



Implementing malnutrition screening in pulmonary rehabilitation – what is the impact?

*Katie Belobrajdic, Clinical Lead Dietitian
Northern Adelaide Local Health Network
Intermediate Care Services*





Malnutrition in chronic obstructive pulmonary disease (COPD)

- > Malnutrition is a significant issue in COPD
- > Adversely affects lung structure, respiratory muscle strength and endurance
- > Pulmonary Rehabilitation (PR) is one of the key recommended approaches in the treatment of COPD
 - Malnourished patients participating in PR may benefit less and even worsen prognosis



Malnutrition in Pulmonary Rehabilitation

- > Evidence shows a high proportion of participants enter PR programs either already malnourished or at risk
 - 4 in 10 patients enrolled in PR were diagnosed as either moderately or severely malnourished on entry¹
 - Malnutrition risk has been associated with failure to complete PR programs²
 - Insufficient protein intakes were indicated in 50% of patients referred to PR and inadequate energy intakes in 40%³

1. Gunay et al 2013
2. Jones et al 2014
3. Holst et al 2019

Aims of PR

- > Physical training is the core component
 - Improve functional capacity (relieve exercise intolerance)
 - Relieve breathlessness and fatigue
 - Attenuate disease progression
 - Enhance patients sense of control over their condition

- > PR programs are typically 6-8 weeks
 - 1 hour exercise session (2 x/week)
 - 1 hour education session (1 x /week) with a range of Allied Health disciplines





We identified a problem in our PR program

- > Participants did not have access to a Dietitian through the education series
- > Malnutrition screening was not conducted
- > Low referral rates for COPD management to Dietetics
 - PR Physiotherapists aimed to refer clients if losing weight unintentionally, poor oral intake/appetite
- > Without adequate screening and given the evidence...

who are we missing?

Project Aims

- > To implement malnutrition screening within Pulmonary Rehabilitation
- > To increase access of Pulmonary Rehabilitation participants to Dietetic services



Project methods

> PR Physiotherapy and Dietetics worked collaboratively to;

1) Trial malnutrition screening in PR Physiotherapy pre-assessment clinic using the Mini Nutritional Assessment –Short Form (MNA[®]-SF)

2) Include a Dietitian in the group education series

- Implement MNA[®]-SF within group education sessions by Dietitian (as a second screen)
- Capture those who decline in pre-assessment
- Individual tailoring of group education as one size does not fit all

Mini Nutritional Assessment
MNA[®]

Nestlé
NutritionInstitute

Last name: _____ First name: _____
Sex: _____ Age: _____ Weight, kg: _____ Height, cm: _____ Date: _____

Complete the screen by filling in the boxes with the appropriate numbers. Total the numbers for the final screening score.

Screening

A Has food intake declined over the past 3 months due to loss of appetite, digestive problems, chewing or swallowing difficulties?
0 = severe decrease in food intake
1 = moderate decrease in food intake
2 = no decrease in food intake

B Weight loss during the last 3 months
0 = weight loss greater than 3 kg (6.6 lbs)
1 = 1-2 kg (2.2-4.4 lbs)
2 = weight loss between 1 and 2 kg (2.2 and 4.4 lbs)
3 = no weight loss

C Mobility
0 = bed or chair bound
1 = able to get out of bed / chair but does not go out
2 = goes out

D Has suffered psychological stress or acute disease in the past 3 months?
0 = yes
2 = no

E Neuropsychological problems
0 = severe dementia or depression
1 = mild dementia
2 = no psychological problems

F1 Body Mass Index (BMI) (weight in kg) / (height in m)²
0 = BMI less than 16
1 = BMI 16 to less than 21
2 = BMI 21 to less than 23
3 = BMI 23 or greater

IF BMI IS NOT AVAILABLE, REPLACE QUESTION F1 WITH QUESTION F2
DO NOT ANSWER QUESTION F2 IF QUESTION F1 IS ALREADY COMPLETED.

F2 Calf circumference (CC) in cm
0 = CC less than 31
3 = CC 31 or greater

Screening score (max. 14 points)

12-14 points: Normal nutritional status
8-11 points: At risk of malnutrition
0-7 points: Malnourished

References:
1. Vellas B, Wilks S, Abellan G, et al. Overview of the MNA[®]. In: History and Challenges. J Nutr Health Aging. 2008;10:465-466.
2. Jellison J, Miller AJ, Bahr A, Guiguet K, Selby B. Screening for Undernutrition in Geriatric Practice: Overcoming the Short-Known Mini Nutritional Assessment (MNA). J Geriatr. 2005; 50A:1038-1072.
3. Guigoz Y. The Mini Nutritional Assessment (MNA): Review of the Literature. What does it tell us? J Nutr Health Aging. 2006; 10:465-467.
4. Kasperk MS, et al. Comparison of the Mini Nutritional Assessment Short Form (MNA-SF) to a gold standard for identification of nutritional status. J Nutr Health Aging. 2008; 12:10-15.
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For more information, visit www.nestle-nutrition.com



Results

1) Trial of malnutrition screening in PR Physiotherapy pre-assessment clinics

- Well supported, screen time less than 5 mins
- 24 referrals during 2017-18
- Limitation in data collection
- No data on total number screened or number declined referral where indicated

Results

2) A Dietitian was embedded in the education series for 3 of 4 PR groups across NALHN

- > MNA[®]-SF implemented a second time
 - 100% of participants were screened during 2017-18 by Dietitian (n=58)
 - 55% malnourished or at risk of malnutrition
 - 51% of these accepted a Dietitian referral (n=17)

- > Second MNA[®]-SF screen benefits
 - 2 participants not screened + 1 participant who declined at PR pre-assessment who were at risk or malnourished
 - An additional 6 referrals for overweight status

Results

- > In total, malnutrition screening increased Dietitian referrals for PR participants to 47 per year
 - Up from 5 per year in previous 12 months
- > Malnutrition screening is now embedded within
 - All PR Physiotherapy pre-assessment clinics
 - Dietitian led education sessions



SA Health



Future considerations for PR in our service

- > Understand barriers to acceptance of Dietetic referral based on screening results
 - How to “sell it” for all
- > Engagement in the PR education series
 - 50% or less participants stay for PR education
 - Barriers
 - Potential to provide earlier intervention
- > Structure of PR group education series
 - Enable self management and behaviour change



Summary - Project impacts

- > Closer collaborative partnerships between Dietetics and PR Physiotherapy has;
 - Increased access to Dietetic assessment and education within a group setting
 - Earlier identification of patients who are malnourished, at risk of malnutrition or overweight
 - Increase in total referrals for PR participants
 - Earlier intervention for adequate nutrition support and improvement in patient outcomes

Screen and intervene



Acknowledgements

Northern Adelaide Local Health Network Staff

> PR Physiotherapy Team

- Sarah Armstrong
- Ivan Lee
- Lien Nguyen
- Lara Graham
- Anna Brennan

> Dietetics Team

- Janet Nash
- Pamela Zhang
- Mirella Kakogianis



Government of South Australia

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