COPD MANAGEMENT

RISK FACTORS
CLASSIFICATION OF SEVERITY
REFERRAL
MANAGEMENT OF COPD
ACUTE EXACERBATION OF COPD
SELF-MANAGEMENT PLAN OF ACTION
NUTRITION MANAGEMENT
ALGORITHMS OF CARE
Management of COPD

Guide for Health Professionals

Janice Norfield, BSP CRE
Reviewed by Dr. D. Marciniuk, MD, FRCP(C), FCCP

These materials are available for download on the CD NAP website

www.ehealth-north.sk.ca
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.

It is recommended that prescribers evaluate their patients’ individual circumstances and conditions before any diagnosis or treatment is made or procedure followed that may be based on suggestions by the authors of this resource. Prescribers should consult product monographs before prescribing any of the medications mentioned or discussed in this resource.
COPD – Definition

- Chronic Obstructive Pulmonary Disease
- “COPD is a respiratory disorder largely caused by smoking characterized by progressive, partly reversible airflow obstruction; systemic manifestations; and increasing frequency and severity of exacerbations”.

1. Exposure to a noxious substance (ie tobacco smoke) initiates an inflammatory response that involves neutrophils, macrophages, T-cells, and inflammatory mediators. These mediators damage lung structure and sustain inflammation which persists long after the noxious substance has been removed. Chronic inflammation causes hypertrophy and hyperplasia of the mucous glands; remodelling of the airways and smooth muscle contraction which restrict airflow; and destruction of bronchioles and the capillary bed.
2. Dynamic hyperinflation means the lungs cannot completely empty (to residual volume) on exhalation. Air becomes trapped in the lungs.
3. There are areas of the lungs that are well perfused but not well ventilated and vice versa. The lungs no longer efficiently oxygenate the blood, resulting in hypoxemia. Serious consequences include pulmonary hypertension and right heart failure.
4. Include: skeletal muscle dysfunction, malnutrition, osteoporosis, metabolic disorders, pulmonary hypertension, arrhythmias, heart failure, ischemic heart disease, glaucoma and cataracts, depression, anxiety and panic disorders.
COPD-Diagnosis

- Post-bronchodilator FEV₁/FVC <0.70\(^1\) indicates airflow obstruction. Spirometry is necessary to establish the diagnosis of COPD\(^2\).

However...
- Most patients are not diagnosed until the disease is well advanced (symptoms may not be recognised until 40-50% of lung function is lost\(^3\).
- Spirometry should be targeted at persons at risk for COPD to establish earlier diagnosis and initiation of treatment.

Patient History should include:

1. Tobacco use (current and past)
2. Assessment of breathlessness using MRC scale
3. Assessment of complications of COPD (ankle edema, weight loss, etc)
4. Identify comorbidities (anxiety, depression, osteoporosis, glaucoma, CVD, etc)
5. Current treatment

Patient Clinical Assessment (to help establish diagnosis, severity of COPD and to rule out other pathology):

- physical exam
- pulmonary function tests (including lung volumes and diffusing capacity)
- exercise tests (for advanced COPD in preparation for Pulmonary Rehab Program enrollement)
- ABG if FEV₁ <40% and oximetry <92%;
- venous blood test for anemia, polycythemia;
- BMI;
- strength and endurance testing for skeletal muscle function;
- radiology;
- echocardiography to assess pulmonary hypertension;
- sputum cytology and C&S

1. FEV₁/FVC is a ratio of the volume of air blown out forcibly in 1 second compared to the total volume that could be blown out. If the patient can only blow out 70%, there is an obstruction. Normal predicted values for FVC₁/FVC are typically based on populations of matched age, gender and height. Predicted values are derived from Caucasian populations; predicted values in First Nation populations have not been derived.
2. Differential diagnosis: CV conditions, pulmonary embolus, deconditioning, obesity, anemia, interstitial lung disease, other lung pathology.
3. Patients may be unaware of the disease, not able to recognise worsening of symptoms, and develop strategies to cope with increasing symptoms. For example, patients may believe that increasing dyspnea is a normal factor of aging, so do not seek medical attention until functional ability is severely impaired.

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Screening for COPD

- Current/past smokers ≥ 40 years old who answer yes to any of the following:

  - Do you cough regularly?
  - Do you cough up phlegm regularly?
  - Do simple chores make you short of breath?
  - Do you wheeze at night or with exertion?
  - Do you get more colds that last longer than other's?

- Spirometry is recommended.
- Note that an acute exacerbation is a common initial clinical presentation of COPD. Spirometry should be considered for current/past smokers who present with a RTI (once acute symptoms subside).
Risk Factors for COPD

Environmental factors:

- Tobacco smoke (active and passive exposure)
- Occupational agents (ex asbestos, coal, gold, silica dust, wood smoke, fibreglass dust, solvent fumes)
- Air pollution (outdoor: smog, ozone, fuel combustion exhaust, volatile compounds; indoor: cooking and heating fumes)

Host factors:

- AAT deficiency (genetic disorder in which there are low levels of alpha-1 antitripsyn in the lung and blood; consider if COPD presents in a young adult, especially with a family history of AAT deficiency)
- Childhood viral infections
- Bronchial hyper-responsiveness or asthma
- Lung growth
- Other genetic factors (other proteolytic enzymes and antiproteases may be involved)

Other potential factors:

- Sex/gender (women seem predisposed to the effects of smoking and the environment)
- Socioeconomic factors
- Alcohol use (excessive alcohol intake is an independent risk factor for COPD)
**Classification of COPD Severity**

- Once a diagnosis of COPD has been established with spirometry, severity can be classified by *Symptoms and Disability* or by *spirometry*.

**Canadian Thoracic Society Classification of Severity by *Symptoms and Disability***:

- **Mild**
  - SOB from COPD\(^1\) when hurrying on the level or when walking up a slight hill
  - MRC 2

- **Moderate**
  - SOB from COPD\(^1\) causes patient to stop after walking about 100m (or after a few minutes) on the level
  - MRC 3 to 4

- **Severe**
  - SOB from COPD\(^1\) causes patient to be too breathless to leave home; SOB when dressing, etc.; signs of right heart failure\(^2\)
  - MRC 5

1. Symptoms may not accurately reflect COPD disease severity if other non-COPD conditions are present that also cause SOB (e.g., cardiac dysfunction, anemia, muscle weakness, metabolic disorders). Care should be taken to classify severity of COPD in patients with comorbid diseases or other possible causes of SOB.
2. Or presence of chronic respiratory failure.

**Canadian Thoracic Society Classification of COPD Severity by *Impairment of Lung Function***

**MILD**: FEV\(_1\) ≥ 80% predicted; FEV\(_1\)/FVC < 0.7

**MODERATE**: FEV\(_1\) 50% to <80% predicted; FEV\(_1\)/FVC < 0.7

**SEVERE**: FEV\(_1\) 30% to <50% predicted; FEV\(_1\)/FVC < 0.7

**VERY SEVERE**: FEV\(_1\) <30% predicted; FEV\(_1\)/FEV < 0.7

*FEV\(_1\) = Forced Expiratory Volume in 1 second = volume of air forcibly exhaled in 1 second, compared to cohorts of the same age, height, weight, and gender.*
Classification of COPD Severity cont`

MRC¹ Dyspnea Scale:

1. • Not troubled by SOB except with strenuous exercise

2. • Troubled by SOB when hurrying on the level or walking up a slight hill

3. • Walks slower than other people of the same age because of SOB or has to stop for breath when walking at own pace (on the level)

4. • Stops for breath after walking about 100 yards or after a few minutes (on the level)

5. • Too breathless to leave home
   • SOB when dressing or undressing

BODE Index (Assess Risk of Death)

- **Body Mass Index**  \(\downarrow\) BMI = \(\uparrow\) risk of death
- **Airflow Obstruction** \(\uparrow\) obstruction = \(\uparrow\) risk of death
- **Dyspnea** \(\uparrow\) dyspnea = \(\uparrow\) risk of death
- **Exercise Tolerance** \(\downarrow\) exercise tolerance = \(\uparrow\) risk of death

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When to Refer to a Specialist

- Diagnostic uncertainty
- Symptoms disproportionate to degree of airflow obstruction
- Accelerated decline in lung function
- Possible α₁-antitrypsin deficiency
- Symptom onset at young age
- Severe or recurrent acute exacerbations
- Failure to respond to treatment

1. IE Patient complains of more severe symptoms or disability than spirometry results would suggest.
2. Lung function normally declines at a rate of about 15-20mL per year starting at 40-50 years of age. In smokers the rate of decline is up to 80mL/year
3. AAT deficiency is a genetic disorder involving low levels of the enzyme α₁-antitrypsin in the lungs and blood. This enzyme is a protease inhibitor which protects tissue from destructive enzymes such as elastase produced during the inflammatory process. A deficiency in AAT results in uninhibited tissue breakdown from inflammation.
Management of COPD

Goals:

- Prevent disease progression (by smoking cessation)
- Alleviate symptoms
- Improve exercise tolerance
- Prevent and treat exacerbations
- Improve overall health status
- Reduce mortality

Components:

- Smoking cessation
- Education and Self Management Skills
- Pharmacologic agents
- Exercise and Pulmonary Rehab
- Vaccinations (including annual flu shot and pneumonia shot every 5 years)
- Comprehensive case management for advanced disease

Comprehensive Management of COPD

Can Respir J 2008;15(Suppl A):1A-8A.

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Smoking Cessation

- ...is the single most effective intervention to reduce the risk of developing COPD slow its progression...

- 25% of Canadians smoke
- Those who start smoking in their teens can expect a 15 year ↓ life expectancy
- Those who start smoking in their teens have a 50% ↑ risk of dying from tobacco-related disease
- 85% of cases of COPD are due to smoking
- 15% of tobacco-related deaths are due to COPD
- Smoking cessation slows the rate of decline in lung function to almost that of a non-smoker
Smoking Cessation cont'

- A combination of counselling (individual or group) and pharmacologic agents increases success
- Assess Stage of Change (ie readiness to quit) and offer support to help patient progress through each level (including possible relapse) to maintenance stage.
## Smoking Cessation – Pharmacologic Agents

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<th>Medication</th>
<th>Dose</th>
<th>Use</th>
<th>Duration</th>
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<tr>
<td><strong>Nicotine Gum</strong></td>
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</tr>
<tr>
<td>Nicorette</td>
<td>2mg²</td>
<td>1 piece/hour or prn</td>
<td>Up to 12 weeks³</td>
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<td></td>
<td>Maximum 24pieces/day</td>
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<tr>
<td>Nicorette Plus</td>
<td>4mg⁴</td>
<td>1 piece/hour or prn</td>
<td>Up to 12 weeks³</td>
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<td></td>
<td>Maximum 24pieces/day</td>
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</tr>
<tr>
<td>Thrive²,³,⁴</td>
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<tr>
<td>Thrive</td>
<td>1, 2mg⁶</td>
<td>1 lozenge q1-2h</td>
<td>6 weeks</td>
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<tr>
<td></td>
<td>Maximum 30mg/day</td>
<td>1 lozenge q2-4h</td>
<td>3 weeks</td>
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<td></td>
<td></td>
<td>1 lozenge q4-8h</td>
<td>3 weeks</td>
</tr>
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<td><strong>Nicotine Patch</strong></td>
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<td>Nicoderm</td>
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<td>1 patch/24 hours⁹</td>
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<td>14mg/24h</td>
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<td>7mg/24h</td>
<td>1 patch/24 hours⁹</td>
<td>2 weeks</td>
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<td>10mg/cartridge</td>
<td>Puff on cartridge x</td>
<td>Use for up to 12 weeks initially, then taper over 6-12 weeks</td>
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<tr>
<td></td>
<td>6-12 cartridges/day</td>
<td>20min or prn</td>
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<tr>
<td><strong>Bupropion</strong></td>
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<tr>
<td>Zyban</td>
<td>150mg AM x 3days then 150mg BID¹²</td>
<td>Stop smoking between day 8 and 14</td>
<td>7 to 12 weeks¹³</td>
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<tr>
<td><strong>Varenicline</strong></td>
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<tr>
<td>Champix</td>
<td>0.5mg AM x 3days then 0.5mg BID x 4 days, then 1mg BID¹⁵</td>
<td>Stop smoking after 7 days</td>
<td>12 weeks¹⁶</td>
</tr>
</tbody>
</table>

*Source: CTS recommendations for management of COPD - 2007 update*
Smoking Cessation – Pharmacologic Agents cont’

1. Do not chew as per non-medicated gum; chew 2 or 3 times, then park gum between gingival and cheek for 30-60 seconds. Repeat for 30 minutes. Do not eat or drink 15 minutes before or after using gum.
   Side Effects: burning, jaw pain, hiccups
   Contraindications: recent MI; unstable angina; severe cardiac arrhythmia; recent stroke; pregnancy and breastfeeding (but many experts believe use of NRT is safer than smoking in pregnancy); <18 years of age; dental problems; TMJ; *be aware of potential harm to children and pets if not properly disposed of*
   Drug Interactions: coffee, acidic beverages ↓ absorption (separate use by ≥15 minutes)

2. If <25 cigarettes (1 pack) is smoked per day
3. Or longer if required. Taper by at least 1 piece every 4 to 7 days.
4. If ≥25 cigarettes (1 pack) is smoked per day.
5. Suck lozenge until strong taste, then park in cheek. Repeat as long as required or until lozenge is gone (about 30 minutes).
   Side Effects: sore gums, teeth, or throat; hiccups; heartburn
   Contraindications: As per nicotine gum. *be aware of potential harm to children and pets if not properly disposed of*
   Drug Interactions: As per nicotine gum.

6. Strength to use depends on interval to first craving upon awakening: <30 minutes, use 4mg; > 30 minutes, use 2mg.
7. Place patch on relatively hairless area between neck and waist. Apply patch to different place each day.
   See package insert for tips to maximize adhesion.
   Side Effects: Local skin irritation; vivid dreams
   Contraindications: not contraindicated in CVD; with caution post MI or stroke (though safer than smoking?); pregnancy and breastfeeding; <18 years of age *ensure proper disposal of used patches*
   Drug Interactions: smoking ↑ side effects
8. Heavy smokers may need 2 patches to start. Start with lower dose if < 10 cigarettes/day. Tapering and duration should be individualized.
9. May remove patch at night if vivid dreams are troublesome, however craving for nicotine in the morning may be quite strong. Using nicotine inhaler, lozenge, or gum first thing in the morning may be helpful
10. Ten puffs = 1 puff from cigarette. Do not eat or drink 15 minutes before or after using inhaler.
    Side Effects: throat irritation; cough; rhinitis; dyspepsia
    Contraindications: as per nicotine gum
11. Can be used with NRT, but monitor BP. Decreases weight gain.
    Side Effects: insomnia, dry mouth, tremors, skin rashes, serious allergic reaction
    Contraindications: current seizure disorder; current/past diagnosis of bulimia or anorexia nervosa; concurrent use of other agents containing bupropion; recent/current withdrawal from alcohol, benzodiazepines or other sedatives; current/use within 14 days of MAOI; use with caution in situations that may reduce seizure threshold (history of head trauma, prior seizure disorder, CNS tumor, excessive alcohol use, stimulant/opioid addiction, diabetes)
    Drug Interactions:
12. ↓ dose in renal or hepatic impairment (not recommended)
    Ensure at least 8 hours between doses. Do not give second dose close to bedtime to avoid insomnia. If insomnia persists, reduce dose to 150mg AM
13. Consider longer treatment for smokers who suffer significant mood swings or who continue to experience strong cravings after discontinuing bupropion.
    Side Effects: nausea, abnormal dreams, constipation, vomiting, flatulence, dry mouth
    Contraindications: severe renal impairment; pregnancy and breastfeeding;
    Drug Interactions: cimetidine; possible ↑ adverse effects with NRT; ? safety with bupropion
15. 0.5mg BID if CrCl < 30mL/min. Use ↓dose in elderly or those suffering intolerable side effects.
16. Those who are still not smoking after 12 weeks of varenicline use may continue for another 12 weeks.
**Education and Self-management Skills**

- Teaches patients to identify problems
- Teaches patients to develop skills to solve problems
- Addresses ongoing management of COPD
  - Enhances adherence to treatment and management skills
  - Improves QOL

**Outcomes of Education and Self-Management:**

- ↑ QOL
- ↑ Patient satisfaction
- ↓ Health Care expenses
- ↓ Exacerbations and better management of them when they occur

**Components:**

- Smoking cessation
- Proper use of medications and oxygen
- Pulmonary Rehab (where available) and exercise
- Management of acute breathlessness and exacerbations
- Reducing and dealing with fatigue
- Addressing nutrition issues
- Addressing psychosocial issues
- Improving sleep
- Addressing sexuality issues
- Planning for leisure and travel
- End-of-life planning

1. Refer to ‘COPD Toolkit’ for more information and resources. To obtain a COPD Toolkit, contact the Lung Association of Saskatchewan ([info@sk.lung.ca](mailto:info@sk.lung.ca)) or CDNAP.
Pharmacologic Management of COPD

Mild COPD:
MRC 1 or 2; or FEV1$_1$ >80%

- Smoking cessation
- Education
- Self-management skills
- Exercise

Ipratropium or Salbutamol prn

Persistent disability (ie SABD needed > BID)

LAAC OD + Salbutamol prn
Or
LABA BID + salbutamol + ipratropium prn
Pharmacologic Management of COPD cont’

Moderate COPD:
- MRC 3 or FEV₁ 50-80% predicted
- <1 AECOPD/year

- Smoking cessation
- Education
- Self-management skills
- Exercise

LAAC OD + Salbutamol prn
Or
LABA BID + Salbutamol or Ipratropium prn

Persistent dyspnea

LAAC + LABA + Salbutamol prn

Persistent dyspnea

LAAC + LABA/ICS + Salbutamol prn
Pharmacologic Management of COPD cont’

Severe COPD:
- MRC 4 to 5; or FEV<sub>1</sub> < 50%
- ≥1 AECOPD/year

- Smoking cessation
- Education
- Self-management skills
- Exercise

LAAC + LABA/ICS + Salbutamol prn

Persistent dyspnea

Consider adding theophylline

PaO<sub>2</sub> ≤ 55mmHg or < 60mmHg with ankle edema or HCT > 56%

Consider Long Term O<sub>2</sub> Therapy

Surgery in selected patients (Lung Volume Reduction or Lung Transplant)
Pharmacologic Management of COPD: Inhaled Medications

<table>
<thead>
<tr>
<th>Drug</th>
<th>Trade Name</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Short-acting Beta Agonist</strong></td>
<td></td>
<td></td>
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<tr>
<td>Salbutamol</td>
<td>Ventolin</td>
<td>100mcg MDI; 1.25, 2.5, or 5.0 mg nebs ii puffs or 1 neb (2.5-5.0 mg) PRN</td>
</tr>
<tr>
<td>Terbutaline</td>
<td>Bricanyl</td>
<td>500mcg PDI PRN</td>
</tr>
<tr>
<td><strong>Short-acting Anticholinergic</strong></td>
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<tr>
<td>Ipratropium</td>
<td>Atrovent</td>
<td>20mcg MDI; 250, 500mcg nebs ii puffs QID (or PRN) or 1 neb QID</td>
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<td><strong>SABA/SAAC</strong></td>
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<td></td>
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<td>Ipratropium/Salbutamol</td>
<td>Combivent</td>
<td>500mg/2.5mg neb QID</td>
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<tr>
<td><strong>Long-acting Anticholinergic</strong></td>
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<tr>
<td>Tiotropium</td>
<td>Spiriva</td>
<td>18mcg HH OD</td>
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<td><strong>Long-acting Beta Agonist</strong></td>
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<tr>
<td>Salmeterol</td>
<td>Serevent</td>
<td>50mcg PDI BID</td>
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<tr>
<td>Formoterol</td>
<td>Foradil</td>
<td>12mcg PDI 6mcg, 12mcg PDI BID</td>
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<td>Oxeze</td>
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<td><strong>Inhaled Corticosteroid</strong></td>
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<tr>
<td>Beclomethasone</td>
<td>QVAR</td>
<td>50mcg, 100mcg MDI i-ii puffs BID</td>
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<tr>
<td>Budesonide</td>
<td>Pulmicort</td>
<td>100, 200, or 400mcg PDI 0.25, 0.50, 1.0 mg nebs BID</td>
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<td>Ciclesonide</td>
<td>Alvesco</td>
<td>100, 200, or 400mcg MDI OD or BID</td>
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<td>Fluticasone</td>
<td>Flovent</td>
<td>50, 125, or 250mcg MDI 100, 250, or 500mcg PDI</td>
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<td><strong>LABA/ICS</strong></td>
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<tr>
<td>Salmeterol/Fluticasone</td>
<td>Advair</td>
<td>25mcg/125, 25mcg/250mcg MDI i-ii BID</td>
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<tr>
<td></td>
<td></td>
<td>50mcg/100mcg, 50mcg/250mcg, 50mcg/500mcg PDI BID</td>
</tr>
<tr>
<td>Formoterol/Budesonide</td>
<td>Symbicort</td>
<td>6mcg/200mcg, 12mcg/200mcg PDI i-iv inh BID</td>
</tr>
</tbody>
</table>
Pharmacologic Management of COPD

Inhaled Medications cont’

1. Onset 5-15 minutes; Peak 60-90 minutes; Duration 3-6 hours
   Side Effects: tremor; ↑ HR (especially nebulised); nervousness; ↑ QT; headache; ↓ K+; ↑ insulin secretion; hyperglycemia

2. Onset 5-15 minutes (usually later than SABA); Peak 60-120 minutes; Duration 4-8 hours
   Side Effects: Dry mouth; blurred vision if contact with eyes (ie close eyes while using); tremors or palpitations; urinary retention (especially elderly men); glaucoma (use with caution)

3. Side Effects: as per short-acting anticholinergics

4. Slower onset, so cannot be used for rescue.
   Side Effects: as per short-acting beta agonists

5. Fast onset so provide temporary relief of symptoms
   Side Effects as per short-acting beta agonists

6. Note that single-entity Inhaled corticosteroids are not recommended for treatment of COPD. They should be used only in combination with a LABA

7. Side Effects: oral thrush, reversible voice changes (use spacer and rinse mouth after using); weight gain (salt and water retention), osteoporosis, cataracts, skin thinning with easy bruising at high doses

<table>
<thead>
<tr>
<th>Drug</th>
<th>Trade Name</th>
<th>Device</th>
<th>Description</th>
</tr>
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<td>Salbutamol</td>
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<td>Ventolin</td>
<td>Diskus</td>
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<td>Ventolin</td>
<td>Nebules</td>
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<td>Atrovent</td>
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<tr>
<td>Fluticasone</td>
<td>Flovent</td>
<td>Diskus</td>
<td>Orange</td>
</tr>
<tr>
<td>Salmeterol/Fluticasone</td>
<td>Advair</td>
<td>MDI</td>
<td>Purple</td>
</tr>
<tr>
<td>Salmeterol/Fluticasone</td>
<td>Advair</td>
<td>Diskus</td>
<td>Purple</td>
</tr>
<tr>
<td>Budesonide/Formoterol</td>
<td>Symbicort</td>
<td>Turbohaler</td>
<td>White-red dial</td>
</tr>
</tbody>
</table>
Pharmacologic Management of COPD

Inhalation Devices

**Choose device that best suits needs and abilities of the patient**

**Refer to package insert for proper use of device**

**Assess inhaler technique at each COPD-related visit**

**Recommend valved spacer with MDI to increase lung deposition**

MDI – Metered Dose Inhaler

- Requires coordination of inhalation with pressing canister for proper lung deposition
- Requires some strength to press canister: may not be useful in the elderly or those with arthritis
- Recommend valved spacer to increase lung deposition

PDI – Powder Dose Inhaler (Diskus, Turbohaler)

- Must be kept dry
- Breath-actuated

HH – HandiHaler

- Capsule inserted into device, then pierced prior to inhalation; ie medication is not within the device but dispensed separately.

Nebules

- Nebulizer requires electricity; very expensive without added benefit
- Generally not recommended in the outpatient setting; significant medication enters the room air and can affect the eyes.

2009 These materials were developed by the clinical subcommittee of the Chronic Disease Network and Access Program of Prince Albert Grand Council and its partners and funded by the Aboriginal Health Transition Fund.
# Pharmacologic Management of COPD

## Oral Agents

<table>
<thead>
<tr>
<th>Drug</th>
<th>Trade Name</th>
<th>Dosing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Theophyllines</strong>&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aminophylline</td>
<td>Phyllocontin</td>
<td>350mg BID</td>
</tr>
<tr>
<td>Oxtriphylline</td>
<td>Choledyl&lt;sup&gt;2&lt;/sup&gt;</td>
<td>300mg TID</td>
</tr>
<tr>
<td>Theophylline</td>
<td>Uniphyl; Theodur</td>
<td>400-600mg/day&lt;sup&gt;3&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>Corticosteroids</strong>&lt;sup&gt;4&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dexamethasone</td>
<td>Decadron</td>
<td>7.5mg/day x 10-14 days</td>
</tr>
<tr>
<td>Prednisone</td>
<td></td>
<td>0.6mg/kg/day x 10-14 days&lt;sup&gt;5&lt;/sup&gt;</td>
</tr>
<tr>
<td>Methylprednisolone</td>
<td>Medrol</td>
<td>0.5mg/kg/day x 10-14 days</td>
</tr>
</tbody>
</table>

1. Efficacy is related to serum concentration, so must be taken regularly to be effective. Therapeutic window is narrow, so dose must be adjusted to serum concentration. To avoid toxicity, keep level at low recommended or subtherapeutic range. Do not initiate during AECOPD. These offer modest improvements in pulmonary function, symptoms, and exercise tolerance, but may be useful in some patients. Typical starting dose may be Theo-Dur 200mg BID or Uniphyll 400mg HS.

Side Effects: nausea, vomiting, diarrhea, insomnia, ↑HR, headaches, irritability, nervousness, heartburn; toxicity: arrhythmias, seizures, coma, death

Drug Interactions: many potential including ↑theophylline levels with amiodarone, cimetidine, ciprofloxacin, clarithromycin, erythromycin, fluvoxamine, isoniazid, propranolol, mexiletine, verapamil; ↓theophylline levels with alcohol, carbamazepine, phenobarbital, phenytoin, rifampin, tobacco smoking

2. Available in oral tablets and elixir.

3. Dose interval depends on preparation used (ex for SR give 300mg BID). Take with food

4. **Chronic use of oral corticosteroids should be avoided in COPD patients because of their limited benefits and potential side effects.** Short-term use of oral corticosteroids does have demonstrated efficacy in AECOPD.

Side Effects (from short term use): glucose intolerance; ↑appetite; weight gain; mood changes; ↑BP; fluid retention; insomnia; vivid dreams; stomach upset; ↓K<sup>+</sup>

Drug Interactions: oral diabetic agents (↑BG); NSAIDs (↑risk of GI ulcer); diuretics (↓K<sup>+</sup>)

**Do not abruptly discontinue oral corticosteroid after long-term use (>14 days).** Withdrawal symptoms such as fatigue, weakness, fever, joint pain, ↓BP, or cardiovascular collapse may occur. A suggested tapering schedule for prednisone (or equivalent dose of alternative agent) is ↓dose by 2.5 to 5 mg every 3 days. The dose may be temporarily increased, then tapered again slowly if disease flares during tapering.

5. Maximum 50mg/day.
Pulmonary Rehab Program

- Should be offered early in disease (MRC 2-3)

Components:

- Exercise training
- Psychosocial support (for social isolation, depression)
- Nutrition counselling
- Occupational therapy and energy conservation strategies

Benefits:

- ↓ SOB
- ↑ exercise endurance
- ↑QOL
- ↓ leg discomfort
- ↓ fatigue
- Reduced resource utilization due to AECOPD
- Trend toward ↓ mortality compared to standard care

Exercise Training:

“All COPD patients should be encouraged to maintain an active lifestyle...EXERCISE IS MEDICINE!!”

Goal: ↓ disability, resulting in improved function for self-care, as well as productive and recreational activities

<table>
<thead>
<tr>
<th>Type of Exercise</th>
<th>Benefit</th>
<th>Duration/Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerobic Training</td>
<td>↑endurance, endurance, ↓SOB, ↑QOL</td>
<td>30 minutes x 3-5 days/week</td>
</tr>
<tr>
<td>Strength Training</td>
<td>Develop and maintain muscle strength and mass; ↑exercise capacity, ↓SOB, ↑QOL</td>
<td>5-15 minutes x 2-3 days/week</td>
</tr>
<tr>
<td>Flexibility Training</td>
<td>Improve/maintain joint range of motion; maintain independence in ADLs; best posture for breathing</td>
<td>5-15 minutes x 2-3 days/week</td>
</tr>
</tbody>
</table>

*As physical limitations and comorbidities allow. Note that strength training and flexibility training alone are not beneficial for COPD, but are useful when combined with aerobic training.
Acute Exacerbation of COPD

Sustained worsening of symptoms\(^1\) (>48 hours)

May be infectious\(^2\) or non-infectious\(^3\)

Is the most frequent cause of medical visits and hospitalization of COPD patients.

Contributes to decline in lung function

Can be prevented

1. IE dyspnea, cough, or sputum production. Results in increased use of current medications or use of additional medications.
2. 50% are infectious; many are viral. Most likely pathogens: *Haemophilus influenza*; *Moraxella catarrhalis*; *Streptococcus pneumonia*; *Klebsiella* spp; other Gram-negative spp.
3. Non-infectious causes: environmental exposure (smoke, dust, etc)
   - emotions (laughing, crying)
   - stressful event, anxiety
   - non-compliance with medications
   - other pulmonary causes that are non-infectious
   - GERD, CHF, and other non-pulmonary causes
Acute Exacerbations of COPD

Assessment:

- Based on symptoms (cough, dyspnea, sputum volume and color)
- History and physical exam
- ABG, pulse oximetry
- CXR
- Sputum culture (if another exacerbation occurs within a few months of a previous infectious exacerbation)
- Note that spirometry is not useful because FEV$_1$ is always declined and patient may be too breathless to perform the test.

Goals of Treatment:

- Return to baseline symptoms, lung function, and QOL
- ↓ morbidity and mortality
- ↓ risk of relapse

Prevention:

- Smoking cessation
- Influenza vaccine yearly
- Pneumonia vaccine every 5 years
- ICS/LABA if $\geq$1 AECOPD/year or FEV$_1$ <60% predicted
- Tiotropium +/- LABA if FEV$_1$ <60%
- Implement self-management skills (nutrition, exercise, sleep)
- Use Self-Management Plan
Management of Non-Infectious ACOPD

Use breathing techniques and try to relax

Use short-acting bronchodilator as prescribed

Position body to make breathing easier

Avoid exposure to inciting triggers

1. Ex ii puffs of Salbutamol. For environmental causes, may repeat in 20 to 45 minutes if needed.
2. Pollutants, sudden temperature change, wind, heavy exercise.
Management of Infectious AECOPD

Usefulness of Antibiotic:

1/3 of: ↑sputum volume;
↑sputum purulence;
↑dyspnea

2/3 of: ↑sputum volume;
↑sputum purulence;
↑dyspnea

3/3 of: ↑sputum volume;
↑sputum purulence;
↑dyspnea
Management of Infectious AECOPD

↑dyspnea,
↑sputum volume,
↑sputum purulence

COPD without risk factors

First Line: amoxicillin, doxycycline, trimethoprim/sulfamethoxazole, cefuroxime, cefixime, azithromycin, or clarithromycin

Alternatives: amoxicillin/clavulanate, moxifloxacin, or levofloxacin

COPD with ≥1 risk factors: FEV₁ <50% predicted; ≥4 exacerbations/year; ischemic heart disease; LTOT; chronic use of oral corticosteroid; antibiotic use in last 3 months

First Line: moxifloxacin or levofloxacin; amoxicillin/clavulanate

(Do not use agent of same class within 3 months of prior use)

Alternatives: parenteral antibiotic may be required; consider hospitalization or referral to respirologist
## Management of Infectious AECOPD cont’

<table>
<thead>
<tr>
<th>Drug</th>
<th>Trade Name</th>
<th>Dosing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Penicillins</strong>&lt;sup&gt;3,11&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amoxicillin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amoxicillin/Clavulanate&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Clavulin</td>
<td>500mg TID x 7-10 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td>500mg TID or 850mg BID X 7-10 days</td>
</tr>
<tr>
<td><strong>Tetracyclines</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doxycycline&lt;sup&gt;4,11&lt;/sup&gt;</td>
<td>Vibra-tabs</td>
<td>100mg BID x 1 day then 100mg OD X 7-10 days</td>
</tr>
<tr>
<td><strong>Sulfonamides</strong>&lt;sup&gt;3,5,11&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trimethoprim/</td>
<td>Bactrim 400mg/80mg;</td>
<td>i DS BID or ii regular BID x 7-10 days</td>
</tr>
<tr>
<td>Sulfamethoxazole</td>
<td>Bactrim DS 800/160mg</td>
<td></td>
</tr>
<tr>
<td>Cephalosporins&lt;sup&gt;1,11&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cefuroxime</td>
<td>Ceftin</td>
<td>500mg BID x 7-10 days&lt;sup&gt;6&lt;/sup&gt;</td>
</tr>
<tr>
<td>Cefixime</td>
<td>Suprax&lt;sup&gt;3&lt;/sup&gt;</td>
<td>400mg OD x 10-14 days</td>
</tr>
<tr>
<td><strong>Extended-spectrum</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Macrolides</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Azithromycin&lt;sup&gt;7&lt;/sup&gt;</td>
<td>Zithromax</td>
<td>500mg OD x 1 day then 250mg OD X 4 days</td>
</tr>
<tr>
<td>Clarithromycin&lt;sup&gt;3,8,11&lt;/sup&gt;</td>
<td>Biaxin</td>
<td>500mg BID x 7-14 days or 100mg XL OD x 7-14 days</td>
</tr>
<tr>
<td>Quinolones&lt;sup&gt;5,11&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moxifloxacin</td>
<td>Avelox</td>
<td>400mg OD x 5 days</td>
</tr>
<tr>
<td>Levofoxacin&lt;sup&gt;3,10&lt;/sup&gt;</td>
<td>Levaquin</td>
<td>500mg OD x 7 days</td>
</tr>
</tbody>
</table>
Management of Infectious AECOPD cont`

1. Side Effects: rash, anaphylaxis (rare); diarrhea, nausea, vomiting, anorexia, abdominal discomfort  
   Drug Interactions: ↓efficacy of oral contraceptives

2. Side Effects as per amoxicillin, but increased epigastric distress

3. ↓dose in renal impairment

4. Side Effects: GI upset, photosensitivity  
   Drug Interactions: ↓absorption with iron or antacids (separate dose by 2 hours); ↓doxycycline level with alcohol, phenobarb, phenytoin, rifampin, carbamazepine; possible ↓efficacy of oral contraceptives

5. Drink plenty of water while taking this medication.  
   Side Effects: nausea, rash, SJS (rare)  
   Drug Interactions: ↑effect of warfarin (monitor INR); ↑ phenytoin level

6. Take with food.

7. Side Effects: GI upset  
   Drug Interactions: ↑digoxin level  
   Contraindications: coadministration with pimozide

8. Side Effects: GI upset, bitter taste  
   Drug Interactions: many potential including: ↓level with rifampin; ↑warfarin effect; ↑ levels of some benzodiazepines, buspirone, carbamazepine, cyclosporine, digoxin, ergots, statins, theophylline, disopyramide  
   Contraindications: coadministration with pimozide

9. Side Effects: usually well-tolerated; headache, dizziness may occur; tendon rupture (rare)  
   Drug Interactions: ↓absorption with antacids, sucralfate, iron, calcium, magnesium (separate dose by 2 hours); ↑level of theophylline, cyclosporine; avoid in patients on Class IA or III antiarrhythmics  
   Contraindications: predisposition to prolonged QT interval; predisposition to seizures; pregnancy; children <18 years

10. May ↑warfarin effect

11. Some evidence suggests that shorter duration (5 to 7 days) may be adequate in the absence of complicating factors such as bronchiectasis.
Self-management Plan of Action

- Is a written tool developed by the physician or respirologist that helps the patient identify early changes in symptoms and determine what action is to be taken to prevent and manage AECOPD.
- Includes: use of pharmacologic agents and non-pharmacologic measures to be taken when patient is feeling well;
  use of SABD for exacerbations; preventing, avoiding, or controlling environmental factors that cause exacerbations;
  how to identify and manage respiratory infection;
  takes into consideration comorbid conditions in the diagnosis and treatment of COPD.
Self-management Plan of Action

Patient Name:

I Feel Well

My Symptoms: I sleep well and my appetite is good. I am able to do my exercises.

My Actions: I avoid things that make my symptoms worse. I plan each day in advance. I take my medications as prescribed. I eat healthy food. I do my exercises on a regular basis.

I Feel Worse (Environment/Stress)

My Symptoms: I am more short of breath than usual. I may cough, wheeze, or have sputum.

My Actions: I use my breathing techniques and try to relax. I avoid what made my symptoms worse. I take _____puffs of____ and repeat in 20 to 45 minutes 2 or 3 times if I need to.

If my symptoms do not improve or get worse, I call my doctor (Tel:_________)

I Feel Worse (Respiratory Infection)

My Symptoms: I am more short of breath than usual. I have more sputum than usual. The sputum is green or yellow.

My Actions: I call my doctor (Tel:_________). I use my rescue inhaler (_________) more often as recommended by my doctor. I take my antibiotic and anti-inflammatory as prescribed by my doctor.

If my symptoms do not improve or get worse, I go to the hospital or medical clinic.

I Feel Much Worse or I Am In Danger

My symptoms are worse or my symptoms have not improved after 48 hours of treatment.

My Actions: I see my doctor or go to the hospital or medical clinic.

If I am extremely short of breath, agitated, confused and/or drowsy or I have chest pain, I call 911 and get emergency medical treatment.
**Abbreviations**

AAT – Alpha-1 Antitripsyn

ABG – Arterial Blood Gases

AECOPD – Acute Exacerbation of COPD

BMI – Body Mass Index

BP – Blood Pressure

CNS – Central Nervous System

COPD – Chronic Obstructive Pulmonary Disease

CrCl – Creatinine Clearance

CVD – Cardiovascular Disease

FEV₁ – Forced Expiratory Volume in 1 Second

FVC – Forced Vital Capacity

GERD – Gastro-esophageal Reflux Disease

HH – HandiHaler

ICS – Inhaled Corticosteroid

inh – inhalations

INR – International Normalized Ratio

K⁺ – potassium

LAAC – Long-acting Anticholinergic

LABA – Long-acting Beta-Agonist

LTOT – Long Term Oxygen Therapy

MAOI – Monoamine Oxidase Inhibitor

MAOI – Mono-amine Oxidase Inhibitor

MDI – Metered Dose Inhaler

MI – Myocardial Infarction

2009 These materials were developed by the clinical subcommittee of the Chronic Disease Network and Access Program of Prince Albert Grand Council and its partners and funded by the Aboriginal Health Transition Fund.
Abbreviations cont’

MRC – Medical Research Council
nebs – nebulizers
NRT – Nicotine Replacement Therapy
PDI – Power Dose Inhaler
QOL – Quality of Life
RTI – Respiratory Tract Infection
SAAC – Short-acting Anticholinergic
SABA – Short-acting Beta-agonist
SJS – Stevens-Johnson Syndrome
SOB – Shortness of Breath
TMJ – Temporomandibular Jaw Syndrome
TMJ – Temporomandibular Joint Syndrome
Bibliography


COPD SCREENING

NAME: ___________________________ DOB: ____________ AGE_______(M) (F)

MEDICATIONS_________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

ALLERGIES: ____________________________

PMHX_________________________________________________________________
________________________________________________________________________

Yearly Immunization for influenza (Y) (N) Pneumococcal Q5yrs (Y) (N)

1. Do you cough regularly? (Y) (N)
2. Do you cough up phlegm regularly? (Y) (N)
3. Do even simple chores make you short of breath? (Y) (N)
4. Do you wheeze when you exert yourself, or at night? (Y) (N)
5. Do you get frequent colds that persist longer than those of other people you know? (Y) (N)

SMOKER (Y) (N) (PAST) EXPOSURE TO 2nd HANDSMOKE (Y) (N)

HOW LONG? _____ # CIGS/DAY _____ # of PACK YEARS_____

SMOKING CESSATION OFFERED? __ Counseling to stop
___ Pharmacologic Intervention
___ Program Referral
___ Pt. Declined

DIAGNOSED WITH COPD? (Y) (N)
# of exacerbations in last year___________ # of hospitalizations_____

VITAL SIGNS: BP _____ P _____ R _____ O2SAT _____ WT. _____ HT. _____
**MRC DYSPNEA SCALE**

1. Normal- Not troubled by breathlessness except with strenuous exercise.

2. Troubled by shortness of breath when hurrying on the level or walking up a slight hill.

3. Walks slower than people of the same age on the level because of breathlessness or has to stop for breath when walking at own pace on the level.

4. Stops for breath after walking about 100 yards (90M) or after a few minutes on the level.

5. Too breathless to leave the house or breathless when dressing or undressing.

**MRC SCORE:** ____________

**SPIROMETRY TESTING**

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>MEASURED</th>
<th>% PREDICTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>FEV1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FVC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FEV1/FVC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**POST BRONCHODILATOR- <0.7 CONFIRMS COPD**

**DIAGNOSIS____________**

**COPD MILD_____ MODERATE_____ SEVERE_____**

**MEDICATION ORDERS:**
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

**INHALER/SPACER TECHNIQUE REVIEWED?** (Y) (N)

**REFFERAL ____________________________________________________________**

**HANDOUTS GIVEN TO PATIENT**
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Signature: _______________________________     Date:  ___________
### COPD (CHRONIC OBSTRUCTIVE PULMONARY DISEASE)

**FLOW SHEET/ ENCOUNTER FORM**

**Adapted from BCMA Flowsheet – May 25, 2009**

<table>
<thead>
<tr>
<th>Co-Morbid Conditions and Other Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
</tr>
<tr>
<td>Atrial Fibrillation</td>
</tr>
<tr>
<td>Cachexia and Malnutrition</td>
</tr>
<tr>
<td>Cancer</td>
</tr>
<tr>
<td>Cataracts</td>
</tr>
<tr>
<td>Congestive Heart Failure</td>
</tr>
<tr>
<td>Glaucoma</td>
</tr>
</tbody>
</table>

**Patient Information**

- **Patient Name**
- **Health # (or Other Unique Patient ID)**
- **Gender**
  - Male
  - Female
- **Phone (Include Area Code)**
- **Birthdate (DD-MM-YYYY)**
- **Chart Number**
- **City**
- **Postal Code**
- **Provider Name**
- **Provider ID #**

### Diagnostic/ Clinical Data, By Date

**Reason for Today's Visit**

- **Scheduled**
- **Urgent**

**Spirometry - FEV1/FVC Post-bronchodilator**

- FEV1: __________ % Predicted

**MRC Dyspnea Scale**

- Enter Value (1-5): __________

**Written Action Plan**

- Developed/Reviewed

### Exacerbations

- # of Exacerbation(s) in Last Year and Date of Last (partial date allowed e.g. 2008, 2008/01)

**Medications Since Last Visit**

- Antibiotics: Yes/No
- Prednisone: Yes/No

**COPD Urgent Care Since Last Visit**

- ER Visits: __________
- Hospital Admissions: __________
- Walk Ins: __________

### Lifestyle

- Current Smoker
  - Current
  - Past
  - 2nd Hand
  - Never

- Ex-Smoker Quit Date (partial date allowed e.g. 2008, 2008/01)

- If Current Smoker, Was Cessation Offered? (check all that apply)
  - Counselling to Stop
  - Pharmacologic Intervention
  - Program Referral
  - PD

**Physical Activity Goals**

- Target Body Mass Index (BMI) Target 19 – 25
  - Height: __________
  - Enter weight (LBS or KG): __________

**Annual Influenza Vaccine**

- Completion: Yes/No/CI/NC/PD

**Pneumococcal Vaccine**

- Completion: Yes/No/CI/NC/PD

### Therapy

- Current Medication (check all that apply)
  - SABD (e.g. Atrovent, Bricanyl, Ventolin)
  - LAAC (e.g. Spiriva)
  - LABA (e.g. Oxeze, Serevent)
  - ICS/LABA (e.g. Advair, Symbicort)
  - Theophylline (e.g. Uniphyll)
  - Other Meds:

**Inhaler/Spacer Technique Reviewed?**

- Yes/No

**O2 Saturation Completed**

- SaO2: __________ %

**Blood Gases**

- PaO2: __________ mmHg
- PaCO2: __________ mmHg

**Oxygen Therapy**

- Continuous
- Nocturnal
- Exercise
- Exer. And Noct.
- None

### Pulmonary Rehabilitation Referral?

- Yes/No/NC

**Other Referrals (check all that apply)**

- COPD Program
- Resp. Specialist
- Cert. Resp. Educator
- Sail O2 Tester
- Dietitian

**Other Referrals:**

- Yes/No/NC/PD

---

**End of Life Issues Discussed**

- Yes/No/NC/PD

---

**CI** – contraindicated

**PD** – patient declined

**NP** – no program available

**TNS** – tried or not suitable
## COPD (CHRONIC OBSTRUCTIVE PULMONARY DISEASE)
### FLOW SHEET/ENCOUNTER FORM

<table>
<thead>
<tr>
<th>PATIENT NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEALTH # (OR OTHER UNIQUE PATIENT ID)</td>
</tr>
<tr>
<td>GENDER</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>PHONE (INCLUDE AREA CODE)</td>
</tr>
<tr>
<td>BIRTHDATE (DD-MMM-YYYY)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHART NUMBER</th>
<th>CITY</th>
<th>POSTAL CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROVIDER NAME</td>
<td>PROVIDER ID #</td>
<td></td>
</tr>
</tbody>
</table>

### COMMENTS

Date:

Date:

Date:
Smoking Cessation Treatment Algorithm

Does the Client Currently Smoke?

No

Did the client once smoke?

No intervention required

Yes

Prevent Relapse*

RELAPSE PREVENTION

Congratulate success
Reinforce decision to quit
Review the benefits of quitting
Assist in resolving any issues around quitting

No

Yes

Is the client now willing to quit?

No

Promote Motivation to Quit

THE 5 R’s of Motivation

Relevance to client
Risks of Smoking
Rewards of Stopping
Roadblocks to stopping
Repetition of the message

Yes

Provide Appropriate Treatment Options

The 5 A’s of Intervention

ASK about smoking
ADVISE to quit and document
ASSESS willingness to make a quit attempt
ASSIST in quit attempt
ARRANGE follow-up

*Relapse prevention interventions are not necessary in the case of the adult who has not smoked for many years.
The 5 R’s of Motivation

**RELEVANCE - 1 minute**
Ask client about how quitting may be personally relevant.
- Longer and better quality of life
- People you live with will be healthier
- Decrease chance of heart attack, stroke or cancer
- Extra money ($$)
- If pregnant, improves chance of healthy baby

**RISKS – 1 minute**
Ask the client about their perception of short-term, long-term and environmental risks of continued use.
- Acute (breathing, asthma, pregnancy)
- Long-term (heart, lungs, overall health)

**REWARDS – 1 minute**
Ask the client about perceived benefits/rewards for quitting tobacco use.
- Health (self & others)
- Sense of smell
- Example to others
- Food taste
- Feel better
- Additional years of life

**ROAD BLOCKS – 3 minutes+**
Ask client about perceived roadblocks to quitting.
- Withdrawal symptoms
- Weight gain
- Depression
- Fear of Failure
- Lack of Support
- Enjoyment of tobacco

**REPITITION – 1 minute+**
Respectfully repeat 5 R’s during each visit, providing motivation and information. Refer client to SMOKERS’ HELPLINE websites [www.smokershelpline.ca](http://www.smokershelpline.ca) or [www.gosmokefree.gc.ca](http://www.gosmokefree.gc.ca). Or call 1 (877) 513-5333 as appropriate.
## PATIENT HEALTH QUESTIONNAIRE (PHQ-9)

**NAME:** __________________________________________  **DATE:** _________________

Over the last two weeks, how often have you been bothered by any of the following problems?

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>Several days</th>
<th>More than half the day</th>
<th>Nearly every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Little interest in doing things</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. Feeling down, depressed or hopeless</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

*STOP*  
*If you checked “more than half the days” or “nearly every day” for at least **ONE** of the above questions please complete the following questions.*

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>Several days</th>
<th>More than half the day</th>
<th>Nearly every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Trouble falling or staying asleep, or sleeping too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. Feeling tired or having little energy</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. Poor appetite or overeating</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. Feeling bad about yourself – or that you are a failure or have let yourself or your family down</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7. Trouble concentrating on things, such as reading the newspaper or watching television</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8. Moving or speaking so slowly that other people could have noticed. Or the opposite- being so fidgety or restless that you have been moving around a lot more than usual</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9. Thoughts that you would be better off dead, or hurting yourself in some way.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Add columns

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

**Total**

10. If you checked off *any* problems how difficult have these problems made it for you to do your work, take care of things at home or get along with people?

<table>
<thead>
<tr>
<th></th>
<th>Not difficult at all</th>
<th>Somewhat difficult</th>
<th>Very Difficult</th>
<th>Extremely difficult</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
</tbody>
</table>

**PHQ-9 is adapted from PRIME MD TODAY, developed by Drs Robert L. Spitzer, Janet B.W. Williams, Kurt Kroenke, and colleagues, with an educational grant from Pfizer Inc. For research information, contact Dr. Spitzer at ris8@columbia.edu. Use of the PHQ-9 may only be made in accordance with the terms of use available at [http://www.pfizer.com](http://www.pfizer.com). Copyright © 1999 Pfizer Inc. All rights reserved. PRIME MD TODAY is a trademark of Pfizer Inc.**
Depression Care Algorithm

Suspect possible depression

‘At-risk’ population

Screen using the PHQ-2

PHQ-9
(for individuals 19 years of age and older*)

Clinical Interview - DSM-IV - TR

- Minimal
  - PHQ-9 score 0-4
  - Almost no depressive symptoms

- Mild
  - PHQ-9 score 5-9
  - Some depressive symptoms, possibly other mood disorder, no Major Depressive Episode

- Moderate
  - PHQ-9 score 10-14
  - Major Depressive Episode (mild)

- Moderately Severe
  - PHQ-9 score 15-19
  - Major Depressive Episode (moderate)

- Severe
  - PHQ-9 score 20-27
  - Major Depressive Episode (severe)

Assess Suicide Risk

Develop supported self-management plan and goals with the patient.

Provide patient with appropriate education materials, such as information about lifestyle changes.
(Examples: diet, exercise, physical activity, drug and alcohol use.)

Patient to contact practice if symptoms worsen.
Consider self-administration of the PHQ-9.

“Watchful waiting”
Follow up with patient within 2-4 weeks to re-evaluate symptoms.
Possibly try focused psychological intervention.

Discuss patient preference for antidepressants.
Psychotherapy or combination of treatment (only if specifically indicated).
Assess suicide risk at each visit.

Offer antidepressants to the patient before psychological intervention.
Discuss combination of treatment.
Assess suicide risk at each visit.

Offer antidepressants to the patient before psychological intervention.
Discuss combination of treatment.
Consider urgent psychiatric consultation if disability is severe and hospitalization may be required.
Assess suicide risk at each visit.

Follow up every 2-6 weeks as appropriate to evaluate treatment response.

IF:

- Drop of >5 in PHQ-9 score, then continue with same treatment.
- Drop of 2-4 points in PHQ-9 score, then consider modifying treatment depending on function and patient preference (e.g., give antidepressant, increase dosage of antidepressant, change antidepressant or add counseling.)
- Increase or <1 point drop in PHQ-9 score, then modify, switch or augment treatment (e.g., give antidepressant, increase dosage of antidepressant, change antidepressant or add counseling.)

Maintenance Phase
PHQ-9<5, Goal: Prevent return of symptoms during current episode. Recall and continue current treatment as appropriate.

Recovery Phase/Remission
PHQ-9<5, Goal: Prevention of new episodes. Recall as appropriate.

This guideline is designed to assist collaborative primary care treatment teams in enhanced depression management. This guideline is not intended to replace a clinician’s judgment or establish a protocol for all patients with a particular condition.
### CO-MORBID CONDITIONS AND OTHER FACTORS

- [ ] *Alcohol Overuse*
- [ ] *Substance Abuse*
- [ ] Anxiety
- [ ] *Bipolar*
- [ ] Past Suicide Attempt
- [ ] Presence of Chronic Physical Condition

*If these conditions or factors are checked off, treat this patient for these conditions or factors prior to beginning treatment for depression.*

### PATIENT NAME

- [ ] Gender: Male
- [ ] Female
- [ ] Undifferentiated

### HEALTH # (OR OTHER UNIQUE PATIENT ID)

### PHONE (INCLUDE AREA CODE)

### BIRTHDATE (DD-MM-YYYY)

### CHART NUMBER

### CITY

### POSTAL CODE

### PROVIDER NAME

### PROVIDER ID #

### NEW DATA

#### DIAGNOSTIC/ CLINICAL DATA, BY DATE

**REVIEW**

* MANDATORY FIELDS

#### MOST RECENT DATA

**DATE OF VISIT:**

**#ER-visits:**

**#Hospital admissions:**

**#Walk-ins:**

**Changes in:**

- Mood
- Energy
- Sleep
- Work
- Enjoyment of Activities
- Involvement in Family Activities
- Side Effects from Medication

**Relapse**

RISK FACTORS FOR RELAPSE (check all that apply)

**Recovery Phase** (Improving: PHQ-9 is the same or lower in the last month; not improving: PHQ-9 increased by ≥ 2 in last month; maintenance: at target score and in ongoing treatment or support; recovery: PHQ-9 < 5)

**Score from Question 1-9**

**Result from Question 10**

**Remission**

ASSESSED (If positive, document management plan and refer to mental health specialist)

**Suicide Risk**

MANAGEMENT PLAN (DOCUMENTED)

**Antidepressant Medication**

**Antidepressant Medication Reviewed**

**Mental Health Services Referral**

**Psychiatry Referral**

**Private Practice Psychologist/Social Worker**

**Community Service/Other Program Referral**

**Education – Community Resources and Support** (check all that apply)

**Self-Management Goals**

**Goals and Follow-up**

**Next Follow-up Visit** (enter one)

**If No Follow-up Planned, Indicate Reason**

**PD** = patient declined

**NP** = no program available

**CI** = contraindicated

**TNS** = tried or not suitable

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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

<table>
<thead>
<tr>
<th>Complications</th>
<th>Why it effects food intake</th>
<th>What to do</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shortness of breath or swallowing air</td>
<td>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.</td>
<td>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.</td>
</tr>
<tr>
<td>Problem</td>
<td>Prevention and Solutions</td>
<td></td>
</tr>
<tr>
<td>-------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Bloating or gas</td>
<td>• People may experience more bloating or gas when they have COPD</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Avoid overeating; eat smaller meals</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Avoid foods that cause bloating or gas (may vary depending on the person) such as</td>
<td></td>
</tr>
<tr>
<td></td>
<td>broccoli, cabbage, beans, cauliflower, radishes, onions, peas, corn, turnips and fried,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>greasy or heavily spiced foods</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Eat slowly, chew food well and avoid gulping</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Avoid drinking while eating to avoid swallowing air</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Limit intake of carbonated beverages</td>
<td></td>
</tr>
<tr>
<td>Thick mucus</td>
<td>• Alters taste sensations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Drink 6 - 8 glasses of non-caffeinated fluid to keep mucus thin and easy to cough up</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Milk and dairy products do not produce more mucus but can coat mucus already present.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Try drinking half a cup of 100% orange juice after having dairy products to help thin</td>
<td></td>
</tr>
<tr>
<td></td>
<td>mucus.</td>
<td></td>
</tr>
<tr>
<td>Dental Problems</td>
<td>• Can cause mouth pain and make it more difficult to eat</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Alterations should be made in food textures/consistency to aid in chewing and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>swallowing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• For example, try fish instead of pork chops or cooked vegetables instead of raw</td>
<td></td>
</tr>
<tr>
<td></td>
<td>vegetables</td>
<td></td>
</tr>
<tr>
<td>Fatigue</td>
<td>• People may feel too tired to eat or lack the energy needed for eating</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• This causes some people to shorten the length of time spent eating</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Rest before meals</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Eat smaller more frequent meals</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Eat your largest meal when you have the most energy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Make easy to prepare meals and make extra to freeze, if possible, for times of</td>
<td></td>
</tr>
<tr>
<td></td>
<td>increased fatigue</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Use oven or microwave cooking rather than stovetop. Some people may find it tiring to</td>
<td></td>
</tr>
<tr>
<td></td>
<td>stand at the stovetop.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Ask family to help with meal preparation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Make appropriate referrals to home care or meals on wheels, if available</td>
<td></td>
</tr>
</tbody>
</table>

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.
<table>
<thead>
<tr>
<th>Reliance on oxygen</th>
<th>• Food intake may be limited when reliant on oxygen</th>
<th>• Use oxygen while eating if needed or use oxygen when finished eating</th>
</tr>
</thead>
</table>
| Constipation                                                                      | • People may experience more constipation when they have COPD | • 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 “Foods with Fibre”)  
• 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

\[
\text{% weight change} = \frac{\text{usual body weight} - \text{actual body weight}}{\text{usual body weight}} \times 100
\]

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


Cerrato PL. *The special nutritional needs of a COPD patient.* RN. 1987; 50(11): 75-76


Fernandes AC. & Bezerra OMPA. *Nutrition Therapy for Chronic Obstructive Pulmonary Disease and Related Nutritional Complications.* J Bras Pneumol. 2006; 32(5): 461-71


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


Vancouver Island Health Authority – Lung Health Program. *Nutrition Tips for COPD.* 2004
6.1 Resources
**Nutrition Tips for COPD**

COPD = Chronic Obstructive Pulmonary Disease

**GENERAL TIPS:**

A healthy diet helps to keep your lungs and body strong and it may help prevent illness

1. Eat food from all 4 food groups:
   - Vegetables and Fruit
   - Grain Products
   - Milk and Alternatives
   - Meat and Alternatives

2. Avoid foods that have little nutritional value such as chips, pop, candy, cookies, bacon, hotdogs, french fries, etc.

3. Eat small, frequent meals and snacks (5 - 6 meals/snacks)

4. Eat your main meal when you have the most energy

5. Drink beverages after meals, so you do not fill up on liquids

6. Limit salt intake (too much salt can cause you to retain fluid making it harder to breathe):
   - Use herbs or no-salt spices like pepper, onion powder, basil, etc.
   - Avoid adding salt to food when cooking and at the table
   - When reading labels avoid foods with more than 300 mg of sodium (salt)

7. Use your oxygen while eating and after meals (helps to digest food)
Nutrition Tips for COPD

TIPS TO SAVE TIME AND ENERGY:
- Make easy to prepare one-dish meals; make extra and freeze for later
- Use the oven or microwave if you find stove-top cooking tiring
- Plan and prepare ahead as much as possible
- Ask for help from family and friends

HEALTHY SNACKS:
- Crackers and cheese or peanut butter – (try “baked” crackers)
- Rice crackers
- Pretzels, plain popcorn
- Homemade Muffins
- Baked Bannock
- Yogurt
- Milk puddings
- Fruit smoothies – blend together milk, yogurt and fruit!
- Fruit – fresh, or canned – serve with a dip made from yogurt
- Vegetables and dip – try a low fat salad dressing
- Half a sandwich

FLUIDS:
- Enough fluid is needed to hydrate the body
- Fluid helps keep mucus thin and easy to cough up
- Try to drink 6 - 8 cups of non-caffeinated fluids such as water, milk, 100% juice, de-caffeinated tea, soup, etc.
- Alcohol can interact with medications, might slow your breathing and make it difficult to cough up mucus
- Talk to your doctor before drinking alcohol

COPD = Chronic Obstructive Pulmonary Disease

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

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Available on the Chronic Disease Network and Access Program website at: www.ehealth-north.sk.ca
## Common Complications & Solutions in COPD

COPD = Chronic Obstructive Pulmonary Disease

<table>
<thead>
<tr>
<th>Complications</th>
<th>What to do</th>
</tr>
</thead>
</table>
| **Shortness of breath or swallowing air** | • Eat 5 - 6 smaller meals per day. This keeps the stomach from filling up too much and gives the lungs room to expand.  
• Choose 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  
• Rest and use bronchodilators before meals  
• Try drinking liquids at the end of the meal. Drinking before or during the meal may cause feelings of fullness or bloating.  
• Eat while sitting up to make it easier to breathe  
• If you use oxygen, wear it while eating |
| **Bloating or gas**                  | • Avoid overeating  
• Avoid foods that cause gas or bloating such as broccoli, cabbage, beans, cauliflower, radishes, onions, beans, peas, corn, turnips. This may vary depending on the person. Avoid fried, greasy or heavily spiced foods.  
• Eat slowly, chew food well and avoid gulping  
• Avoid drinking while eating to avoid gas swallowing  
• Limit intake of pop |
| **Thick mucus**                      | • Drink 6 - 8 glasses of non-caffeinated beverages to keep mucus thin and easy to cough up  
• Milk and dairy do not produce more mucus, but can coat mucus already present. Try drinking half a cup of 100% orange juice after having dairy to help thin mucus. |
<table>
<thead>
<tr>
<th>Complications</th>
<th>What to do</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dental Problems</td>
<td>• If you are having problems chewing or swallowing you may need a soft or a pureed (mashed) diet</td>
</tr>
<tr>
<td></td>
<td>![Dental Problems Image]</td>
</tr>
</tbody>
</table>
| Fatigue (tired)       | • Rest before meals  
• Eat smaller more frequent meals  
• Make easy to prepare meals and make extra to freeze, if possible, for times when you feel tired  
• Use the oven or microwave to cook rather then stovetop  
• Ask family to help with meal preparation |
|                       | ![Fatigue (tired) Image]                                                                                                                                 |
| Reliance on oxygen    | • Wear your breathing mask while eating if oxygen is needed  
• Use your oxygen when finished eating                                                                                       |
| Constipation          | • Drink 6 - 8 cups of fluids per day  
• Increase fibre intake (such as whole grains, beans, vegetables and fruits, bran cereals, whole grain pasta and rice)  
• Aim for 25 - 35 grams of fibre per day  
• You may need to add extra fibre to foods (bran)  
• Exercise if you can                                                                                                              |
|                       | ![Constipation Image]                                                                                                                                 |

COPD = Chronic Obstructive Pulmonary Disease
Foods with Fibre

Why is fibre good for you?
High fibre foods:
• Help with constipation
• Lower cholesterol levels
• Controls blood sugars
• Helps you feel full so you eat less

How much fibre do I need?
• Aim for 25 – 35 grams of fibre per day

<table>
<thead>
<tr>
<th>Food</th>
<th>Serving</th>
<th>Fibre (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bran Flakes</td>
<td>1 cup</td>
<td>12 g</td>
</tr>
<tr>
<td>Kidney Beans</td>
<td>2/3 cup</td>
<td>12 g</td>
</tr>
<tr>
<td>Pork and Beans</td>
<td>2/3 cup</td>
<td>10 g</td>
</tr>
<tr>
<td>Raisin Bran cereal</td>
<td>1 cup</td>
<td>7 g</td>
</tr>
<tr>
<td>Shreddies cereal</td>
<td>1 cup</td>
<td>6 g</td>
</tr>
<tr>
<td>Mini Wheat's cereal</td>
<td>1 cup</td>
<td>5 g</td>
</tr>
<tr>
<td>Whole Wheat Pasta</td>
<td>1 cup</td>
<td>5 g</td>
</tr>
<tr>
<td>Peas</td>
<td>Half a cup</td>
<td>4 g</td>
</tr>
<tr>
<td>Mixed Vegetables</td>
<td>Half a cup</td>
<td>3 g</td>
</tr>
<tr>
<td>Whole Wheat Bread</td>
<td>1 slice</td>
<td>2.5 g</td>
</tr>
<tr>
<td>Oatmeal (quick oats)</td>
<td>2/3 cup</td>
<td>2.5 g</td>
</tr>
<tr>
<td>Apple</td>
<td>1 apple</td>
<td>2.5 g</td>
</tr>
<tr>
<td>Orange</td>
<td>1 orange</td>
<td>2.5 g</td>
</tr>
<tr>
<td>Broccoli</td>
<td>Half a cup</td>
<td>2 g</td>
</tr>
<tr>
<td>Carrots</td>
<td>Half a cup</td>
<td>2 g</td>
</tr>
<tr>
<td>Canned Corn</td>
<td>Half a cup</td>
<td>2 g</td>
</tr>
<tr>
<td>Potato (no skin)</td>
<td>1 potato</td>
<td>2 g</td>
</tr>
<tr>
<td>Blueberries</td>
<td>Half a cup</td>
<td>2 g</td>
</tr>
<tr>
<td>Banana</td>
<td>1 banana</td>
<td>2 g</td>
</tr>
<tr>
<td>Tomato</td>
<td>1 tomato</td>
<td>1.5 g</td>
</tr>
<tr>
<td>Brown Rice</td>
<td>Half a cup</td>
<td>1.5 g</td>
</tr>
</tbody>
</table>
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Available on the Chronic Disease Network and Access Program website at: www.ehealth-north.sk.ca
Some people with Lung Disease need to gain weight

- Extra energy and protein in your diet may help stop weight loss and may help you to gain some weight back

**General Tips:**

- Eat from all 4 food groups
- Eat small frequent meals
- Try having snacks between meals
- Avoid filling up on liquids like tea, coffee, broth and juice
- Limit foods that have little nutritional value such as chips, pop, candy, cookies, bacon, hotdogs, french fries, etc.
- Do not use foods that are labelled light, calorie reduced or low calorie
- Try eating high protein and energy foods at each meal

### High Protein Foods

- Cheese
- Powdered milk
- Eggs
- Meat
- Yogurt
- Peanut Butter
- Nuts and seeds (non-salted)
- Beans (brown, kidney, white etc)
- Fish

### High Energy Foods

- Cheese
- Whole milk
- Non-hydrogenated margarine & oil
- Salad dressing
- Mayonnaise
- Cream soups

**Tips for adding protein and energy to your diet**

- Melt cheese on meats, casseroles, vegetables and add to sandwiches, soups and salads
- Powdered milk can be added to cereal, mashed potatoes, soup, sauces, casseroles, scrambled eggs and puddings
- Add beans to soups and casseroles
- Add non-hydrogenated margarine to sandwiches, crackers, potatoes, noodles and vegetables
High Energy & Protein Diet

High protein and energy snack ideas

- Cheese and crackers
- Peanut butter and crackers
- Bagel/bun with peanut butter or cream cheese
- Bannock with non-hydrogenated margarine
- Vegetables with dip
- Hard boiled egg
- Half a sandwich (tuna, egg, meat, peanut butter)
- Pudding made with milk
- Yogurt with granola
- Cereal with whole milk
- Tuna and crackers
- Milkshakes
- Nutrition supplements

If you are not well enough to eat a meal try a healthy shake instead!

<table>
<thead>
<tr>
<th>High Energy Milk</th>
<th>High Protein Shake</th>
<th>Yogurt &amp; Fruit Shake</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 cup whole (homogenized) milk</td>
<td>1 packet of Carnation Instant Breakfast Essentials</td>
<td>1 cup of fruit</td>
</tr>
<tr>
<td>1/4 cup of powdered whole milk</td>
<td>1 cup whole (homogenized) milk</td>
<td>1 cup of fruit flavored yogurt</td>
</tr>
<tr>
<td></td>
<td>1/4 cup of powdered whole milk</td>
<td>1 cup of whole milk</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 ice cubes</td>
</tr>
<tr>
<td>Combine ingredients in blender</td>
<td>Combine ingredients in blender</td>
<td>Blend the fruit, milk and yogurt in a blender</td>
</tr>
<tr>
<td>Makes 1 serving</td>
<td>Makes 1 serving</td>
<td>Add ice and blend until mixed well</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Makes 2 servings</td>
</tr>
</tbody>
</table>

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Available on the Chronic Disease Network and Access Program website at: www.ehealth-north.sk.ca
A healthy weight can:

- Improve breathing ability in people with Lung Disease
- Help to prevent or manage diabetes
- Improve blood sugars, blood pressure and cholesterol
- Reduce the risk of heart attack or stroke
- Improve your overall well-being and energy levels

What is a Healthy Weight Loss?

- Choosing healthy foods more often
- Watching the amount of food we eat
- Being physically active everyday

- Healthy weight loss is 1 - 2 pounds (0.45 - 0.9 kg) per week
- Even a small weight loss of 5 - 10% of your body weight can make a big difference in your health

Tips for Losing Weight:

1. Enjoy a wide variety of foods
   - Eat from all 4 food groups

2. Limit high fat and sugar foods
   - For example: hotdogs, bologna, chips, candy, chocolate, juice, pop, fast foods, fried foods, chinese food, french fries, lard, butter, battered meats, etc.

3. Beware of portion sizes (see back side of handout)

4. Eat more fibre
   - Fibre keeps you full longer. Try foods like whole grain breads and cereals, vegetables, fruit, beans, lentils, brown rice, brown pasta, etc.

5. Think about your drink
   - Beverages can have a lot of extra calories. Watch how much you drink of juice, pop, coffee with cream and sugar, iced coffee, slush, energy drinks, sport drinks, etc.

6. Eat when you are hungry
   - Let your body tell you when you are actually hungry

7. Eat regular meals
   - Eating 3 meals a day helps to keep your metabolism up

8. Take time to eat
   - Eating more slowly helps you to know when you are full

9. Rethink your snack
   - Pick foods from the 4 food groups for snacks. Watch out for high calorie snacks like chips, chocolate bars, cookies, donuts, etc.

10. Be physically active
    - Aim to be active for half an hour every day. This means getting your heart rate up and breathing harder
Tips for Weight Loss

What should a portion look like?

- **Fruit**: Should be the size of a tennis ball
- **Meat**: Should be the size of a deck of cards
- **Starches**: Should be the size of your fist
- **Fats**: Should be the size of the tip of your thumb

- **Vegetables**: Should be 2 handfuls or half your plate

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Why is it important to reduce your salt intake?

- Eating too much salt can cause your body to retain water making breathing more difficult for people with Lung Disease
- Having too much salt can make your blood pressure go up and increase your risk for heart disease
- Having high blood pressure can damage your kidneys

How to cut back on the salt in your diet:

- 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 sodium per serving
- Eat less processed, packaged and fast foods

How much salt do I need?

- Your goal is to keep your salt intake under 2300 mg (1 tsp)

Salt Substitutes:

- Salt substitutes are not for everyone. You should check with your doctor or dietitian before using a salt substitute.

Try this recipe to help season your foods

No-Salt Seasoning

- 5 tsp onion powder
- 1 tbsp garlic powder
- 1 tbsp paprika
- 1 tbsp dry mustard
- 1 tsp dry thyme
- Half a tsp pepper
- Half a tsp celery seed

Directions:

1. Combine all ingredients in a small jar with a shaker top
2. Use for seasoning fish, poultry, cooked vegetables, soup and stews or place it on the table to use individually
Tips to Reduce Salt Intake

What foods are low in salt?

- Fresh or frozen fruits and vegetables
- Whole grain breads, buns, cereals, rice, pasta and bannock
- Lentils, beans and barley
- Milk, yogurt and block cheese
- Fresh or frozen meats, wild meats, fish and chicken
- Eggs
- Peanut butter
- Unsalted nuts

What foods are high in salt?

- French fries and potato chips
- Vegetable juices
- Canned or dried soups and instant noodles
- Canned vegetables and instant potatoes (try rinsing your canned vegetables with water before eating)
- Pickles, olives and sauerkraut
- Nachos, pretzels, popcorn, salted nuts and crackers
- Canned sauces, instant rice and pasta mixes
- Instant oatmeal
- Cheese slices and cheese spread
- Deli meats like ham, pepperoni, salami, bologna and beef jerky
- Hotdogs, smokies, sausages, bacon and canned ham
- Pickled foods
- Condiments like sea salt, seasoning salt, garlic salt, ketchup, mustard, BBQ sauce, soy sauce, teriyaki and salad dressings

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**Tips to Reduce Salt Intake**

**Reading a Label:**

- When reading an ingredient list on a food label salt can be called salt, sodium or soda
- Monosodium glutamate also contains salt
- If the term salt, sodium or soda is listed in the first three ingredients or listed more than 3 times this food is considered a high salt food
- Choose foods with less than 10% (300 mg) sodium

**How much salt do you get in a day?**

<table>
<thead>
<tr>
<th>Food Item</th>
<th>Salt Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 cup instant noodles</td>
<td>730 mg</td>
</tr>
<tr>
<td>Fried Chicken (1 thigh)</td>
<td>1020 mg</td>
</tr>
<tr>
<td>Egg roll (1)</td>
<td>250 mg</td>
</tr>
<tr>
<td>Sweet and sour chicken balls (3)</td>
<td>390 mg</td>
</tr>
<tr>
<td>1 cup chicken fried rice</td>
<td>800 mg</td>
</tr>
<tr>
<td>1 cup chicken chow mein</td>
<td>982 mg</td>
</tr>
<tr>
<td>1 slice of pizza (deluxe)</td>
<td>629 mg</td>
</tr>
<tr>
<td>Hotdog (1)</td>
<td>670 mg</td>
</tr>
<tr>
<td>1 sausage</td>
<td>400 mg</td>
</tr>
<tr>
<td>2 slices bologna</td>
<td>620 mg</td>
</tr>
<tr>
<td>3 slices of bacon</td>
<td>550 mg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Salt Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 tsp of salt</td>
<td>2300 mg</td>
</tr>
<tr>
<td>1 tsp sea salt</td>
<td>2300 mg</td>
</tr>
<tr>
<td>1 tbsp of soy sauce</td>
<td>1230 mg</td>
</tr>
<tr>
<td>1 tsp garlic salt</td>
<td>1480 mg</td>
</tr>
<tr>
<td>1 large pickle</td>
<td>830 mg</td>
</tr>
<tr>
<td>1 cup tomato juice</td>
<td>690 mg</td>
</tr>
<tr>
<td>1 tbsp of ketchup</td>
<td>170 mg</td>
</tr>
<tr>
<td>60 ml gravy</td>
<td>330 mg</td>
</tr>
<tr>
<td>1 tbsp BBQ sauce</td>
<td>130 mg</td>
</tr>
<tr>
<td>1 tbsp teriyaki sauce</td>
<td>700 mg</td>
</tr>
<tr>
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<td>500 mg</td>
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<tr>
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<td>310 mg</td>
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</tbody>
</table>

**Nutrition Facts Valeur nutritive**

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Amount</th>
<th>% Daily Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium / Sodium</td>
<td>860 mg</td>
<td>36 %</td>
</tr>
<tr>
<td>Carbohydrate / Glucides</td>
<td>53 g</td>
<td>18 %</td>
</tr>
<tr>
<td>Fibre / Fibres</td>
<td>4 g</td>
<td>16 %</td>
</tr>
<tr>
<td>Sugars / Suores</td>
<td>6 g</td>
<td></td>
</tr>
<tr>
<td>Protein / Protéines</td>
<td>15 g</td>
<td></td>
</tr>
<tr>
<td>Vitamin A / Vitamine A</td>
<td>45 g</td>
<td></td>
</tr>
<tr>
<td>Vitamin C / Vitamine C</td>
<td>4 g</td>
<td></td>
</tr>
<tr>
<td>Calcium / Calcium</td>
<td></td>
<td>20 %</td>
</tr>
<tr>
<td>Iron / Fer</td>
<td></td>
<td>20 %</td>
</tr>
</tbody>
</table>

**Calories / Calories**: 440

**Fat / Lipides**: 19 g (29 %)
**Saturated / Saturés**: 4 g (21 %)
**Trans / Trans**: 0.2 g

**Cholesterol / Cholestérol**: 35 mg

**How much salt do you get in a day?**

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GOOD BONE HEALTH:

• People with Lung Disease are at risk for osteoporosis if they have used corticosteroids for a long time

• Osteoporosis is a disease where bones become weak and more breakable

• You need 1200 mg of calcium and 1000 IU of vitamin D every day

• If you are not getting enough calcium from foods you may need a supplement

• Everyone should take a vitamin D supplement

<table>
<thead>
<tr>
<th>Food</th>
<th>Serving Size</th>
<th>Calcium Content</th>
<th>Vit D content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk (canned and carton)</td>
<td>1 cup</td>
<td>300 mg</td>
<td>100 IU</td>
</tr>
<tr>
<td>Chocolate milk</td>
<td>1 cup</td>
<td>300 mg</td>
<td>100 IU</td>
</tr>
<tr>
<td>Soy milk with calcium</td>
<td>1 cup</td>
<td>300 mg</td>
<td>100 IU</td>
</tr>
<tr>
<td>Yogurt</td>
<td>3/4 cup</td>
<td>400 mg</td>
<td>55 IU</td>
</tr>
<tr>
<td>Cheese</td>
<td>1.5 oz (size of 2 dice)</td>
<td>360 mg</td>
<td>4 IU</td>
</tr>
<tr>
<td>Pudding made with milk</td>
<td>Half a cup</td>
<td>140 mg</td>
<td>50 IU</td>
</tr>
<tr>
<td>Calcium fortified orange juice</td>
<td>Half a cup</td>
<td>185 mg</td>
<td>0</td>
</tr>
<tr>
<td>Sardines with bones</td>
<td>1 can (106 g)</td>
<td>400 mg</td>
<td>100 IU</td>
</tr>
<tr>
<td>Salmon with bones</td>
<td>75 g (size of palm)</td>
<td>200 mg</td>
<td>0</td>
</tr>
<tr>
<td>Broccoli</td>
<td>Half a cup</td>
<td>20 mg</td>
<td>0</td>
</tr>
<tr>
<td>Almonds</td>
<td>1/4 cup</td>
<td>100 mg</td>
<td>0</td>
</tr>
<tr>
<td>Egg Yolks</td>
<td>1 large egg</td>
<td>0</td>
<td>15 IU</td>
</tr>
<tr>
<td>Fish</td>
<td>75 g (size of palm)</td>
<td>0</td>
<td>60 - 200 IU</td>
</tr>
<tr>
<td>Margarine</td>
<td>1 tsp</td>
<td>0</td>
<td>25 IU</td>
</tr>
</tbody>
</table>

* During the summer months your skin can make vitamin D from the sun
* To make vitamin D you need to be outside for a short time with some skin showing
* The darker your skin is the longer it takes to make vitamin D
* People over 50 make less vitamin D from the sun
* During the fall and winter we cannot make vitamin D and need to take a supplement
Why Read a Nutrition Label?

- Helps you to make better food choices
- Helps you to choose foods with less or more of some nutrients
- Helps you compare foods

Reading a Nutrition Label

1. Serving Size
   - This is the amount most people eat of the food. The rest of the label is based on this amount. Always compare the serving size to how much you actually eat.

2. Calories
   - Calories tell us how much energy you get from one serving of that food.

3. Choose foods with LESS:
   - Fat
   - Saturated Fat
   - Trans Fat
   - Cholesterol
   - Sodium (salt)
   - Sugar

   - Look for low % Daily Values for these nutrients as too much can increase your risk for heart disease and diabetes

4. Choose foods with MORE:
   - Fibre
   - Vitamin A and C
   - Calcium and iron

   - Look for high % Daily Values of these nutrients.
What to Look for on a Nutrition Label

1. Fat
   - Eating too much fat, saturated fat and trans fat can increase your risk for heart disease and obesity
   - Saturated and trans fat can cause fat to build up in the blood vessels
   - Choose foods with:
     - 10 g or less of total fat (15% Daily Value)
     - 2 g or less of saturated fat
     - 0 g or minimal trans fat

2. Sodium
   - Sodium is another word for salt
   - Sodium helps to balance the fluids in our body
   - Too much salt can be harmful and may cause high blood pressure
   - Choose foods with:
     - 300 mg or less of sodium (10% Daily Value)

3. Fibre
   - Fibre helps us to stay full longer, which can help you lose weight
   - Fibre helps to control blood sugars and lower cholesterol levels
   - Keeps us regular
   - Choose foods with:
     - 2 g or more of fibre (8% Daily Value)

4. Sugar
   - Too much sugar can cause weight gain and dental cavities
   - Being overweight increases your risk for heart disease and diabetes
   - Choose foods with:
     - 12 g or less of sugar

5. Vitamins
   - Vitamin A is important for vision and skin health
   - Vitamin C helps your body fight infections

5. Minerals
   - Calcium is important for keeping your bones and teeth healthy
   - Iron helps your red blood cells carry oxygen throughout your body

Nutrition Facts

<table>
<thead>
<tr>
<th>Amount Per Serving</th>
<th>Calories from Fat % Daily Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calories 168</td>
<td></td>
</tr>
<tr>
<td>Total Fat 10g</td>
<td>16%</td>
</tr>
<tr>
<td>Saturated Fat 7g</td>
<td>33%</td>
</tr>
<tr>
<td>Trans Fat</td>
<td></td>
</tr>
<tr>
<td>Cholesterol 27mg</td>
<td>9%</td>
</tr>
<tr>
<td>Sodium 122mg</td>
<td>5%</td>
</tr>
<tr>
<td>Total Carbohydrate 11g</td>
<td>4%</td>
</tr>
<tr>
<td>Dietary Fiber 0g</td>
<td>0%</td>
</tr>
<tr>
<td>Sugars 11g</td>
<td></td>
</tr>
<tr>
<td>Protein 9g</td>
<td></td>
</tr>
<tr>
<td>Vitamin A 10%</td>
<td></td>
</tr>
<tr>
<td>Vitamin C 5%</td>
<td></td>
</tr>
<tr>
<td>Calcium 33%</td>
<td></td>
</tr>
<tr>
<td>Iron 1%</td>
<td></td>
</tr>
</tbody>
</table>

If you have diabetes, look at how much carbohydrate is in your foods. Try to pick foods with a lower amount of this nutrient as eating too much can cause blood sugars to go too high.