Nutritional Screening in Older Adults

First Results from WP2 of the MaNuEL project
CONFLICT OF INTEREST DISCLOSURE

I have no potential conflict of interest to report
What is Malnutrition Screening?
Examples of Screening Programmes

Cervical Cancer
- Pap smear test
- HPV test
- Visual inspection

Breast Cancer
- Mammogram test
- Clinical exam

Prostate Cancer
- DRE test
- PSA test

Quick
Simple
Valid
**Principles of Effective Screening Programmes**

**The Condition**
- Should be a public health problem
- Incidence, prevalence and natural history known

**The Screening Programme**
- Simple and safe
- Precise, valid and reliable
- Cost-effective
- Cut-off levels defined and agreed
- Acceptable to the target population
- Agreement on further diagnostic investigation
- Strong evidence base
- Chosen based on setting, local resources and practicability
- Certain parameters should have adaptations for the elderly population e.g. BMI
- Can be conducted by a multi-disciplinary team

**Intervention**
- An appropriate follow-on plan should be agreed
- Follow-on plan should be acceptable and effective

Wilson and Jungner 1968
Malnutrition Screening is...

..a quick and easy procedure using a validated nutritional screening tool (NST), designed to identify those who are at risk of malnutrition and may benefit from nutritional intervention by a nutritionally trained professional

(ESPEN 2002)
Malnutrition Screening

- Questionnaires
- Biochemical measures

- Anthropometrics
- Subjective measurements (physical function/social/cognitive function)

Quick Simple Valid
Why are we concerned about nutritional screening?

$\frac{1}{2}$ hospital wards screen for malnutrition risk

21% screened with validated NST
Eglseer D. et al. (2017) Nutrition

Barriers
Organisational culture
Competing priorities
The value of clinical judgement
Training and Education
Discrepancy between attitudes and practice
Green et al. (2013) Journal of Human Nutrition and Dietetics

30% increase in identification of malnutrition
- Improves malnourished patients nutritional status
- Reduced length of hospital stay

€2 per patient on admission
Why should we treat nutritional screening differently in older adults?

Nutritional concerns in adults:
- Reduced Dietary Intake
- Disease-Related Malnutrition
- Protein-Energy Malnutrition
- Malnutrition Risk

Nutritional concerns in older adults: Many are inevitable
- ↓ Bone Mineral Density
- ↓ Immune Function
- ↑ Oxidative Stress
- ↓ Muscle Mass
- ↓ Vitamin Absorption
- ↓ Gastric Mobility
- Physiological Concerns
- Malnutrition Risk
Why should we treat nutritional screening differently in older adults?

Many other determinants of malnutrition risk in older adults

Not enough to assess anthropometrics alone in this group

BMI 18.5 kg/m² - consistently found to be an unreliable in older populations
Nutritional screening tools validated in older adults

<table>
<thead>
<tr>
<th>Nutritional</th>
<th>tools validated in older adults</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mini Nutritional Assessment (Short Form)</td>
<td>Malnutrition Universal Screening Tool (MUST)</td>
</tr>
</tbody>
</table>

Both recommended by ESPEN ✅
MaNuEL Work Package 2

“Malnutrition screening in older adults”

Work Package Aim:
To create an overview of existing tools for malnutrition for older adults

Work Package Objectives:
- Literature review on tools validated in older adults
- Creation of a database of tools used in older adults
- Creation of a scoring system to rate tools
- Devise recommendations on the best screening tools for use with older adults
Tools validated in older adults (no. studies)
34 (n=97)

Community
19 (n=32)
- African NST (n=1)
- Ayshire NST (n=1)
- CNAQ (n=1)
- DETERMINE (n=5)
- ENS (n=1)
- GNRI (n=1)
- MI (n=1)
- MNA-SF-V1 (n=5)
- MNA-SF-V2 (n=3)
- MNA-self (n=1)
- MRST-C (n=1)
- MRST-H (n=1)
- MUST (n=2)
- NRAT (n=1)
- NUFFE (n=2)
- SCREEN (n=1)
- SCREEN II (n=2)
- SNAQ NL (n=1)
- SNAQ 65+ (n=1)

Rehabilitation
5 (n=6)
- CNAQ (n=1)
- MNA-SF-V2 (n=1)
- MST (n=1)
- NUFFE (n=2)
- SNAQ US (n=1)

Institutions
11 (n=17)
- African NST (n=1)
- CNAQ (n=1)
- Chinese CNS (n=2)
- DETERMINE (n=1)
- GNRI (n=1)
- MNA-SF-V1 (n=1)
- MNA-SF-V2 (n=3)
- MST (n=1)
- MUST (n=4)
- RS (n=1)
- SNAQ RC (n=1)

Hospital
22 (n=51)
- Chandra NST (n=1)
- Chinese NST (n=1)
- Canadian NST (n=1)
- CONUT (n=3)
- CNAQ (n=1)
- EVS (n=1)
- GNRI (n=5)
- GMS (n=1)
- Icelandic NST (n=1)
- MEONF II (n=1)
- MNA-SF-V1 (n=8)
- MNA-SF V2 (n=1)
- MRST-H (n=2)
- MST (n=5)
- MUST (n=7)
- NRS-2002 (n=6)
- NUFFE (n=1)
- NNSSA (n=1)
- NURAS (n=1)
- RS (n=1)
- SNAQ US (n=1)
- SNST (n=1)
Scoring System Criteria

1. Validation
- Validated in the elderly: Yes/No
- Type of Validity:
  - Construct
  - Criterion
  - Predictive
- Validated Against:
  - MNA, SGA or clinical assessment
- Validation Results:
  - Se, Sp, k-values etc.
- Amount of validation studies
  - Max. 15 points

2. Parameters
- Some are more suitable for an elderly population/are more practical measures than others
  - Lower Score e.g.:
    - Albumin
    - Calf Circumference
  - Higher Score e.g.:
    - Recent weight loss
    - Reduced appetite
- Adjustments for the Elderly
  - Max. 15 points

3. Practicability
- Time:
  - 0-3 min
  - 4-6 min
  - 7-10 min
- Cost/access:
  - Free
  - Not Free
- Used By:
  - Nutritionally trained staff only
  - All staff
- Languages:
  - English only
  - English plus other EU languages
  - Max. 15 points

3 equally weighted domains: max. 45 points
Mini Nutritional Assessment Short Form (MNA-SF)

Malnutrition Screening Tool (MST)
DETERMINE
Your Health Checklist

The Warning Signs of poor nutritional health are often overlooked. Use this Checklist to find out if you or someone you know is at nutritional risk.

Read the statements below. Circle the number in the “yes” column for those that apply to you or someone you know. For each “yes” answer, score the number in the box. Total your nutritional score.

<table>
<thead>
<tr>
<th>Statement</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have an illness or condition that made me change the kind and/or amount of food I eat.</td>
<td>2</td>
</tr>
<tr>
<td>I eat fewer than 2 meals per day.</td>
<td>3</td>
</tr>
<tr>
<td>I eat few fruits or vegetables or milk products.</td>
<td>2</td>
</tr>
<tr>
<td>I have 3 or more drinks of beer, liquor or wine almost every day.</td>
<td>2</td>
</tr>
<tr>
<td>I have tooth or mouth problems that make it hard for me to eat.</td>
<td>2</td>
</tr>
<tr>
<td>I don’t always have enough money to buy the food I need.</td>
<td>4</td>
</tr>
<tr>
<td>I eat alone most of the time.</td>
<td>1</td>
</tr>
<tr>
<td>I take 3 or more different prescribed or over-the-counter drugs a day.</td>
<td>1</td>
</tr>
<tr>
<td>Without wanting to, I have lost or gained 10 pounds in the last 6 months.</td>
<td>2</td>
</tr>
<tr>
<td>I am not always physically able to shop, cook and/or feed myself.</td>
<td>2</td>
</tr>
</tbody>
</table>

TOTAL
The Nutritional Form For the Elderly (NUFFE) (English version "NUFFE-ENG")

1. Has your weight changed in the past twelve months?
   0  • weight has either gone up or remained unchanged
   1  • weight has dropped somewhat
   2  • weight has dropped considerably

2. Do you eat the same amount of food now as you did a year ago?
   0  • More or the same as previously
   1  • Somewhat less than previously
   2  • Considerably less than previously

3. What is your appetite like now?
   0  • Good
   1  • Somewhat low
   2  • Poor

4. Do you eat at least one cooked meal/day?
   0  • No, always
   1  • Often
   2  • Seldom

5. What sized portions do you normally eat?
   0  • Large or ordinary portions
   1  • Fairly small portions
   2  • Very small portions

6. Do you eat fruit or vegetables on a daily basis?
   0  • No
   1  • Often
   2  • Seldom

7. Do you have the types of food that you need at home?
   0  • Yes
   1  • Often
   2  • Seldom

8. Do you normally eat together with someone else?
   0  • Yes
   1  • Sometimes
   2  • Very seldom

9. Do you get exercise every day?
   0  • I exercise a lot, for example by going for walks
   1  • The only exercise I get is walking
   2  • Mostly I just sit down or lie in bed

10. Is it difficult for you to eat because of mouth or dental problems or due to difficulties in swallowing?
    0  • No
    1  • Sometimes
    2  • Yes

11. How much liquid do you drink in total per day?
    0  • More than 3 glasses/cups per day
    1  • 3-5 glasses/cups per day
    2  • Less than 3 glasses/cups per day

12. Do you have problems eating due to diarrhea, constipation, feeling unwell or nausea?
    0  • No
    1  • Sometimes
    2  • Yes, often

13. Do you need help eating?
    0  • No
    1  • Sometimes
    2  • Yes, often

14. How many different sorts of medicine do you take per day?
    0  • None
    1  • 1-2 different medicines/day
    2  • 3 or more different medicines/day

15. Is it difficult for you to eat as a result of poorer health?
    0  • No
    1  • Sometimes
    2  • Yes, often

Copyright © 1993 Vitalia International
Copyright English version © 2004 Vitalia International & Vita International
Institutions:
Short Nutritional Assessment Questionnaire Residential Care (SNAQ<sub>RC</sub>)
Malnutrition screening…

- is of utmost importance in older adults

- should be considered differently in older people compared to the general adult population

- should be setting specific

- systems should be put in place in all healthcare settings and prioritised
Acknowledgements

Prof Clare Corish
Dr Marian A.E de van der Schueren
Dr Eileen Gibney
Dr Michelle Clarke
Prof Jürgen Bauer
Dr Susanne Leij-Halfwerk
Ms Laura Bardon

The MaNuEL consortium
THANK YOU