The Malnutrition Pathway
CASE STUDY SERIES:
MALNUTRITION IN COPD

This case study illustrates how the **Managing Malnutrition in COPD** pathway guides assessment, intervention, and monitoring for patients at risk of malnutrition.

Michael, 72, male - presents to GP for annual COPD review with reduced food intake

Social History:

- Lives with wife, has three children
- Retired builder
- Enjoys a daily walk, used to walk for 30 minutes, now struggling to complete 10-15 minutes of walking
- Remembers his parents slimming down as they aged – he thought this was natural

Medical History:

- 2-year history of Chronic Obstructive Pulmonary Disease (COPD);
  - FEV_1 74% predicted 1 year ago
  - FEV_1 65% predicted today (9% decrease)
  - Starting to notice moderate breathlessness during meals in addition to early satiety
  - Two self-treated exacerbations but no hospital admissions in the past 12 months
  - Ex-smoker with a 40 pack-year history
- Other diagnoses include:
  - Hypertension
  - Osteoarthritis
  - Prediabetes

Medications:

- Salbutamol

Nutritional Status:

- Height: 5'7" (1.7 m)
- Weight 1 year ago: 64kg
- Weight today: 57.5kg (19.9kg/m^2, representing a 10.2% weight loss)
- Noticing he struggles to eat the same amount of food he used to, particularly over the last 3 months
- He feels his weight loss likely occurred within the last 3-6 months

Due to clinical concern regarding Michael's weight loss and reduced appetite, the Managing Malnutrition in COPD pathway is initiated

STEP 1: Nutritional screening

Malnutrition Universal Screening Tool (MUST):

- BMI 18.5-19.9kg/m^2 – Score 1
- Unplanned weight loss >10% - Score 2
- Acute disease effect – Score 0 (rarely applies outside of hospital)
- Total 'MUST' score 3 (high risk of malnutrition)

STEP 2: Identify causes of malnutrition

- Breathlessness during meals and early satiety due to progression of COPD
- Possible COPD-related hypermetabolism
- Michael's underlying belief that weight loss in advanced age is normal (which prevented him seeking help sooner)

STEP 3: Identify treatment goals and optimise nutritional intake

Treatment Goals

- Optimise nutritional status and promote weight gain
- Improve/restore physical function

Reduce the risk of COPD exacerbations or respiratory infections

Optimising Nutritional Intake

1. The importance of a high calorie, high protein diet was explained
2. Soft moist diet e.g. casseroles, to help ease eating and minimise breathlessness during meals
3. 'Little and often' approach to eating was encouraged to help manage early satiety, encouraging use of nutrient rich snacks and nourishing drinks between meals (ideas provided).
4. Supporting resources provided (i.e. Improving Your Nutrition in COPD leaflet)
5. Samples of high protein, low-volume oral nutritional supplement (ONS) drinks were ordered to Michael's address and he was asked to take them twice a day, providing an additional 600kcal, 24g protein to the diet*.
    a. Michael was advised to take ONS in-between meals as small regular doses and signposted to the Nutrition support in COPD leaflet
    b. He fed back regarding his preferred flavours - a repeat prescription for his preferred product was initiated.
6. COPD management was optimised (Glycopyrronium added) and Michael was advised to attend pulmonary rehab, to help minimise progression of COPD and to help minimise symptoms which limit food intake.
7. Referral was made to the Community Dietitians (who have an 8-12 week lead time) due to Michael's high 'MUST' score

*Michael's 'MUST' score of 3 indicates he is at high risk of malnutrition and due to the disease effects and limited appetite ONS have been prescribed to reverse the malnutrition. Note that in COPD, NICE suggest that a BMI of <20kg/m^2 in isolation (which can represent a 'MUST' of only 1 if is it not accompanied by significant weight loss) is sufficient to justify prescription of ONS in COPD.

STEP 4: Monitoring

4-week follow-up to re-assess nutritional status

- Michael added small high-calorie snacks (e.g. full fat yoghurt, cereal bars) in-between meals in addition to taking his prescribed ONS twice daily "80% of the time", occasionally forgetting his evening dose
    - Michael's wife was present for this appointment; now that she understands the rationale for the prescribed ONS, she reminds Michael to take his evening dose. Michael also set a reminder on his phone
- 1kg weight gain observed (58.5kg, BMI increase to 20.2kg/m^2)
- Managing 15-minute walks comfortably
- The original nutritional management plan was to be continued until review from the Community Dietitians. Michael has an appointment with them in 4 weeks.

6-month COPD follow-up

- Weight: 63.5kg (BMI 22kg/m^2; a 6kg increase)
- ONS: Community Dietitians stopped his ONS 1 week ago, though he remains on a high calorie, high protein diet and has replaced the ONS with homemade high calorie drinks to support weight maintenance
- Michael attended and completed 8 weeks of pulmonary rehabilitation
- Managing 30-minute walks comfortably. Feeling less fatigued and stronger in general. Finds it easier to carry the shopping bags than before**
- No COPD exacerbations or any COPD-related hospital admissions in this timeframe. FEV1 has increased to 69% of predicted

**The improvement in Michael's fitness will translate to improvements in his COPD symptoms (by improving respiratory muscle strength, for example) as well as his nutritional status. Nutritional support has benefited both his nutritional status and his COPD status.