

Identification of malnutrition in COPD patients: a MUST-do!

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People with chronic obstructive pulmonary disease (COPD) should be reviewed at least annually according to the Quality and Outcomes Framework. The review should include assessment of lung function, inhaler technique, oxygen saturations and the impact of the condition on activities of daily living. However, there is little mention of the importance of assessing nutritional status and no 'QOF' points for doing so.

By the end of this article you should be able to:

- Recognise why people with COPD are at risk of malnutrition
- Instigate screening for malnutrition in people with COPD and stratify their level of risk
- Offer basic nutritional advice to people at risk of malnutrition
- Implement appropriate prescribing guidance on the use of oral nutritional supplements for this patient group
- Carry out appropriate review of patients after interventions have been put into action

There are several groups of people who may be at increased risk of malnutrition, including the elderly and those with a long-term condition. The reasons for poor nutrition are complex and may include lack of knowledge about suitable foods that make up a healthy diet, physical symptoms (e.g. breathlessness) preventing adequate nutrition, an inability to get to shops selling foods of sound nutritional value, poor appetite, low mood and inadequate financial resources. In this article, the focus will be on chronic obstructive pulmonary disease (COPD) where all of these factors may apply. Nurses have a key role to play in the assessment and management of patients with long-term conditions who may be at risk of malnutrition.

THE IMPACT OF COPD

Guidance from the Global Initiative for Obstructive Lung Disease (GOLD) group states that COPD is a chronic condition which leads to symptoms such as cough, sputum production and breathlessness. The most common cause in the western world is cigarette smoking. If the history and symptoms are suggestive of COPD the diagnosis can be confirmed using spirometry, which will show evidence of obstructive lung disease which is largely irreversible (*GOLD 2017*). The aim of treatment is to relieve symptoms and reduce the risk of deterioration and exacerbation.

Symptoms such as breathlessness can have a significant impact on people, both physiologically and psychologically. It is



understandable that people who feel breathless on exertion might start to reduce their levels of physical activity in order to avoid those unpleasant sensations. Family members may start to take on a carer role including shopping for and preparing food for the individual with COPD. Ready meals may be purchased to make food preparation easier for everyone. However, this well-meaning approach may have negative repercussions. For example, avoiding physical activity leads to deconditioning which is eventually going to increase rather than reduce symptoms (*GOLD 2017*). Ready meals and snacks may be of limited nutritional value and in some patients can lead to a double burden of obesity with malnutrition (*WHO 2017*).

For many people with COPD, however, the sheer effort of breathing makes food intake difficult as breathlessness means that frequent pauses are required during meals, food becomes cold and unpalatable and the pleasure that most of us associate with mealtimes dwindles. Social occasions may become a source of embarrassment and so may be avoided, leading to increased isolation and a feeling of missing out. It is no wonder that people with COPD are at increased risk of depression (*Yohannes and Alexopoulos 2014*) and of course depression can have its own impact on appetite and nutrition. COPD may also be more prevalent in areas of deprivation (*BLF 2017*) where more people smoke and choices may be made between continuing to smoke and eating nutritious food which may be (or perceived to be) more expensive. For all of these reasons, weight loss may result, and weight loss is a poor prognostic indicator which increases mortality risk (*Celli et al 2004*).

SCREENING FOR MALNUTRITION

The Malnutrition Universal Screening Tool (MUST) can be used to identify those with, or at risk of malnutrition. The tool, which was developed by the British Association for Parenteral and Enteral Nutrition (BAPEN), can be found at www.bapen.org.uk/pdfs/must/must-full.pdf. It is suitable for use in primary or secondary care and includes a management plan which can be implemented where appropriate.

MANAGING HIGH-RISK INDIVIDUALS

Frank's high-risk status means that he needs intervention. According to MUST, this intervention should include dietitian referral (or other appropriate intervention based on local guidance) with goal-setting to improve and increase Frank's

overall nutritional intake. Ongoing monitoring and care planning with review should also be carried out, and as Frank is being cared for in the community, this should be at least monthly.

Frank had a review of his current COPD treatment and a chest x-ray to exclude the possibility of lung cancer in view of his weight loss. Blood tests also excluded any thyroid disease or other cause for his worsening symptoms but he was noted to have iron deficiency anaemia, thought to be due to his poor nutritional status. If Frank had been identified as being at risk of imminent death then aggressive management of his malnutrition might have been considered inappropriate. However, in Frank's case his tests revealed nothing sinister and it was thought that the main reason for his malnutrition was his inability to eat because of his COPD symptoms along with some psychosocial issues which made it harder for him to improve his nutritional status – specifically not being able to shop for himself and mild depression, identified through the PHQ9 assessment tool.

As a result of the MUST assessment, Frank could be offered referral to a dietitian. However, Frank was not keen on this. He said, "I know what to eat, I just can't get it down me!". The COPD malnutrition pathway recognises that not all patients will need or want a dietitian assessment and that an alternative approach can be taken.

THE COPD MALNUTRITION PATHWAY

Patients such as Frank can be managed very effectively by using the COPD malnutrition pathway. This can be accessed at www.malnutritionpathway.co.uk/copd/ and offers a more pragmatic approach to supporting these patients. For someone with a MUST score over 2, this guideline recommends that they

CASE STUDY: FRANK

Frank is 80 years old. He has a history of COPD and coronary heart disease (stable angina). He suffers from breathlessness, with a modified MRC score of 3 (equivalent to a standard MRC score of 4) (GOLD 2017). He lives alone, having been widowed 3 years ago. His son shops for him and bases Frank's diet on ready meals which are easy for Frank to prepare. Frank finds that his breathlessness makes it hard for him to eat normal-sized meals and that chewing food has become more and more uncomfortable as he has to keep stopping. He also finds that his chronic phlegm production makes the food unpalatable. His daughter, who lives 250 miles away, recently came to visit. Having not seen Frank for several months, she is worried about how frail he is starting to look. She brings Frank in for a COPD review at the surgery. Frank's measurements are taken as part of his review. His height is 175 cm and his weight is 55 kg giving him a BMI of 17.9. His daughter is concerned to hear this as the last time he was weighed 6 months ago he was 60 kg. Using the MUST score calculator, Frank scores 2 points for his BMI, 1 for his recent weight loss of 5-10% and 0 for the presence of acute illness. Frank's total score is 3, meaning that he is nutritionally high risk.



are given dietary advice (rather than dietitian referral) to maximise nutritional intake. This advice will include:

- Recommending small frequent high-energy and protein meals, snacks and drinks
- Increasing the consumption of foods such as cheese, cream and full-fat milk by adding them to meals to increase energy and protein content without increasing the volume of food consumed
- Opting for moist foods which are consumed more easily – jelly, ice cream, soups

Basic dietary advice is available in a range of leaflets which correspond to the level of the patient's nutritional risk. Frank's high-risk (red) status would mean that he should have a red leaflet; medium-risk patients get a yellow leaflet and low-risk patients would be given a green leaflet.

These leaflets can be accessed here:

- http://malnutritionpathway.co.uk/files/uploads/Red_leaflet_final.pdf
- http://malnutritionpathway.co.uk/files/uploads/Yellow_leaflet_final.pdf
- http://malnutritionpathway.co.uk/files/uploads/Green_leaflet_final.pdf

Further advice would include:

- Prescribing oral nutritional supplements (ONS) and monitoring their impact
- Referring to a dietitian if there is no improvement or specialist support is required

Consideration should also be given to other issues which might affect nutrition, such as mood, appetite, dental problems and access to shops and cooking facilities.

PRESCRIBING ORAL NUTRITIONAL SUPPLEMENTS

There is good evidence that ONS prescribed for COPD patients with malnutrition significantly improve exercise tolerance, dyspnoea, general well-being and quality of life (*Collins et al 2011, Ferreira et al 2012*). The COPD malnutrition pathway recommends that patients with a BMI of $<20 \text{ kg/m}^2$ or those at high risk should be prescribed ONS. Frank fits both of these criteria so it was decided that along with general advice on nutrition ONS should be prescribed to be taken up to three times a day. A starter pack was prescribed initially for Frank to try and he was subsequently prescribed a regular supply of his preferred ONS for 12 weeks. Frank's breathlessness was a key feature of his inability to eat enough to maintain his weight and it was decided that a low volume, high energy/high protein ONS, as advised on the COPD malnutrition pathway, would be appropriate for Frank on this basis. In people like Frank, the increase in resting energy expenditure resulting from breathlessness often results in a calorie deficit along with an increase in protein requirements. Thus a high calorie, high protein supplement helps to address these issues, while a low volume option makes it easier to tolerate than higher volumes (200 ml), increasing adherence rates (*Hubbard et al 2012*).



Furthermore, consideration needs to be given to providing ready prepared supplements rather than powdered shakes which need to be mixed with fresh milk. Powdered shakes may not be suitable for some patients that cannot shop for themselves, as they may not be able to obtain enough fresh milk. Also whisking up the shake will require more energy expenditure and potential for breathlessness. In addition, Frank simply may not be motivated enough to prepare his own shakes. He was given an information leaflet on ONS to go through with his son and daughter. This leaflet (http://malnutritionpathway.co.uk/files/uploads/Nutrition_Drinks_2014.pdf) gave him lots of information on how to use, prepare and store his ONS products.

ONGOING HOLISTIC CARE

Frank was reviewed every month to reassess his nutritional status, including his BMI and his iron deficiency anaemia. He also had input from the wider multidisciplinary team and attended a pulmonary rehabilitation programme to optimise his general well-being. Social prescribing in the area allowed him to have visits from a befriender who took him out to the shops and he also joined a lunch club. His COPD status (GOLD category B) and medication were reviewed and he was now being treated with a dual bronchodilator to improve his symptoms of breathlessness (*GOLD 2017*). At the 12-week review Frank's weight was back to 58 kg (BMI 18.9) and his overall well-being had improved significantly. At this point, in line with the COPD malnutrition pathway, Frank was encouraged to continue with his current dietary intake along with 1 ONS per day. Frank was reminded about using his dietary advice leaflet in order to understand and meet his nutritional needs through his diet and the practice agreed to continue monitoring his progress. He was now downgraded to a 'medium-risk' patient. According to the COPD malnutrition pathway, ONS can be discontinued if patients

are no longer at risk of malnutrition, are clinically stable and are able to eat and drink normally. However, as breathlessness was still a problem for Frank and this made consuming larger quantities uncomfortable, he was given the option to continue with his low-volume ONS on a daily basis to ensure his progress was maintained.

CONCLUSION

Patients with COPD may be at increased risk of malnutrition for a variety of reasons but weight loss is a poor prognostic indicator and is associated with an increased risk of mortality. People with COPD should therefore be assessed for malnutrition using the MUST tool as part of their annual review. The COPD malnutrition pathway should then be implemented with patients being given general nutritional advice along with prescribed ONS for those with high risk levels and/or a BMI $\leq 20 \text{ kg/m}^2$. Low-volume, high

energy, high protein supplements may be specifically indicated for people with COPD whose breathlessness or other symptoms make it difficult to consume larger volumes of food or supplements. Once supplements have been initiated, regular reviews should be carried out to assess whether the patient is finding them useful and to decide on the need for dose adjustment and/or continuation of the ONS. Downgrading of risk level may be appropriate for patients where interventions have been successful but ongoing support and assessment should continue to be available and primary care nurses are well placed to offer this. However, if dietary support and ONS have not helped then the patient should be referred to a dietitian.

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Further resources

- Education for Health for information on courses on respiratory disease, cardiovascular disease and diabetes at diploma, degree and masters level: www.educationforhealth.org
- Malnutrition care pathway, patient information and surgery posters can all be accessed at: <http://malnutritionpathway.co.uk/nurses>
- Nutricia – for information on oral nutritional supplements: <https://www.nutricia.co.uk/fortisip/>

