

Chronic Disease Network and Access Program 2009

Nutritional Management of COPD

Guide for Health Professionals

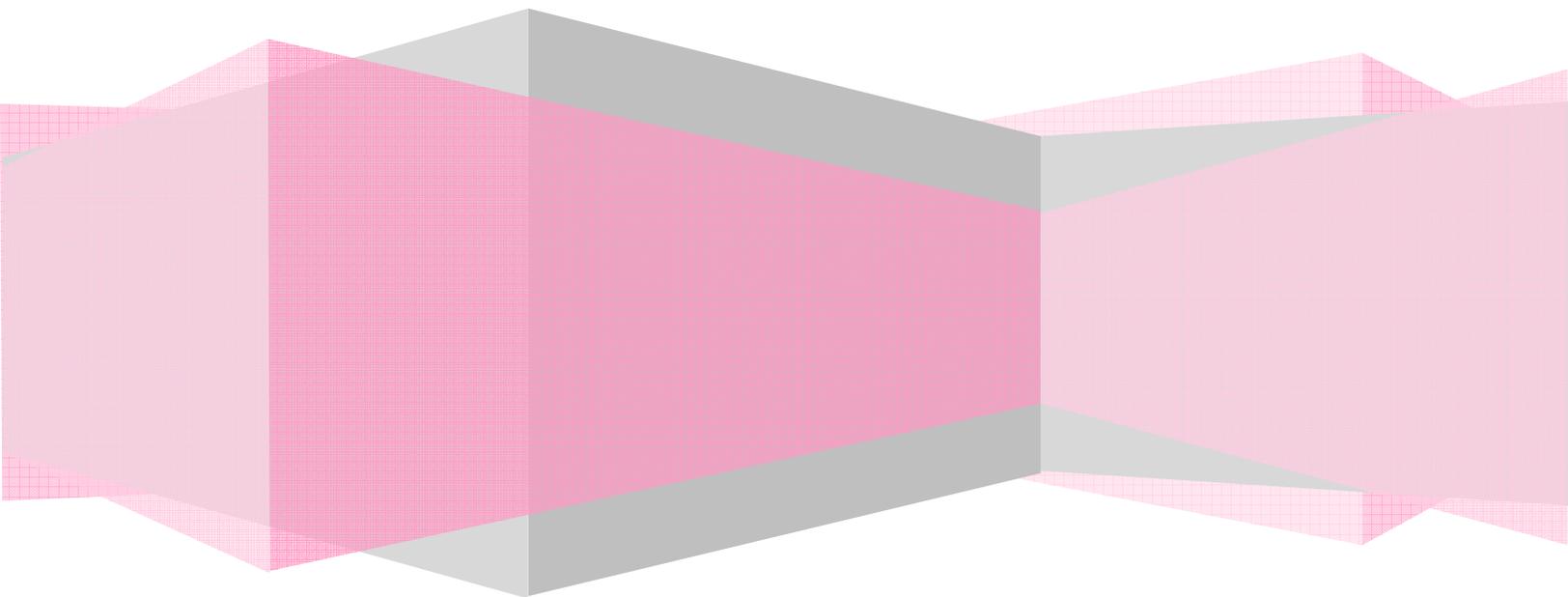
Tanya Cockburn RD

Jetta Johnson RD

Reviewed by:

Rochelle Anthony RD

CDM Dietitian, Saskatoon Health Region



These materials are available for download on the CD NAP website

www.ehealth-north.sk.ca

1.1 Nutritional Management of Chronic Obstructive Pulmonary Disease (COPD)

Nutritional Goals

- To prevent or reverse malnutrition
- To improve or maintain respiratory function

Malnutrition and COPD

- People with COPD expend more energy for breathing. A person with COPD can expend up to 50% more energy on breathing than healthy individuals.
- As COPD progresses symptoms such as shortness of breath, taste alterations due to dry mouth, fatigue, early feelings of fullness, etc. can contribute to decreased food intake. A prolonged decrease in food intake can lead to significant weight loss and malnutrition.

1.2 Recommendations for Specific Nutrition Concerns and Solutions

Complications	Why it effects food intake	What to do
Shortness of breath or swallowing air	<ul style="list-style-type: none"> • Increases fatigue during a meal, which shortens the time spent eating and can decrease the amount of food consumed • Can result in gastric distension, discomfort and decreased food intake 	<ul style="list-style-type: none"> • Provide 5 - 6 smaller meals per day. This will keep the stomach from filling up too much, which gives the lungs room to expand. • Select foods that are easy to chew • Eat slowly, take smaller bites, and breathe deeply while chewing • Clear airways of mucus at least 1 hour before eating • Encourage client to rest and use bronchodilators before meals • Try drinking liquids at the end of the meal. Drinking before or during the meal may increase feelings of fullness or bloating. • Eat while sitting up to make it easier for lung expansion • Use pursed lip breathing

Bloating or gas	<ul style="list-style-type: none"> • People may experience more bloating or gas when they have COPD 	<ul style="list-style-type: none"> • Avoid overeating; eat smaller meals • Avoid foods that cause bloating or gas (may vary depending on the person) such as broccoli, cabbage, beans, cauliflower, radishes, onions, peas, corn, turnips and fried, greasy or heavily spiced foods • Eat slowly, chew food well and avoid gulping • Avoid drinking while eating to avoid swallowing air • Limit intake of carbonated beverages
Thick mucus	<ul style="list-style-type: none"> • Alters taste sensations 	<ul style="list-style-type: none"> • Drink 6 - 8 glasses of non-caffeinated fluid to keep mucus thin and easy to cough up • Milk and dairy products do not produce more mucus but can coat mucus already present. Try drinking half a cup of 100% orange juice after having dairy products to help thin mucus.
Dental Problems	<ul style="list-style-type: none"> • Can cause mouth pain and make it more difficult to eat 	<ul style="list-style-type: none"> • Alterations should be made in food textures/consistency to aid in chewing and swallowing • For example, try fish instead of pork chops or cooked vegetables instead of raw vegetables
Fatigue	<ul style="list-style-type: none"> • People may feel too tired to eat or lack the energy needed for eating • This causes some people to shorten the length of time spent eating 	<ul style="list-style-type: none"> • Rest before meals • Eat smaller more frequent meals • Eat your largest meal when you have the most energy • Make easy to prepare meals and make extra to freeze, if possible, for times of increased fatigue • Use oven or microwave cooking rather than stovetop. Some people may find it tiring to stand at the stovetop. • Ask family to help with meal preparation • Make appropriate referrals to home care or meals on wheels, if available

Reliance on oxygen	<ul style="list-style-type: none"> • Food intake may be limited when reliant on oxygen 	<ul style="list-style-type: none"> • Use oxygen while eating if needed or use oxygen when finished eating
Constipation	<ul style="list-style-type: none"> • People may experience more constipation when they have COPD 	<ul style="list-style-type: none"> • Make sure client has adequate fluid intake (6 - 8 cups per day) • Increase dietary fibre (such as whole grains, beans, vegetables and fruits, bran cereals, whole grain pasta and rice) • Recommended to aim for 25 – 35 grams of fibre per day (Refer to handout “<i>Foods with Fibre</i>”) • Exercise as tolerated

Refer to handouts “*Nutrition Tips for COPD*” and “*Common Complications and Solutions in COPD*”

2. 1 Nutrient Recommendations

2.2 Energy

- When a person has COPD more energy is needed in order to breathe
 - The muscles used in breathing may require 10 times more calories than those of a person without COPD
 - Consuming more energy than your body requires is not recommended as it puts additional stress on the lung and heart functions. When a person consumes excess energy, the body produces more carbon dioxide, which causes increased respiration rate. In past research it was thought that an excess intake of carbohydrates led to increased carbon dioxide production. Current literature proposes that excess consumption of energy is more significant in the production of increased carbon dioxide than intake of carbohydrates.
 - A client who is malnourished may require a high energy and protein diet
 - A client who is overweight may require an energy restricted diet to help them lose weight to help improve respiration
 - A client who has had significant weight loss such as a weight loss of 5% of their body weight in the previous month or 10% of their body weight in the previous 6 months can be provided with the *“High Energy and Protein Diet”* handout
- % weight change = $\frac{\text{usual body weight} - \text{actual body weight}}{\text{usual body weight}} \times 100$

If the client is overweight:

- Reduce portion sizes. Continue to consume 2 - 3 servings of Meat and Alternatives per day.
- Limit high fat and high sugar foods such as hotdogs, french fries, bologna, juice, pop, chips, candy, chocolate, etc.
- Eat high fibre foods to help you feel full such as fruits, vegetables, whole wheat bread, brown rice, oatmeal, cereals, etc.
- Increase activity as advised by your doctor

Refer to the handout *“Tips for Weight Loss”*

2.3 Protein

- Intake needs to be adequate to prevent muscle breakdown and maintain lung strength. Eating Well with Canada's Food Guide recommends 2 servings of Meat and Alternatives per day for women and 3 servings for men.
- A client who is malnourished will require additional protein
- A client needing to lose weight may benefit from limiting their portion sizes of meat, chicken and fish
- Excess protein should be avoided in those with chronic kidney disease as it can decrease kidney function

2.4 Fluid

- Adequate fluid is needed to hydrate the body and help keep mucus thin and easy to cough up
- It is recommended to consume approximately 6 - 8 cups of non-caffeinated fluid per day. This can include water, milk, 100% juice, tea, soup, etc.
- Some people with COPD who also have congestive heart failure might need to limit their fluid intake. Fluid requirements should be discussed with the client's doctor.

2.5 Sodium (salt)

- Eating too much sodium can cause your body to retain fluid making breathing more difficult
- The recommended intake is 2300 mg or less of sodium per day (or 1 teaspoon of salt). This includes sodium added during cooking, at the table and what is added to foods products.

Tips to decrease sodium intake:

- Limit processed foods such as bacon, deli meats, bologna, canned soups, instant noodles, sauces, fast foods, condiments, etc.
- Remove salt shaker from table
- Use herbs or no-salt spices like pepper, onion powder, garlic powder, oregano, basil, etc.
- Avoid adding salt to food when cooking
- Read food labels and avoid foods with more than 300 mg of sodium per serving
- Salt substitutes may not be for everyone. The client should check with their doctor before using salt substitute such as half-salt.

Refer to handout "*Tips to Reduce Salt Intake*"

3.1 Osteoporosis

- People with COPD are at an increased risk of osteoporosis if they have used corticosteroids long-term
- Calcium and vitamin D supplementation is recommended as bone loss is significant after the initiation of starting steroid treatment. It is recommended that the client take 1200 mg of calcium and 1000 IU of vitamin D.
- The client should be encouraged to eat calcium and vitamin D rich foods and exercise if possible

Refer to handout "*Calcium and Vitamin D Rich Foods*"

4.1 When to Refer to a Dietitian

- A client who has had significant weight loss such as a weight loss of 5% of their body weight in the previous month or 10% of their body weight in the previous 6 months
- An overweight/obese client who requires nutritional education to achieve weight loss
- A client who has several coexisting health problems in addition to COPD, such as renal failure, heart disease, diabetes, etc.

5.1 References

- American Association for Respiratory Care. *Eating Right: Tips for the COPD Patient*. 2002. Available at: www.aarc.org
- American Dietetic Association & Dietitians of Canada. *Chapter 47: Respiratory Disease*. Manual of Clinical Dietetics. 6th Edition. 579-586
- Cerrato PL. *The special nutritional needs of a COPD patient*. RN. 1987; 50(11): 75-76
- Chapman KM & Winter L. *COPD: using nutrition to prevent respiratory function decline*. Geriatrics. 1996; 51(12): 37-42
- Cleveland Medical Clinic. *Nutritional Guidelines for People with COPD*. 1995-2009. Available at: www.clevelandclinic.org
- Fernandes AC. & Bezerra OMPA. *Nutrition Therapy for Chronic Obstructive Pulmonary Disease and Related Nutritional Complications*. J Bras Pneumol. 2006; 32(5): 461-71
- Health Canada. *Nutrient Values of Some Common Foods*. 2008
- Houghton, Lisa. *The Nutritional Management of Weight Loss in COPD*. BPJ. Issue 15
- Lemmieux M, Gray-Donald K & Bourbeau J. *Nutrition*. Comprehensive Management of Chronic Obstructive Pulmonary Disease. Chapter 13. page 245
- Mahan KL & Escott-Stump S. *Medical Nutrition Therapy for Pulmonary Disease*. Krause's Food, Nutrition and Diet Therapy. 11th Edition: 946-
- Pennington JAT. *Bowes & Church's Food Values of Portions Commonly Used*. 16th Edition
- Regina Qu'Appelle Health Region. *High Energy High Protein Diet*. 2002. Handout.
- St. Florian. *Nutrition and COPD – Dietary Considerations for Better Breathing*. Today's Dietitian. 2009; 11(2): 54
- Vancouver Island Health Authority – Lung Health Program. *Nutrition Tips for COPD*. 2004

6.1 Resources

2010 – 1. These materials were developed by the Clinical Subcommittee of the Chronic Disease Network and Access Program of the Prince Albert Grand Council and its partners and funded by the Aboriginal Health Transition Fund.