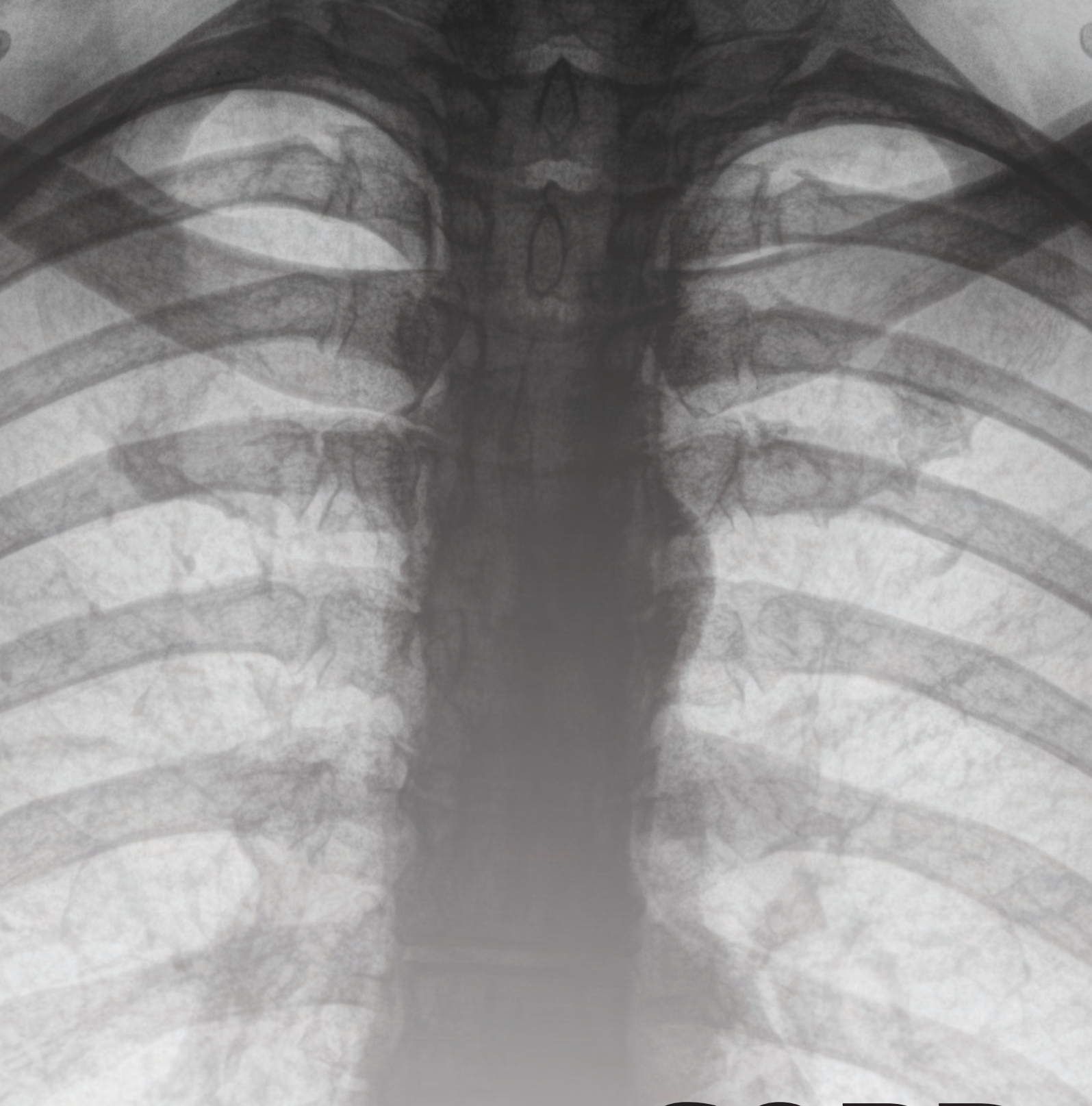

COPD

Integrating Malnutrition Pathways for Key At Risk Groups

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COPD

Integrating Malnutrition Pathways for Key At Risk Groups


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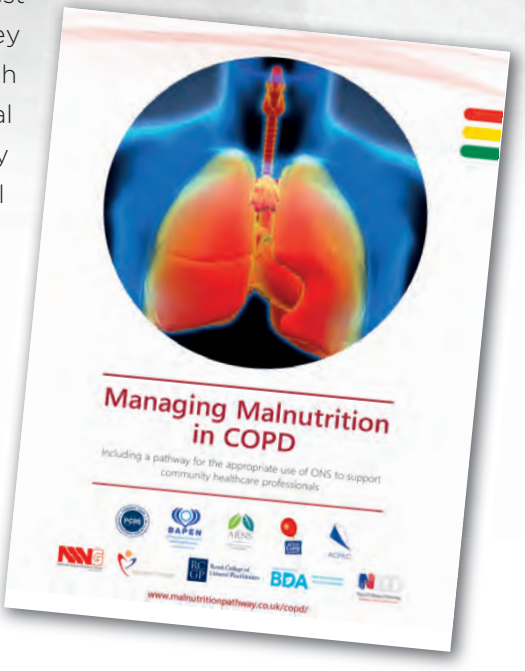
Jo Banner and Michaela Bowden were recently involved in the development of a new practical guide 'Managing Malnutrition in COPD' (**www.malnutritionpathway.co.uk/copd**), which was launched to assist healthcare professionals in identifying and managing people with chronic obstructive pulmonary disease (COPD) who are at risk of disease-related malnutrition. The guide has been developed by a multi-professional panel, with expertise and an interest in malnutrition and COPD, and is endorsed by 10 key professional and patient organisations, including the British Dietetic Association, the British Association for Parenteral and Enteral Nutrition (BAPEN), the Association of Respiratory Nurse Specialists, the British Lung Foundation, the Royal College of Nursing and the Royal College of General Practitioners.[1] Based on clinical experience and evidence, alongside accepted best practice, the guide includes a pathway to support the appropriate use of oral nutritional supplements (ONS) and is complemented by three colour coded patient leaflets which provide practical advice according to risk category.



Here they discuss the importance of integrating nutrition into the care pathway of patients with COPD and the role that the multi-disciplinary team can play in assessing the nutritional status of patients.

The cost of malnutrition in patients with COPD

Recent research has shown that the cost of malnutrition in the UK is even greater than initially thought, and it is now estimated to cost £19.6 billion a year in England alone.[2] This research by Elia, on behalf of the Malnutrition Action Group of BAPEN and NIHR Southampton Biomedical Research Centre, estimates the cost of health and social care for those with or at risk of malnutrition is £7,408,[2] which is over three times as much as for a non-malnourished patient.

With this in mind it is imperative that we begin to incorporate nutrition into the care pathways of specific disease areas, particularly where we know malnutrition is potentially a major issue. One such area is COPD, where 10-45% of outpatients and 30-60% of inpatients are thought to be at risk of malnutrition,[3] which may develop following exacerbations or gradually over several years. Patients with COPD are susceptible to malnutrition because they have increased nutritional requirements due to both a high energy expenditure caused by systematic inflammation, and an increased requirement during breathing. In addition to this, the physical factors of the disease, such as dyspnoea, fatigue, early satiety, and dysphagia, can often lead to a decreased nutritional intake.

However, it is not only these physical factors that affect patients, they can also feel the effects of pharmacological factors (e.g. dry mouth due to antimuscarinic effects of medications, oral thrush and taste changes), psychological factors (e.g. anxiety, apathy, depression), social factors (e.g. social isolation or the death of a partner) and environmental factors (e.g. their living conditions).

All of these factors need to be taken into account when managing patients with COPD and in assessing their malnutrition risk.

Clinical consequences

The implications of ignoring malnutrition in COPD are immense. The consequences of malnutrition in COPD include:[4-11]

- Increased mortality
- Increased healthcare costs
- Longer hospital stays
- More frequent readmissions
- Reduced muscle strength
- Reduced respiratory muscle function
- Decreased quality of life.

The importance of screening

In an ideal world all patients with COPD would be assessed by a dietitian. However, resources are such that easy access to a dietitian is not always possible, so the assessment of a patient's nutritional status is likely to fall to the nursing staff or other members of the multi-disciplinary team working in conjunction, where possible, with dietetic colleagues.

NICE recommends that routine nutritional screening with a validated screening tool (e.g. 'The Malnutrition Universal Screening Tool' ['MUST']) should be performed in all COPD patients across settings, and that management options should include dietary advice, assistance with eating, texture modified diets and ONS where appropriate.[12] Dietary advice should aim to increase intake of all nutrients, including energy, protein and micronutrients, and consideration should be given to the physical, pharmacological, psychological and social factors outlined above when assessing the ability of the patient to follow dietary advice.

There is no reason why a nutritional review cannot form part of a routine review of a patient with COPD and this should not be seen as an extra, isolated aspect of care. The first principle of managing malnutrition has to be assessment. By performing an assessment we can plan, implement and evaluate care. This assessment can take place at first point of contact or at a regular review – NICE recommends that patients with COPD have body mass index (BMI) recorded at their usual review (annually for patients with mild, moderate or severe disease and 6 monthly for very severe disease), at a post exacerbation review, or when completing a referral for pulmonary rehabilitation.[13]

Identification and management

The aim of the recently launched 'Managing Malnutrition in COPD' guidance, which replaces the Respiratory Healthcare Professional's Nutritional Guideline for COPD patients of 2011, is to give healthcare professionals the tools to identify and assess the level of malnutrition risk in patients and to manage them appropriately. The guidelines provide healthcare professionals with an up-to-date consensus of evidence and expert opinion in identifying and managing patients with COPD who are at risk of malnutrition.

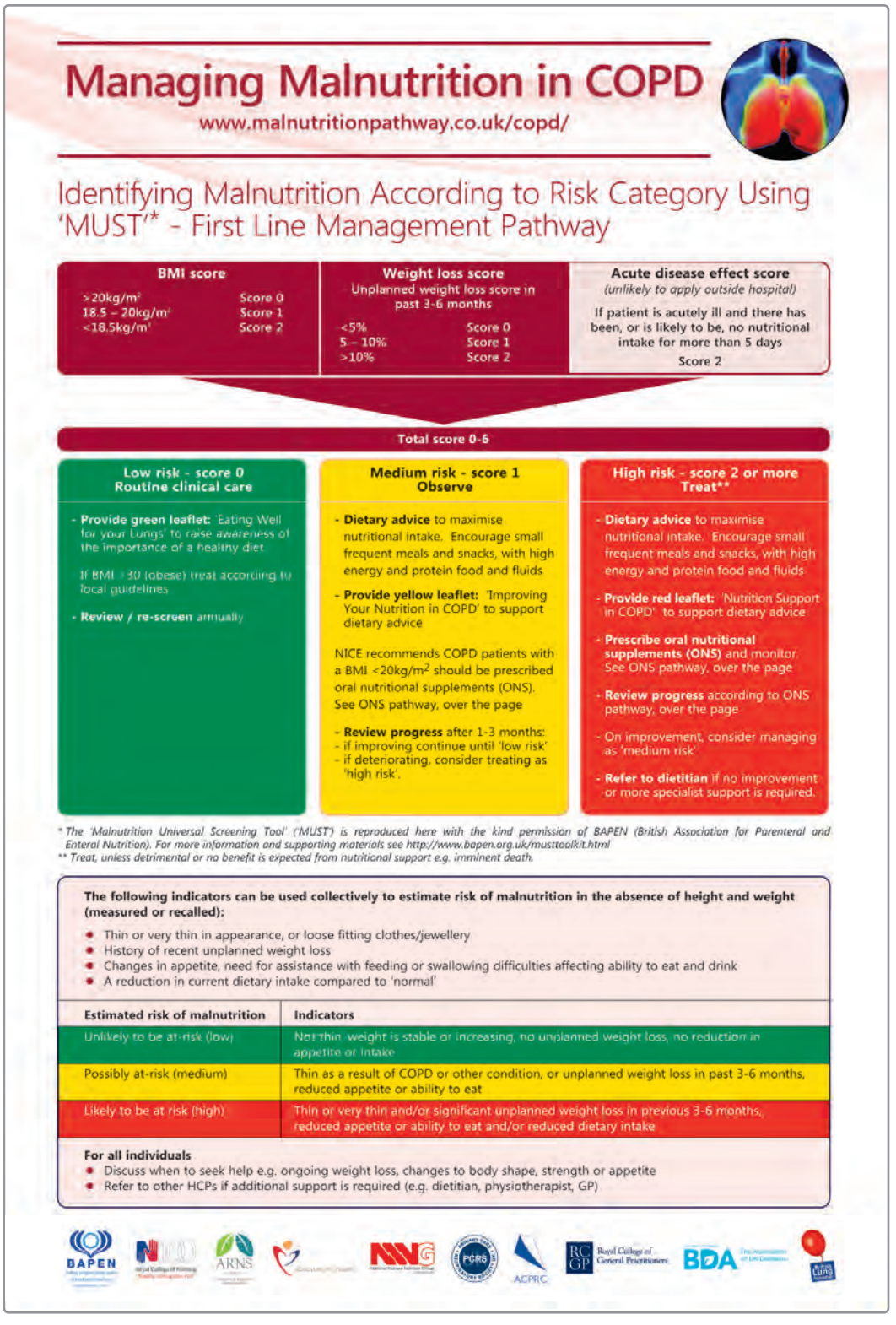
The easy to follow flowchart guides the user through a 5-step approach to assessing and managing those who may be malnourished or at risk of malnutrition.

"Patients with COPD are susceptible to malnutrition because they have increased nutritional requirements due to both a high energy expenditure caused by systematic inflammation, and an increased requirement during breathing."

Steps 1-5 use 'MUST' to make a simple calculation based on BMI, unplanned weight loss and acute disease affecting the patient's ability to eat for five days or more. These formulate a score between 0-6 identifying the level of risk to the patient; patients are assessed as 'low', 'medium' or 'high' risk and advice on nutritional care is given according to the assigned risk category. The greater the risk the greater the level of intervention required and the potential for referring on for more specialist assessment and advice from a dietitian where required.

In addition to the advice provided for each risk category, a pathway for the appropriate use of oral nutritional supplements (ONS) for those with a low BMI (<20kg/m^2), or at high risk of malnutrition, is included. ONS have been shown to significantly improve outcomes including respiratory muscle strength,[14] hand grip strength,[15, 16] exercise performance[16] and quality of life[14, 16] in COPD. This pathway includes guidance on when to both start and stop an ONS prescription and when to seek further dietetic advice if goals have not been met.

Along with the guidance there are colour coded patient leaflets which correlate with the level of risk (green – low risk, yellow – medium risk, red – high risk). This provides patients and carers with practical advice on managing their nutritional status, as well as tips on managing common symptoms that effect nutritional intake such as managing breathlessness.



Managing Malnutrition in COPD

www.malnutritionpathway.co.uk/copd/

Identifying Malnutrition According to Risk Category Using 'MUST'* - First Line Management Pathway

BMI score		Weight loss score Unplanned weight loss score in past 3-6 months		Acute disease effect score *(unlikely to apply outside hospital)*
>20kg/m^2	Score 0	<5%	Score 0	If patient is acutely ill and there has been, or is likely to be, no nutritional intake for more than 5 days
18.5 – 20kg/m^2	Score 1	5 – 10%	Score 1	Score 2
<18.5kg/m^2	Score 2	>10%	Score 2	

Total score 0-6

Low risk - score 0 Routine clinical care	Medium risk - score 1 Observe	High risk - score 2 or more Treat**
- **Provide green leaflet:** 'Eating Well for your Lungs' to raise awareness of the importance of a healthy diet If BMI >30 (obese) treat according to local guidelines - **Review / re-screen** annually	- **Dietary advice** to maximise nutritional intake. Encourage small frequent meals and snacks, with high energy and protein food and fluids - **Provide yellow leaflet:** 'Improving Your Nutrition in COPD' to support dietary advice NICE recommends COPD patients with a BMI <20kg/m^2 should be prescribed oral nutritional supplements (ONS). See ONS pathway, over the page - **Review progress** after 1-3 months: - if improving continue until 'low risk' - if deteriorating, consider treating as 'high risk'.	- **Dietary advice** to maximise nutritional intake. Encourage small frequent meals and snacks, with high energy and protein food and fluids - **Provide red leaflet:** 'Nutrition Support in COPD' to support dietary advice - **Prescribe oral nutritional supplements (ONS)** and monitor. See ONS pathway, over the page - **Review progress** according to ONS pathway, over the page - On improvement, consider managing as 'medium risk' - **Refer to dietitian** if no improvement or more specialist support is required.

** The 'Malnutrition Universal Screening Tool' ('MUST') is reproduced here with the kind permission of BAPEN (British Association for Parenteral and Enteral Nutrition). For more information and supporting materials see http://www.bapen.org.uk/mustoolkit.html*

*** Treat, unless detrimental or no benefit is expected from nutritional support e.g. imminent death.*

The following indicators can be used collectively to estimate risk of malnutrition in the absence of height and weight (measured or recalled):

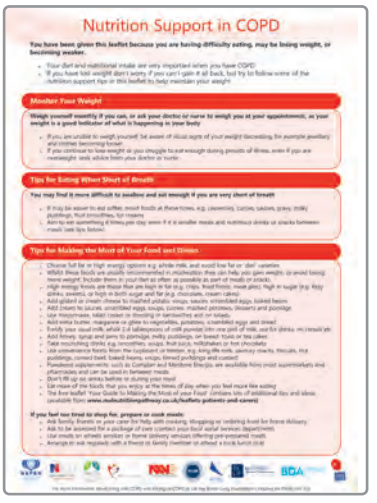
- Thin or very thin in appearance, or loose fitting clothes/jewellery
- History of recent unplanned weight loss
- Changes in appetite, need for assistance with feeding or swallowing difficulties affecting ability to eat and drink
- A reduction in current dietary intake compared to 'normal'

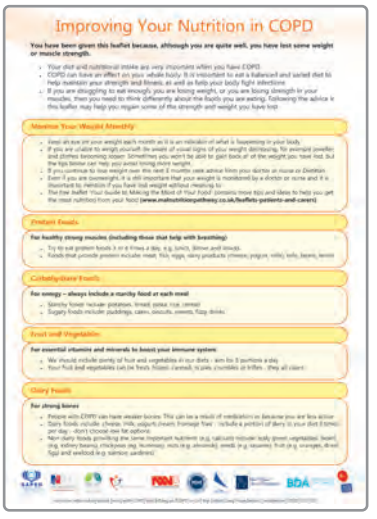
Estimated risk of malnutrition	Indicators
Unlikely to be at-risk (low)	Not thin, weight is stable or increasing, no unplanned weight loss, no reduction in appetite or intake
Possibly at-risk (medium)	Thin as a result of COPD or other condition, or unplanned weight loss in past 3-6 months, reduced appetite or ability to eat
Likely to be at risk (high)	Thin or very thin and/or significant unplanned weight loss in previous 3-6 months, reduced appetite or ability to eat and/or reduced dietary intake

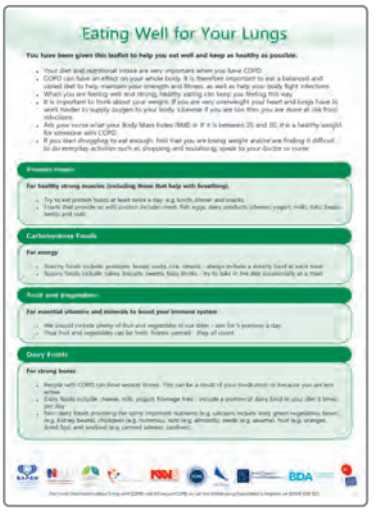
For all individuals

- Discuss when to seek help e.g. ongoing weight loss, changes to body shape, strength or appetite
- Refer to other HCPs if additional support is required (e.g. dietitian, physiotherapist, GP)

BAPEN ARNS ACPRC Royal College of General Practitioners BDA







Goal setting and interventions

'Managing Malnutrition in COPD' also gives advice on goal setting and interventions. Goal setting is a partnership between the patient and healthcare professional where a consensus can be agreed, for example, to prevent further weight loss, maintain a stable weight or increase weight. Amongst malnourished individuals a 2 kg increase is suggested as a threshold at which functional improvements are seen;[15-18] timescales for such a weight increase depend on the individuals condition and circumstances.

The patient's goal may be something as simple as to be able to prepare and enjoy a meal. Goals need to be achieved collaboratively based on malnutrition risk and patient preferences, taking into account the physical, pharmacological, psychological, social and environmental factors already outlined.

Smoking cessation is also an important factor in the management of malnutrition as it may increase appetite and support weight gain.[19, 20] In addition, the patient's sense of smell and taste may be enhanced if smoking is stopped, thus making food more pleasurable.

Pulmonary rehabilitation is a recommended part of management of individuals with COPD and nutrition intervention is likely to support the effectiveness of exercise programmes in malnourished COPD patients,[13, 16, 21-23] as energy requirements may increase with increased physical activity. In those at risk of malnutrition dietary advice and ONS should therefore be considered. Physiotherapists are another important member of the multi-disciplinary team who can advise patients on the benefits of nutrition, and they can refer patients on to a dietitian for further dietary advice as required when they are undertaking a pulmonary rehabilitation programme.

Conclusion

Every member of the multi-disciplinary team plays a key role in the nutritional assessment of patients with COPD. Incorporating nutritional assessment and appropriate nutritional care plans into the care pathway of patients with COPD will have positive effects on their overall care and quality of life. To support this, 'Managing Malnutrition in COPD' can be integrated into existing pathways and will help to ensure that patients are effectively screened, and those who are at high risk are given the appropriate nutritional intervention.

Copies of the 'Managing Malnutrition in COPD' document and supporting patient materials are available free to download via: www.malnutritionpathway.co.uk/copd.

References: **1.** The 'Managing Malnutrition in COPD' document and supporting patient materials (www.malnutritionpathway.co.uk/copd) have been supported by 10 key professional and patient associations: Association of Chartered Physiotherapists in Respiratory Care (ACPRC); Association of Respiratory Nurse Specialists (ARNS); British Association for Parenteral and Enteral Nutrition (BAPEN); British Dietetic Association (BDA); British Lung Foundation (BLF); Education for Health; The National Nurses Nutrition Group (NNNG); Primary Care Respiratory Society (PCRS); Royal College of General Practitioners (RCGP); Royal College of Nursing (RCN). **2.** Elia M, on behalf of the Malnutrition Action Group of BAPEN and NIHR Southampton Biomedical Research Centre (2015). The cost of malnutrition in England and potential cost savings from nutritional interventions. A report on the cost of disease-related malnutrition in England and a budget impact analysis of implementing the NICE clinical guidelines/quality standard on nutritional support in adults. BAPEN. **3.** Stratton RJ, et al. (2003). Disease-related malnutrition: an evidence based approach to treatment. Oxford: Cabi publishing. **4.** Ezzell L, Jensen GL (2000). Malnutrition in chronic obstructive pulmonary disease. Am J Clin Nut.; 72(6): 1415-16. **5.** Collins PF et al. (2011). An economic analysis of the costs associated with weight status in chronic obstructive pulmonary disease (COPD). Proc Nut Soc.; 70(OCE5): E324. **6.** Gupta B, et al. (2010). Nutritional status of chronic obstructive pulmonary disease patients admitted in hospital with acute exacerbation. J Clin Med Res.; 2(2): 68-74. **7.** Collins PF, et al. (2010). 'MUST' predicts 1-year survival in outpatients with chronic obstructive pulmonary disease. Clin Nutr.; 5(2): 17. **8.** Collins PF, et al. (2010). The impact of malnutrition on hospitalisation and mortality in outpatients with chronic obstructive pulmonary disease. Proc Nutr Soc.; 69(OCE2): E148. **9.** Landbo C et al. (1999). Prognostic value of nutritional status in chronic obstructive pulmonary disease. Am J Respir Crit Care Med.; 160(6): 1856-1861. **10.** Vestbo J, et al. (2006). Body mass, fat-free body mass, and prognosis in patients with chronic obstructive pulmonary disease from a random population sample: findings from the Copenhagen City Heart Study. Am J Respir Crit Care Med.; 173(1): 79-83. **11.** Vermeeren MA, et al. (2006). Prevalence of nutritional depletion in a large outpatient population of patients with COPD. Respir Med.; 100(8): 1349-55. **12.** National Institute of Health and Clinical Excellence (NICE) (2006). Nutrition support in adults: oral nutrition support, enteral tube feeding and parenteral nutrition. NICE guidelines [CG32]. **13.** National Institute for Health and Clinical Excellence (NICE) (2010). Chronic obstructive pulmonary disease in over 16s: diagnosis and management. NICE guidelines [CG101]. **14.** Ferreira IM, et al. (2012). Nutritional supplementation for stable chronic obstructive pulmonary disease. Cochrane Database Syst Rev.; 12: CD000998. **15.** Collins PF, et al. (2012). Nutritional support in chronic obstructive pulmonary disease: a systematic review and meta-analysis. Am J Clin Nutr.; 95(6): 1385-95. **16.** Collins PF, et al. (2013). Nutritional support and functional capacity in chronic obstructive pulmonary disease: a systematic review and meta-analysis. Respirology; 18: 616-629. **17.** Stratton RJ, Elia M (2007). A review of reviews: A new look at the evidence for oral nutritional supplements in clinical practice. Clin Nutr.; 2(1): 5-23. **18.** Schols AM, et al. (1998). Weight loss is a reversible factor in the prognosis of chronic obstructive pulmonary disease. Am J Respir Crit Care Med.; 157: 1791-1797. **19.** Gandy J [Ed.] (2014). Manual of Dietetic Practice. 5th Ed. Wiley-Blackwell. **20.** Williamson DF, et al. (1991). Smoking cessation and severity of weight gain in a national cohort. N Engl J Med.; 324: 739-45. **21.** Sugawara K, et al. (2010). Effects of nutritional supplementation combined with low-intensity exercise in malnourished patients with COPD. Resp Med.; 104(12): 1883-9. **22.** Van Wetering CR, et al. (2010). Efficacy and costs of nutritional rehabilitation in muscle-wasted patients with chronic obstructive pulmonary disease in a community-based setting: a prespecified subgroup analysis of the INTERCOM trial. J Am Med Dir Assoc.; 11(3): 179-87. **23.** Schols AM, et al. (2014). Nutritional assessment and therapy in COPD: a European Respiratory Society statement. Eur Respir J.; 44: 1504-1520.

Managing Malnutrition in COPD

This guide supports some of the recommendations on identification and management of malnutrition in the NICE guideline on nutrition support in adults and chronic obstructive pulmonary disease in over 16s. It also supports the statements about identifying and managing malnutrition in the NICE quality standard for nutrition support in adults.

This resource is intended for use with adults and not children. *National Institute for Health and Care Excellence August 2016.*