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The Nutritional Management of **Weight Loss in COPD**

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Weight loss is common in people with COPD

In people with chronic obstructive pulmonary disease (COPD), energy requirements have been reported to be 15–20% above normal needs due to the increased energy required for breathing. People with COPD are generally underweight and have reduced muscle mass.[1] One UK based study showed that 23% of subjects with COPD were classified as malnourished. The malnourished subjects had lower lung function measurements, suffered more dietary problems and had lower nutritional intake compared with the adequately nourished subjects.[2]

Careful balancing of caloric intake is required. One study showed that a total caloric intake in excess of 50% above need was associated with poorer outcomes, while caloric intake of 30% above need was beneficial.[3]

Referral to a dietitian is recommended to establish an appropriate diet for a person with COPD who is malnourished.

Key concepts:

- Weight loss is common in people with COPD and nutritional management plays an important role.
- Weight loss is related to decreased exercise capacity, health status and increased morbidity.
- Opportunities for dietary and nutritional interventions in COPD management should be explored, aiming at early detection and early treatment of involuntary weight loss.

Eating small, frequent meals may help to reduce dyspnoea

As COPD progresses, many people find that breathing becomes more difficult if they eat a heavy meal, so in this situation, eating frequent, small and nutritious (high energy, high protein) meals is best (see “High energy, high protein food ideas” on page 14). If people with COPD are not managing to keep their weight above a desired level they may require dietary assistance.[4]

Evidence for nutritional support is limited

Evidence supporting the use of nutritional supplements for people with COPD is limited. A 2005 Cochrane systematic review found no evidence that nutritional supplementation makes a significant difference to weight gain or health outcomes in people with COPD.[5]

Despite this lack of evidence, the UK National Institute for Clinical Excellence guidelines for the management of COPD in adults, suggest that nutritional supplements may be considered for people with a BMI less than 20 kg/m^2

and these patients should also be encouraged to exercise regularly to build muscle mass.[6]

The American Thoracic Society also recommends considering nutritional supplementation for people with COPD who have involuntary weight loss of more than 10% in the last six months or more than 5% in the past month.[7]

Nutritional management of patients with severe COPD is challenging and interventions should be extended to the early detection and further prevention of weight loss before patients become malnourished.

Hypercapnia

A late manifestation of COPD is hypercapnia. It is caused by a reduction in ventilatory drive and is a feature of severe COPD.

In theory, under ideal conditions, dietary fat utilisation produces less CO_2 per O_2 molecule consumed than carbohydrate. However, most studies indicate that consuming excess calories is a more important contributor to increased CO_2 production than the fat composition of the food.[3]

Higher fat supplements have been found to delay gastric emptying. This may be important in determining patient tolerance of these formulas as a delay in gastric emptying can lead to extended periods of abdominal distention.

Pulmocare is a high fat, low carbohydrate formula designed to minimise CO_2 retention in chronic or acute respiratory insufficiency. Pulmocare is the only COPD specific product available in New Zealand.

Subsidy for Pulmocare (which contains 1.5kcal/mL in 237mL cans) is available from a relevant specialist for patients who have COPD and have hypercapnia and need the supplement as part of, or as a complete, diet.

GPs role in the nutritional care of people with COPD

Encourage patients with COPD to make and maintain dietary changes such as eating a high energy, high protein diet or eating small, frequent meals, to minimise involuntary weight loss and nutritional depletion.

Advise people with COPD who become breathless when eating to eat frequent small meals.

Consider oral nutritional supplements for patients with a low BMI, significant involuntary weight loss or those who develop hypercapnia. For more information on oral supplements see page 12.

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