

Nutrition for a patient with COPD can be complicated

Learn how to advise him about the role of good nutrition in managing his disease.

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If your patient has chronic obstructive pulmonary disease (COPD), his nutritional status can influence the severity of his disease. To complicate the picture, circumstances related to COPD can make getting good nutrition difficult. Let's review why a patient with COPD benefits from eating well and how his disease creates barriers that can lead to malnourishment. Then learn how you can help your patient reach and maintain good nutrition despite his disease.

Easing breathing

Chronic bronchitis and emphysema are different forms of COPD, but most adults with COPD have features of both. A characteristic they share is air-flow obstruction that causes shortness of breath and chronic cough. Good nutrition can ease breathing in someone with COPD by keeping his diaphragm and other respiratory muscles strong. It also helps the body fight off infections such as pneumonia and improves pulmonary function. Maintaining a desirable body weight and supporting the immune system are vital nutritional goals for your patient.

Maintaining or achieving a desirable body weight. People with COPD tend to be underweight, and this can pose problems. The work of breathing increases with COPD, along with metabolic rate and energy needs. If the patient doesn't take in enough calories to meet the demand, he loses weight and muscle mass, including respiratory muscle mass. Breathing and eating become harder and he might have to choose between taking a gasp of air or a bite of food. This perpetuates a cycle of weight loss and muscle wasting (hypermetabolism/catabolism).

Recent research has shown promise helping patients gain weight and improve muscle strength using the oral anabolic steroid oxandrolone (Oxandrin). Building muscle mass and replenishing protein stores can increase strength in the lung muscles and diaphragm to help ease breathing.

Excess body weight in someone with COPD



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increases the workload on the heart and lungs. This cardiovascular and respiratory compromise may prevent enough oxygen from reaching all parts of his body. Excess fat in the abdomen also crowds

the diaphragm, preventing full expansion of the lungs. If the patient loses weight and builds more lean body mass through proper diet and exercise, his breathing should be easier and he'll feel healthier and more energetic.

Supporting the immune system. The white blood cells that fight infection are made of proteins, so a diet that's deficient in protein, calories, vitamins, and minerals may prevent the body from building immune factors needed to fight infection and repair damaged tissue. (See *Nutrition: A Sum of Its Parts* for details on the various nutrients.) Protein deficiency is common among people with COPD and puts them at risk for respiratory infection. Infection, in turn, can perpetuate the debilitating cycle by decreasing appetite and increasing caloric needs.

Doing your part

Coordinating with a dietitian, you can help a patient with COPD achieve optimal nutrition. De-

pending on his individual needs and the progression of his disease, use these interventions:

- Provide three small meals and three snacks daily to prevent his stomach from becoming too full.

Nutrition: A sum of its parts

Good nutrition and exercise help a patient with chronic obstructive pulmonary disease (COPD) stay as healthy as possible. His intake of fluids, calories, protein, calcium, and potassium all play a role in protecting immunity and easing breathing.

- **Fluids.** Advise your patient to drink at least 8 cups of caffeine-free liquids daily to keep his body hydrated and thin his respiratory mucus. Adequate hydration also helps prevent drying of mucous membranes if he uses oxygen therapy.

Warn your patient to limit consumption of beverages that contain caffeine or alcohol, which cause water loss and increase the diuretic effect of medications such as theophylline.

- **Adequate calories.** Refer your patient to a dietitian for an accurate assessment of his dietary needs and recommendations. If he's underweight, he may benefit from an appetite stimulant or a dietary supplement specialized for people with COPD. Even if he's trying to lose weight, he needs to consume a certain number of calories each day, and the dietitian can help him with a realistic plan.

- **Protein.** Explain to your patient that his body needs enough protein to repair and build cells. The dietitian can determine how much he needs. Generally, 2 cups of milk plus 6 ounces of protein from other sources each day provide four servings of high-quality protein, which is adequate for someone with COPD. Drinking skim milk instead of whole milk may cause less mucus production. Protein supplements may help him maintain good visceral protein status and immune function.

- **Calcium.** A patient who uses a corticosteroid to manage COPD is at risk for calcium depletion. He needs 1,200 mg of calcium daily to maintain strong bones and help regulate blood pressure.

Dairy products have the highest concentration of absorbable calcium and are good sources of protein. Dark, leafy greens and dried beans have varying amounts of absorbable calcium. Supplements may be useful if the patient can't consume three to five servings of calcium-rich foods per day.

- **Potassium.** Found in fruits, vegetables, dairy products, and meat, potassium is key to blood pressure control, muscle contraction, and nerve impulse transmission. Normal serum potassium levels help with optimal muscle contraction to aid breathing.

Large meals distend the stomach and crowd the diaphragm. Multiple smaller meals will encourage him to eat more if his appetite is poor.

- Offer larger meals early in the day, when the patient is more likely to be mobile and have better digestion.

- Encourage him to remain upright after meals to prevent his stomach from pushing on his diaphragm.

- Teach him to prevent bloating by limiting his intake of carbonated beverages and avoiding gas-forming vegetables, such as raw apples, onions, asparagus, beans, peas, broccoli, cabbage, cauliflower, corn, melons, peppers, radishes, and turnips.

- Keep fruit juice and water readily available

in the refrigerator or at the patient's bedside to encourage him to drink fluids.

- Advise him to rest before meals.

- Provide soft, easy-to-chew foods to prevent him from becoming short of breath while he eats. Specialized liquid supplements are also available.

- Remind him to eat various foods at home to make sure he gets enough vitamins and minerals. Consuming fortified foods such as cereal or mashed potatoes and several snacks throughout the day can help him meet his needs.

Teaching and practicing

Maintaining a healthy weight and getting enough nutrients can help a patient with COPD ease his breathing and protect against infection. By teaching him the importance of good nutrition and helping him achieve it, you help him manage his disease and ward off complications. **11**

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