

**Canterbury**

District Health Board

Te Poari Hauora o Waitaha



# Nutrition Risk Screening in Community-Living Older People

Sally Watson, Dietitian  
Older Persons Health Specialist Service



Healthy Eating  
Healthy Ageing  
Kai Hauora, Hauora Pakeke

# Topics

- Prevalence malnutrition and nutrition risk in community-living older people
- Christchurch nutrition risk screening study
  - Aims and methods (SCREEN)
  - Results
  - Conclusions and recommendations

## Poor nutrition in older adults: does it matter?

- Impaired immune responses
- Reduced muscle strength and fatigue
- Reduced respiratory muscle function
- Impaired thermoregulation
- Impaired wound healing
- Delayed recovery from illness
- Apathy, depression and self neglect
- Increased risk of admission to hospital and length of stay

**Poor nutrition is much harder and more expensive to treat than to prevent**

Poor nutrition in older people can be reversed!



# Malnutrition and nutritional risk in community-living older people

- Prevalence of malnutrition in older people ranges from 0-8%  
*Guigos Y et al Jnl Nutrition, Health & Aging 2006;10,6:466-487*
- Australian study 2000 – 250 older recipients of domiciliary care services - 5% malnourished and 38% at risk of malnutrition  
*Visvanathan R et al JAGS, 2003,51: 10007-1011*
- CHCH study 1996 - 42% older people admitted with fractured hips were significantly malnourished  
*Hanger HC et al NZ Med J 1999,112:88-90*
- Nutrition risk, which precedes undernutrition, is more common ranging from 25% - 65% depending on the subgroup of older people assessed  
*Keller HH, Hedley MR. J Comm Health. 2002;27:121-132*

# Christchurch study

## **Nutrition risk screening in community-living older people**

- Ethical approval from Upper South B Ethics Committee
- Sally Watson, Katherine Zhang, Professor Tim Wilkinson

# Study aims

- To identify the prevalence of nutrition risk among community-living older people in Christchurch.
- To establish the frequently occurring risk factors that place older people at risk.
- To determine whether targeted nutrition interventions can help improve older peoples food choices and dietary intake.

# Method

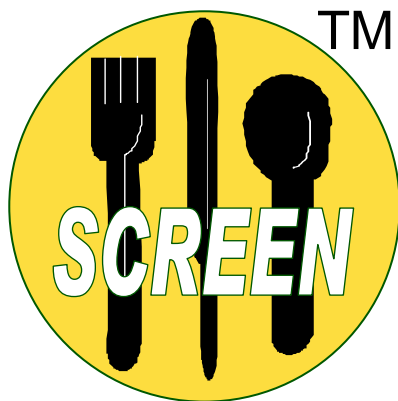
- During the period April to Aug 2007, community-living older people were recruited
- **Inclusion criteria:** 70 years or over, living alone or with 1 other person
- **Exclusion criteria:** dementia, palliative care, receiving dietetic intervention or prescribed dietary supplements



# Method

- Baseline interview in the home:
  - Nutrition risk screening questionnaire
  - Weight and height was measured and BMI calculated
- Those found to be at risk of poor nutrition were referred to nutrition related interventions
- Older people were rescreened in their homes at 4 months and again over the telephone at 8-9 months

# Screening questionnaire



- **Seniors in the**
- **Community:**
- **Risk**
- **Evaluation for**
- **Eating and**
- **Nutrition**

Prof. Heather Keller RD, Phd, University of Guelph, Canada

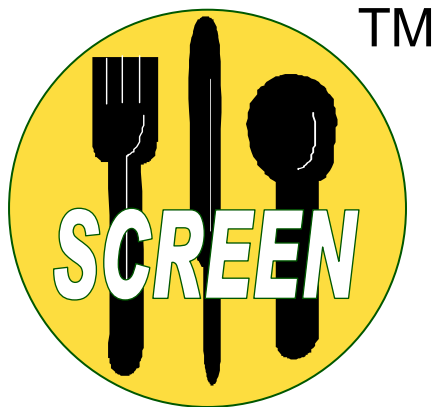
[www.dietitians.ca/seniors/](http://www.dietitians.ca/seniors/)

# SCREEN

The image shows a portion of the SCREEN questionnaire. At the top, it says 'Find out how your eating habits rate.' Below this is a 'Directions' section explaining that the user will be asked 10 questions about their eating habits and that they should select the best response for each question. It also mentions that the user should enter the number for their answer in the box next to the question and that the total score will be calculated at the end. The form includes a section for 'Weight Change' with a vertical scale from 1 to 10 and a section for 'Short' with a vertical scale from 1 to 10. The form is titled 'SCREEN' and has a small logo in the top right corner.

- Reliable, validated nutrition risk screening questionnaire
- Can be self or interviewer administered
- Can be used in a variety of settings
- Predictive validity for mortality and HRQOL
- Not appropriate for older people who are:
  - institutionalized
  - cognitively impaired

# SCREEN



**17 questions** cover issues that influence health of older people:

- appetite
- frequency of eating
- chewing and swallowing
- digestion
- weight changes
- motivation to cook
- ability to shop and to prepare food
- isolation and loneliness
- food restrictions due to health conditions

# SCREEN Scoring Guide

Maximum score = 64\*

---

**“Not at risk”**  $\geq 54$

**“At risk”** 50 - 53

**“At high risk”**  $\leq 49$

The lower the  
total score the  
greater the risk



\*17 questions – 16 questions scored (0 – 4)

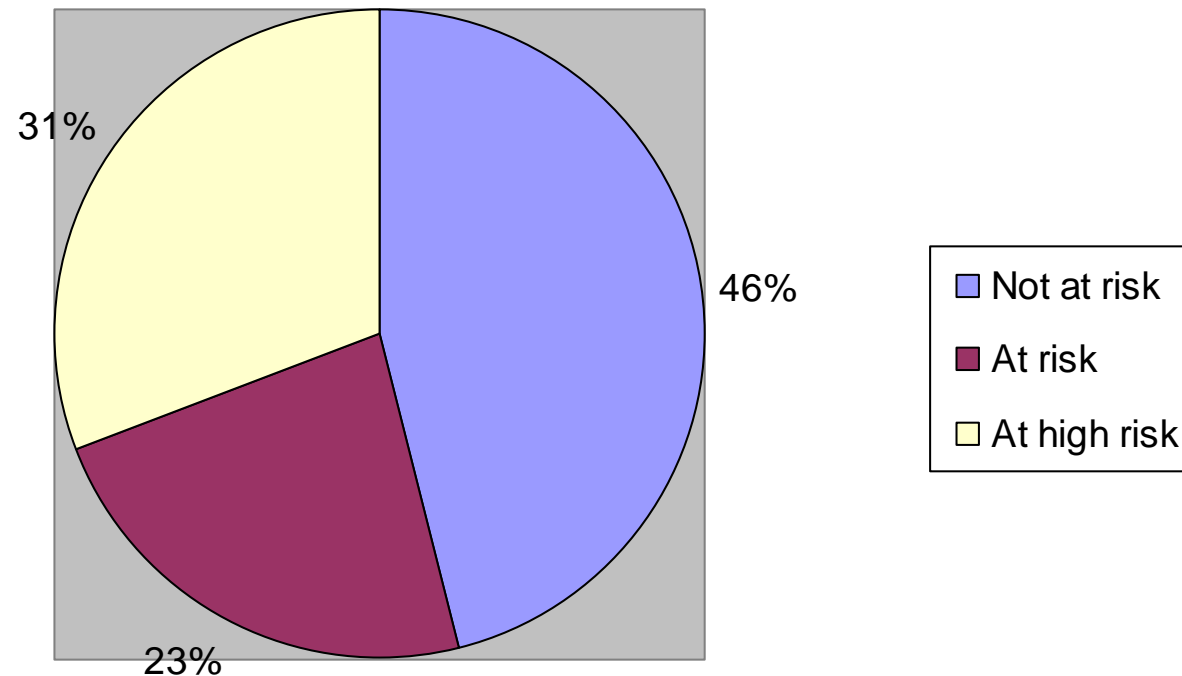
# Results

- Recruited 158 older people → 96% agreed to participate
- 152 participants
  - 63% female
  - 57% live alone
  - 94% NZ European
  - Age range: 70 - 97 years old (mean age: 79.5)
  - Body Mass Index (BMI)
    - Range: 15 - 45
    - Mean: 27.4
    - **70 % > 25 (Overweight or Obese)**
    - **0.7 % < 18.5 (Underweight)**

*BMI = kg /m<sup>2</sup>*



# Nutrition risk status at Interview 1



**Those at risk of poor nutrition were more likely to live alone ( $p < 0.001$ ) and be female ( $p < 0.001$ )**

# Nutrition risk factors for participants “at high risk”

## Most frequently occurring risk factors

- Unintentional weight change (79%)
  - For 60% this was unintentional weight loss
- Eating alone (72%)
- Perception own weight (68%)
- Low milk product intake (66%) \*

\* 37% of participants “not at risk” also had a low milk and milk product intake





# Reported dietary change

**67% of participants who were initially “at risk” or “high risk” reported positive dietary changes at Interview 2**

- Increased weekly milk intake from 1 to 2 Litres
- Eating more cheese, eggs (extra 2 / week) and milk (extra 1-2 cups / day)
- Eating little and often and reduced portion sizes
- Having breakfast more regularly, cut down portion size
- Increased protein foods and using Arginaid powder
- Having 1 Fortisip daily
- Regularly using home delivered meals
- Increased daily fluid intake from 1 cup water to 4 cups



## Dietary advice given in the home was often acted on

| <b>Specific dietary advice given by the project dietitian</b>         | <b>No. participants receiving advice at Interview 1</b> | <b>No. participants following advice at Interview 2</b> |
|---|---|---|
| Increasing milk and milk product intake                               | 23  | 14  |
| Improving appetite, preventing further weight loss and gaining weight | 10  | 4   |
| Increasing fluid intake   | 8   | 6   |
| Increasing protein and/or iron rich foods                             | 6   | 3   |
| Calcium supplements   | 5   | 2   |
| Weight control and preventing further weight gain                     | 3   | 1   |
| Meal preparation and quick easy meals                                 | 3   | 1   |
| Increasing fruit and/or vegetables                                    | 2   | 2   |
| Home delivered meals  | 1   | 0   |

# Participants perception of eating and nutrition

## Participants reporting improved eating and nutrition at Interview 3

- 43% of those initially “at high risk”
- 46% of those initially “at risk”
- 24% of those initially “not at risk”



# Reported reasons for improved eating and nutrition

## 1. **Raised awareness**

“I now pay more attention to what I eat and I’ve started to read food labels.”

## 2. **Increased milk and milk product intake**

“I have changed to yellow-top milk and I’m having more yoghurt and cheese.”

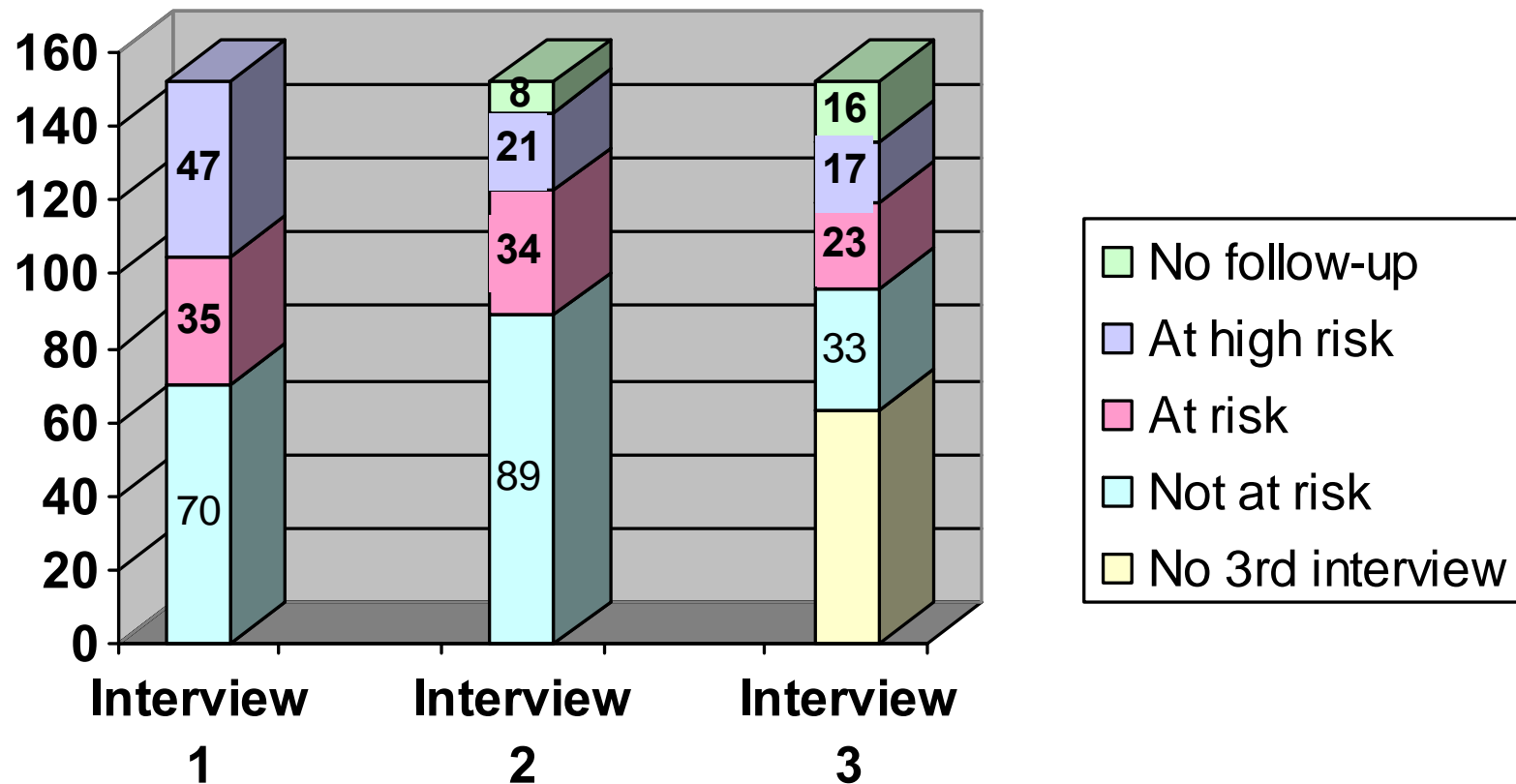
## 3. **Healthy eating changes**

“I’ve lost weight – not by dieting but by eating healthily. I’m really aware of what I’m eating.”

## 4. **Reassured and increased confidence**

“When you first saw me I was losing the plot. Now I feel more confident. Home delivered meals was what I needed – not so much a problem cooking but difficult for me to make decisions as to what to eat.”

## Nutrition risk status for all participants at Interview 1, 2 & 3



# Study limitations and strengths

## **Limitations:**

- Convenience sample not randomised
- Lack of ethnic diversity
- Project dietitian provided intervention and follow-up interview to same participant

## **Strengths:**

- Valid, reliable nutrition risk screening questionnaire designed specifically for community-living older people
- High participation with a low withdrawal rate

# Conclusions

- Nutrition risk was common amongst study population.
- Common risk factors identified:
  - Unintentional weight change
  - Eating alone
  - Perception of own weight
  - Low milk product intake
- Dietary advice provided in the home was often acted on with a high proportion of participants reporting positive dietary changes.
- Low withdrawal rate suggests older people found nutrition risk screening in their own home acceptable.
- Nutrition risk screening raises awareness and has the potential to motivate a change in the eating behaviour of older people.

# Recommendations

1. Implement a nutrition risk screening programme in Christchurch (pilot selected sites – high risk populations).
2. Develop and provide educational programmes that focus on decreasing the nutritional risk of community-living older people.





# Acknowledgements

- Older participants
- Recruitment sites
- Project dietitians
  - Avril Collinson, Katherine Zhang
- Nutrition service providers
- Funding support from MOH
- Discussion and review
  - Prof. Tim Wilkinson, Julian Jensen, Hiedee Hantz and Alison Carpinter