 28. Dept des Sciences de l'activité physique, Université du Québec à Montréal, CRIUGM, Montréal, Québec, Canada; 29. Dept of Geriatrics and Aging Research, University Hospital and University of Zurich, Zurich Switzerland; 30. Dept of Epidemiology and Public Health, Division of Gerontology, University of Maryland School of Medicine, Baltimore, Maryland, USA; 31. Dept of Critical Care Medicine, Queen's University, Kingston, Ontario, Canada; 32. Dept of Aging and Geriatric Research, University of Florida, Gainesville, Florida, USA; 33. Miami VA Healthcare System CRECC and Division of Geriatrics & Palliative Medicine, University of Miami Miller School of Medicine, Miami, Florida, USA; 34. School of Rehabilitation Sciences, Faculty of Health Sciences, McMaster University, Hamilton Ontario, Canada; 35. WHO Collaborating Center for Public Health Aspects of Musculoskeletal Health and Aging, Liège, Belgium and Chair for Biomarkers of Chronic Diseases, Department of Biochemistry, College of Science, King Saud University, Riyadh, Kingdom of Saudi Arabia; 36. Dept of Medicine/School of Physiotherapy, University of Otago, Dunedin, New Zealand; 37. Geronotopôle UMR Inserm 1027, Université Paul Sabatier, CHU Toulouse, Toulouse, France. Corresponding author: E. Dent, Torrens University Australia, Adelaide, Australia, [elsa.dent@adelaide.edu.au](mailto:elsa.dent@adelaide.edu.au)

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Dent, E., Morley, J.E., Cruz-Jentoft, A.J. et al. *J Nutr Health Aging* (2019).

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## What's the overlap between malnutrition and frailty?

- **Weight loss/decrease body mass, functional capacity (Fried et. 2001)**
- **Sociodemographic, physical and cognitive factors ( Boulos et al. 2016)**
- **Prevalence in community - related but not interchangeable syndromes**

***Verlaan et al 2017 – systematic review/meta-analysis***

**2 out of 3 malnourished adult adults physically frail**

**10% of frail older adults identified as malnourished**

***Bollwein et al 2013***

**~ 98% non-frail = well nourished**

**~ 50% frail = malnourished**

C. Boulos et al. / *Clinical Nutrition* 35 (2016) 138–143

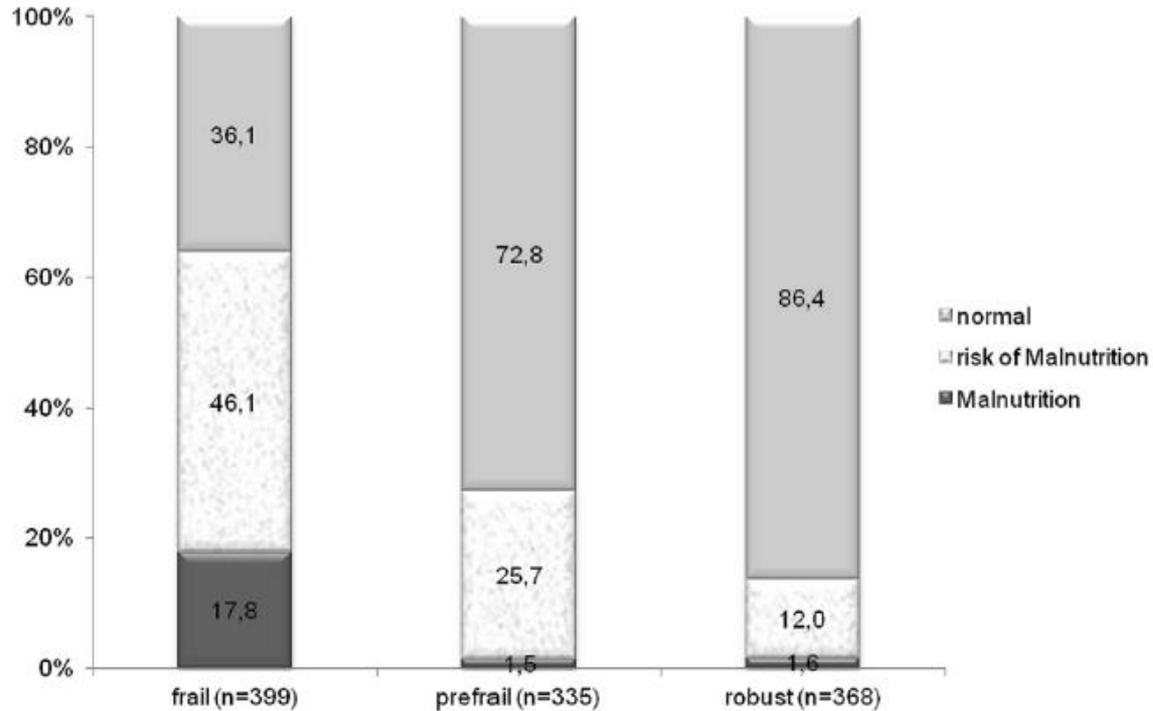


Fig. 1. Distribution of the participants (N = 1102) according to their nutritional status in the three frailty groups. The AMEL study, Lebanon, 2011–2012.

**Malnutrition/risk of malnutrition = 4x increased in risk of frailty**

## Overlap in screening/assessment tools?

**Table 1.** Key frailty and malnutrition assessment tools and their overlapping characteristics.

Identifying frailty	Identifying malnutrition	Overlapping characteristics
<i>FRAIL</i> : Fatigue, Resistance, Aerobic, Illness, <b>Loss of body weight</b> (Abellan Van Kan et al. 2008).	<i>ESPEN</i> : BMI, <b>weight loss</b> , FFMI (Cederholm et al. 2015).	<ul style="list-style-type: none"> <li>• Weight loss/decreased body mass</li> <li>• Functional capacity</li> <li>• Weakness (grip strength)</li> <li>• Cognitive status</li> </ul>
<i>Cardiovascular Health Study Frailty Screening Measure</i> : <b>Weight loss</b> , exhaustion, low activity, gait speed, <b>grip strength</b> (Fried et al. 2001).	<i>AND/A.S.P.E.N.</i> : Insufficient energy intake, <b>weight loss</b> , loss of muscle mass, loss of subcutaneous fat/fluid accumulation, diminished <b>functional status</b> (need 2 of 6) (White et al. 2012).	
<i>Clinical Frailty Scale</i> : Activity, fatigue, illness, <b>functional status</b> , <b>cognitive status</b> (Rockwood et al. 2005).	<i>CMTF</i> : SGA – dietary intake, <b>weight</b> , symptoms, <b>functional capacity</b> , and metabolic requirements; physical exam for fat, muscle, edema (Detsky et al. 1987).	
<i>Gérontopôle Frailty Screening Tool</i> : <b>Functional status</b> , living situation, gait speed, fatigue, cognitive status (Subra et al. 2012).	<i>MNA</i> : anorexia, <b>weight loss</b> , impaired mobility, disease, <b>cognitive status</b> , BMI, living status, drug intake, meal intake, protein intake, fluid intake, fruit intake, eating dependency, perceived nutritional health status, perceived health status, arm circumference (Vellas et al. 1999).	

Note: Similar characteristics are bolded. AND, Academy of Nutrition and Dietetics; A.S.P.E.N., American Society of Parenteral and Enteral Nutrition; BMI, body mass index; CMTF, Canadian Malnutrition Task Force; ESPEN, European Society of Parenteral and Enteral Nutrition; FFMI, fat free mass index; MNA, Mini Nutritional Assessment; SGA, Subjective Global Assessment.

RESEARCH ARTICLE

Open Access

## Prevalence and overlap of sarcopenia, frailty, cachexia and malnutrition in older medical inpatients



Anne Gingrich<sup>1†</sup>, Dorothee Volkert<sup>1†</sup>, Eva Kiesswetter<sup>1</sup>, Marta Thomaneck<sup>2</sup>, Svenja Bach<sup>2</sup>, Cornel C. Sieber<sup>1,3</sup> and Yurdagül Zopf<sup>2</sup>

Of 100 older medical inpatients, almost two-thirds had at least one of the tissue loss syndromes sarcopenia, frailty, cachexia and malnutrition

## Overlap in screening/assessment tools?

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**No tool considers both conditions**

# Is there a common basis to treating malnutrition and frailty?

## Malnutrition

(according to NICE - local pathways/managing malnutrition in community guidelines)

- Food First/food fortification
- Second line – ONS prescribing
- ESPEN consensus for people aged >65 years (*Cederholm et al. 2015*)  
30 kcal/kg body weight/day ( adjusted for gender, disease, activity, nutritional status)  
Protein at least 1.0 g/kg/d, increasing to 1.2-1.5 g/kg/d (illness, wound healing, recovery)

Micronutrients important

Vitamin D supplement (10ug/d) (DoH 2016)

# Summary

- **Malnutrition and frailty are related syndromes. Whilst many frailty measures include weight loss, malnutrition is also the cause of other components.**
- **More research needed to understand their overlap for prevalence, diagnosis and treatment in diverse populations**
- **Consensus needed for definitions and diagnosis, set of indicators and validated tools that capture both conditions**
- **Develop ( complex) interventions that address both malnutrition and frailty for hospital and community sectors.**

***Should frailty be used as a trigger for identifying malnutrition/nutrition screening in the community?***





**Thank you for listening**

**Any Questions?**

[jmurphy@bournemouth.ac.uk](mailto:jmurphy@bournemouth.ac.uk)



[\*\*@JaneLMurphy\*\*](https://twitter.com/JaneLMurphy)