COPD Toolkit
Dear Doctor:

L.A. Care Health Plan is pleased to provide you with this copy of the COPD Quality Improvement Toolkit. As you know, COPD is a major cause of mortality and disability in the United States, yet it is often under-diagnosed and not optimally controlled. An estimated 24 million adults have COPD, 12 million physician-diagnosed and approximately 12 million remain undiagnosed.\(^1\) COPD represents an important public health challenge that is both preventable and treatable.

Evidence-based guidelines now recommend spirometry for patients with suspected COPD to confirm the diagnosis, as well as for patients with an established diagnosis to monitor disease progression and effectiveness of therapy. This toolkit offers clinical guidelines and patient education materials to assist you in the care of your patients.

L.A. Care Health Plan is taking an active role in addressing this personal and public health challenge. This toolkit is an example of our efforts to assist you with the evaluation and management of this condition. More effective diagnosis and treatment of COPD can improve patients’ quality of life, and reduce avoidable ER visits and hospitalizations.

You may need to obtain prior authorization from your IPA(s) or provider group for spirometry testing. Attached is a list of CPT codes for Spirometry that may be helpful.

We hope you find the enclosed guidelines and patient education materials useful. We urge you to utilize the information and resources we have provided and to join us in the effort to improve COPD treatment practices, including adding spirometry to the assessment and management of your patients.

Thank you for joining us in this effort. Please contact Maria A. Casias, RN at (213) 694-1250 ext. 4312 or email mcasias@lacare.org or Christine Chueh, RN at (213) 694-1250 ext. 4710 or email cchueh@lacare.org if you have questions, would like to provide feedback, or would like further information.

Sincerely,

Jennifer Sayles, MD, MPH
Medical Director,
Quality Improvement & Health Assessment

\(^1\) Morbidity & Mortality: 2009 Chart book on Cardiovascular, Lung, and Blood Disease
<table>
<thead>
<tr>
<th>CPT</th>
<th>Description</th>
<th>Complete Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>94010</td>
<td>Breathing Capacity Test</td>
<td>Spirometry, including graphic record, total and timed vital capacity, expiratory flow rate measurement(s), with or without maximal voluntary ventilation</td>
</tr>
<tr>
<td>94014</td>
<td>Patient Recorded Spirometry</td>
<td>Patient-initiated spirometric recording per 30 days; reinforced education, transmission of spirometric tracing, data capture, analysis of transmitted data, periodic recalibration and physician review and interpretation</td>
</tr>
<tr>
<td>94015</td>
<td>Patient Recorded Spirometry</td>
<td>Patient-initiated spirometric recording per 30 day period of time; (includes hook-up, reinforced education, data transmission, data capture, trend analysis, and periodic recalibration)</td>
</tr>
<tr>
<td>94016</td>
<td>Review Patient Spirometry</td>
<td>Patient-initiated spirometric recording per 30 day period of time; physician review and interpretation only</td>
</tr>
<tr>
<td>94060</td>
<td>Bronchodilation Responsiveness, Pre &amp; Post Bronchodilator Administration</td>
<td>Bronchodilation responsiveness, spirometry as 94010, before and after bronchodilator administration</td>
</tr>
<tr>
<td>94070</td>
<td>Bronchospasm Provocation Evaluation, Multiple Spirometric Determinations with Administered Agents</td>
<td>Bronchospasm provocation evaluation, multiple spirometric determinations as in 94010, with administered agents (eg, antigen[s], cold air, methacholine)</td>
</tr>
<tr>
<td>94375</td>
<td>Respiratory Flow Volume Loop</td>
<td>Respiratory flow volume loop</td>
</tr>
<tr>
<td>94620</td>
<td>Pulmonary Stress Test/Simple</td>
<td>Pulmonary Stress testing; simple (eg, 6 minute walk test, prolonged exercise test for bronchospasm with pre-and post-spirometry and oximetry)</td>
</tr>
</tbody>
</table>
# COPD PROVIDER RESOURCES

## Contents

### A. EVALUATION AND MANAGEMENT GUIDELINES

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>A Pocket Guide for Primary Care Specialists</td>
<td>Prime Education, Inc.</td>
</tr>
<tr>
<td>3</td>
<td>Quick Glance Guide to COPD Guidelines</td>
<td>American Lung Association (ALA)</td>
</tr>
<tr>
<td>4</td>
<td>COPD Essentials for Health Professionals</td>
<td>US Dept of Health and Human Services</td>
</tr>
<tr>
<td>5</td>
<td>Spirometry – The Standard for Diagnosing COPD</td>
<td>ALA</td>
</tr>
<tr>
<td>6</td>
<td>Quick Glance Guide to Spirometry</td>
<td>ALA</td>
</tr>
<tr>
<td>7</td>
<td>Differential Diagnosis of COPD</td>
<td>ALA</td>
</tr>
</tbody>
</table>

### B. TREATMENT RESOURCES

<table>
<thead>
<tr>
<th></th>
<th>Use of Medications in Stable COPD</th>
<th>ALA</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Quick Glance Guide to Oxygen Therapy</td>
<td>ALA</td>
</tr>
<tr>
<td>3</td>
<td>Inpatient Management of Acute Exacerbation</td>
<td>ALA</td>
</tr>
</tbody>
</table>

### C. CARE MANAGEMENT

<table>
<thead>
<tr>
<th></th>
<th>COPD Care Management Assessment</th>
<th>ALA</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>COPD Care Track</td>
<td>ALA</td>
</tr>
<tr>
<td>3</td>
<td>COPD Action Plan</td>
<td>ALA</td>
</tr>
</tbody>
</table>

### D. ADDITIONAL RESOURCES

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Guidelines for Treating Tobacco Use</td>
<td>County of LA Public Health Tobacco Control &amp; Prevention Program</td>
</tr>
</tbody>
</table>
## E. MEMBER EDUCATION

<table>
<thead>
<tr>
<th></th>
<th>Contents</th>
<th>Material Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>COPD  What You Need To Know</td>
<td>L.A. Care Health Education</td>
</tr>
<tr>
<td></td>
<td><a href="http://www.lacare.org/providers/resources/healtheducation">http://www.lacare.org/providers/resources/healtheducation</a></td>
<td>(English &amp; Spanish)</td>
</tr>
<tr>
<td>2</td>
<td>COPD: Using Inhalers</td>
<td>Krames/L.A. Care</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(English &amp; Spanish)</td>
</tr>
<tr>
<td>3</td>
<td>COPD  Causes, Signs, Your Care</td>
<td><a href="http://www.healthinfotranslations.com">www.healthinfotranslations.com</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(English &amp; Spanish)</td>
</tr>
<tr>
<td>4</td>
<td>Patient’s Guide to Stop Smoking</td>
<td>L.A. Care</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(English &amp; Spanish)</td>
</tr>
</tbody>
</table>
Diagnosis and Management of Stable Chronic Obstructive Pulmonary Disease: A Clinical Practice Guideline Update from the American College of Physicians, American College of Chest Physicians, American Thoracic Society, and European Respiratory Society

Amir Qaseem, MD, PhD, MHA; Timothy J. Wilt, MD, MPH; Steven E. Weinberger, MD; Nicola A. Hanania, MD, MS; Gerard Criner, MD; Thys van der Molen, PhD; Darcy D. Marciniuk, MD; Tom Denberg, MD, PhD; Holger Schünemann, MD, PhD, MSc; Wisia Wedzicha, PhD; Roderick MacDonald, MS; and Paul Shekelle, MD, PhD, for the American College of Physicians, the American College of Chest Physicians, the American Thoracic Society, and the European Respiratory Society.*

Description: This guideline is an official statement of the American College of Physicians (ACP), American College of Chest Physicians (ACCP), American Thoracic Society (ATS), and European Respiratory Society (ERS). It represents an update of the 2007 ACP clinical practice guideline on diagnosis and management of stable chronic obstructive pulmonary disease (COPD) and is intended for clinicians who manage patients with COPD. This guideline addresses the value of history and physical examination for predicting airflow obstruction; the value of spirometry for screening or diagnosis of COPD; and COPD management strategies, specifically evaluation of various inhaled therapies (anticholinergics, long-acting β-agonists, and corticosteroids), pulmonary rehabilitation programs, and supplemental oxygen therapy.

Methods: This guideline is based on a targeted literature update from March 2007 to December 2009 to evaluate the evidence and update the 2007 ACP clinical practice guideline on diagnosis and management of stable COPD.

Recommendation 1: ACP, ACCP, ATS, and ERS recommend that spirometry should be obtained to diagnose airflow obstruction in patients with respiratory symptoms (Grade: strong recommendation, moderate-quality evidence). Spirometry should not be used to screen for airflow obstruction in individuals without respiratory symptoms (Grade: strong recommendation, moderate-quality evidence).

Recommendation 2: For stable COPD patients with respiratory symptoms and FEV₁ between 60% and 80% predicted, ACP, ACCP, ATS, and ERS suggest that treatment with inhaled bronchodilators may be used (Grade: weak recommendation, low-quality evidence).

Recommendation 3: For stable COPD patients with respiratory symptoms and FEV₁ <60% predicted, ACP, ACCP, ATS, and ERS recommend treatment with inhaled bronchodilators (Grade: strong recommendation, moderate-quality evidence).

Recommendation 4: ACP, ACCP, ATS, and ERS recommend that clinicians prescribe monotherapy using either long-acting inhaled anticholinergics or long-acting inhaled β-agonists for symptomatic patients with COPD and FEV₁ <60% predicted. (Grade: strong recommendation, moderate-quality evidence). Clinicians should base the choice of specific monotherapy on patient preference, cost, and adverse effect profile.

Recommendation 5: ACP, ACCP, ATS, and ERS suggest that clinicians may administer combination inhaled therapies (long-acting inhaled anticholinergics, long-acting inhaled β-agonists, or inhaled corticosteroids) for symptomatic patients with stable COPD and FEV₁ <60% predicted (Grade: weak recommendation, moderate-quality evidence).

Recommendation 6: ACP, ACCP, ATS, and ERS recommend that clinicians should prescribe pulmonary rehabilitation for symptomatic patients with an FEV₁ <50% predicted (Grade: strong recommendation, moderate-quality evidence). Clinicians may consider pulmonary rehabilitation for symptomatic or exercise-limited patients with an FEV₁ >50% predicted. (Grade: weak recommendation, moderate-quality evidence).

Recommendation 7: ACP, ACCP, ATS, and ERS recommend that clinicians should prescribe continuous oxygen therapy in patients with COPD who have severe resting hypoxemia (PaO₂ ≤55 mm Hg or SpO₂ ≤88%) (Grade: strong recommendation, moderate-quality evidence).

* This paper, written by Amir Qaseem, MD, PhD, MHA; Timothy J. Wilt, MD, MPH; Steven E. Weinberger, MD; Nicola A. Hanania, MD, MS; Gerard Criner, MD; Thys van der Molen, PhD; Darcy D. Marciniuk, MD; Tom Denberg, MD, PhD; Holger Schünemann, MD, PhD, MSc; Wisia Wedzicha, PhD; Roderick MacDonald, MS; and Paul Shekelle, MD, PhD, was developed for the following entities: the Clinical Guidelines Committee of the American College of Physicians (Paul Shekelle, MD, PhD [Chair]; Roger Chou, MD; Paul Dallas, MD; Thomas D. Denberg, MD, PhD; Nicholas Fitterman, MD; Mary Ann Forciea, MD; Robert H. Hopkins Jr., MD; Linda L. Humphrey, MD, MPH; Tanveer P. Mir, MD; Douglas K. Owens, MD, MS); Holger Schünemann, MD, PhD, MSc; Donna E. Sweer, MD; and David S. Weinberg, MD, MSc); the American College of Chest Physicians (represented by Thys van der Molen, PhD, and Wisia Wedzicha, PhD). Approved by the ACP Board of Regents on 31 July 2010; by the American College of Chest Physicians Board of Regents on 6 April 2011; by the American Thoracic Society Executive Committee on 11 April 2011; and by the European Respiratory Society Scientific Committee on 11 April 2011.

† Former Clinical Guidelines Committee member who was active during the development of this guideline.


For author affiliations, see end of text.
Chronic obstructive pulmonary disease (COPD) is a slowly progressive disease involving the airways or pulmonary parenchyma (or both) that results in airflow obstruction. Manifestations of COPD range from dyspnea, poor exercise tolerance, chronic cough with or without sputum production, and wheezing to respiratory failure or cor pulmonale. Exacerbations of symptoms and concomitant chronic diseases may contribute to the severity of COPD in individual patients. A diagnosis of COPD is confirmed when a patient who has symptoms of COPD is found to have airflow obstruction (generally defined as a postbronchodilator FEV₁–FVC ratio less than 0.70, but taking into account that age-associated decreases in FEV₁–FVC ratio may lead to overdiagnosis in elderly persons) in the absence of an alternative explanation for the symptoms (for example, left ventricular failure or deconditioning) or the airflow obstruction (for example, asthma). Clinicians should be careful to avoid attributing symptoms to COPD when common comorbid conditions, such as heart failure, are associated with the same symptoms.

In the United States, COPD affects more than 5% of the adult population; it is the third leading cause of death and the 12th leading cause of morbidity (1–3). The total economic costs of COPD in the United States were estimated to be $49.9 billion in 2010, and the total direct cost of medical care is approximately $29.5 billion per year (4).

The purpose of this guideline is to update the 2007 American College of Physicians guideline on diagnosis and management of stable COPD (5) and present new evidence on the diagnosis and management of stable COPD. This guideline update was developed through a joint collaboration among 4 organizations: the American College of Physicians (ACP), American College of Chest Physicians (ACCP), American Thoracic Society (ATS), and European Respiratory Society (ERS). In this guideline, we rephrased and clarified our 2007 guideline recommendations. We also added recommendations on when to consider pharmacotherapy in patients with stable COPD, clarified how to select among various monotherapies, reaffirmed our 2007 recommendations on when to use spirometry, and expanded on our recommendation for pulmonary rehabilitation. We also added a recommendation for treatment of patients with respiratory symptoms and FEV₁ between 60% and 80% predicted.

The target audience for this guideline includes all clinicians caring for patients with COPD, and the target population is comprised of patients with stable COPD. For the purpose of this guideline, we use the terms COPD and airflow obstruction, where COPD is defined by both physiologic and clinical criteria and airflow obstruction is defined by spirometric findings alone. This guideline does not address all components of management of a patient with COPD and is limited to pharmacologic management, pulmonary rehabilitation, and oxygen therapy. It does not cover smoking cessation, surgical options, palliative care, end-of-life care, or nocturnal ventilation.

**METHODS**

The guideline panel included representatives from each of the 4 collaborating organizations, and the resulting guideline represents an official and joint clinical practice guideline from those organizations. The guideline panel communicated via conference calls and e-mails. The members reached agreement and resolved any disagreements through facilitated discussion. The final recommendations were approved by unanimous vote. The key questions and scope for the guideline were developed with input from the joint guideline panel. Evidence reviews and tables were presented to the guideline panel for review and comments. The guideline panel evaluated the recommendations on the basis of the evidence.

The key questions and scope of the guideline were developed with input from the joint guideline panel. These questions were:

1. What is the value of the history and physical examination for predicting airflow obstruction?
2. What is the value of spirometry for screening and diagnosis of adults who are asymptomatic and have risk factors for developing airflow obstruction, or who are COPD treatment candidates?
3. What management strategies are effective for treating COPD?
   a. mono- and combination inhaled therapies (anticholinergics, long-acting β-agonists, or corticosteroids); b. pulmonary rehabilitation programs; or c. supplemental long-term oxygen therapy (evidence not updated).

The Minnesota Evidence-based Practice Center performed an updated literature search that included studies from MEDLINE published between March 2007 and December 2009. Additional background material reviewed by the guideline panel included the 2007 systematic evidence review by Wilt and colleagues (6) and the 2004 Agency for Healthcare Research and Quality–sponsored Minnesota Evidence-based Practice Center evidence report (7).

The literature search focused on evidence for the value of spirometry for screening or diagnosis of COPD; the efficacy and comparative effectiveness of management strategies, such as inhaled monotherapies (anticholinergics, long-acting β-agonists, or corticosteroids), combination therapies, and pulmonary rehabilitation programs, for pa-
patients with COPD. For diagnostic accuracy of the physical examination and spirometry, we used an updated systematic review from 2008 (8), because the guideline panel agreed that there is no reason to suspect that diagnostic accuracy of the physical examination or spirometry would have changed since the ACP guideline was published in 2007 (5). In addition, we did not update the search for the utility of supplemental oxygen for patients with COPD who have awake, resting hypoxemia because widespread consensus remains on this issue. The patient outcomes that were considered were exacerbations, hospitalizations, mortality, health-related quality of life, and dyspnea.

This guideline rates the evidence and recommendations by using the ACP guideline grading system, which is based on the system developed by the GRADE (Grading of Recommendations, Assessment, Development, and Evaluation) workgroup (Table). Details of the ACP guideline development process are found in the ACP methods paper (9).

PREDICTION OF AIRFLOW OBSTRUCTION ON THE BASIS OF HISTORY AND PHYSICAL EXAMINATION

The evidence evaluated for the 2007 ACP guideline (5) showed that findings on physical examination had high specificity (>90%) but poor sensitivity for airflow obstruction. The literature showed that combinations of findings in the history and clinical examination were more helpful than a single finding for predicting the presence or absence of airflow obstruction (10–15). A 70–pack-year history of smoking is the best predictor of airflow obstruction. The best combination to rule out airflow obstruction was absence of a smoking history and no evidence of wheezing on either history or physical examination.

In our guideline update, we relied on a recent systematic review by Simel and Rennie (8) that updated the previously published evidence on clinical examination and airflow obstruction (16). This update indicated that the single best variable for identifying adults with airflow obstruction (typically defined as postbronchodilator FEV₁/FVC ratio <0.70, with severity category based on the results of postbronchodilator FEV₁ reported as a percent of the predicted value) is a history of greater than 40 pack-years of smoking (positive likelihood ratio [LR], 12 [95% CI, 2.7 to 50]). A combination of findings was more helpful for diagnosing airflow obstruction than was any individual sign, symptom, or piece of historical information. The combination of all 3 of the following items—patient-reported smoking history greater than 55 pack-years, wheezing on auscultation, and patient self-reported wheezing—almost assures the presence of airflow obstruction (LR, 156). In addition, the absence of all 3 items practically rules out airflow obstruction (LR, 0.02) (8, 17).

A physician’s “overall clinical impression” was useful for diagnosing airflow obstruction in patients with moderate to severe disease (LR, 5.6 [CI, 3.1–10]) but was of limited value in ruling out airflow obstruction (LR, 0.59 [CI, 0.51–0.68]) (10, 17). However, the sparseness of the data makes any conclusion about the value of “overall clinical impression” premature.

Using Spirometry to Screen for Airflow Obstruction or Diagnose COPD

Spirometry is a pulmonary function test that measures the presence and severity of airflow obstruction. In symptomatic patients, spirometry is helpful for determining whether the symptoms are due to respiratory disease or other conditions. Chronic obstructive pulmonary disease is diagnosed when spirometry demonstrates airflow obstruction that is not fully reversible. Although a single spirometric test done without bronchodilators is relatively inexpensive, the aggregate economic and public health costs associated with screening all adults with risk factors for COPD in the absence of respiratory symptoms are large. Follow-up visits, repeated office spirometry, full pulmonary function tests with bronchodilator testing, lung imaging, and drug prescriptions would follow initial primary care–office spirometry in many patients (18).

As reported in the 2007 ACP guideline, regardless of exposure to COPD risk factors, our evidence update found no evidence of benefit of using spirometry to screen adults who have no respiratory symptoms. What constitutes “asymptomatic” with respect to patients with airflow obstruction on spirometry is not precisely defined in the literature, although wheezing, shortness of breath, chronic cough, or limitations on exertion, when due to the respiratory system disease, in most cases would classify a patient as having symptomatic COPD. Clinicians should be alert, however, that some patients may deny limitation on exertion because they have knowingly or unknowingly restricted their activities to those that do not cause symp-
Patients with very low daily activities may be symptomatic if they tried to engage in the activities normal for someone of their age and health state.

**Evidence for Treating At-Risk Asymptomatic Individuals With Mild to Moderate Airflow Obstruction (FEV₁/FVC Ratio <0.70 and FEV₁ ≥50% Predicted) or Without Airflow Obstruction (FEV₁/FVC Ratio ≥0.70) to Prevent the Development of Symptomatic Airflow Obstruction**

The evidence reviewed for the 2007 ACP guideline showed no beneficial effect of treatment of asymptomatic persons, with or without risk factors for airflow obstruction, to prevent future respiratory symptoms or reduce subsequent decline in lung function.

In our guideline update, we identified 1 study that provided subgroup data comparing smoking cessation plus ipratropium, smoking cessation plus placebo, and usual care (the control group that received no intervention) in asymptomatic adult smokers with mild to moderate airflow obstruction (19). In the smoking cessation plus ipratropium group, ipratropium did not prevent the development of symptoms, regardless of the presence of airflow obstruction at baseline.

No evidence from randomized, controlled trials (RCTs) has evaluated the effectiveness of long-acting inhaled bronchodilators (anticholinergics or β-agonists) or inhaled corticosteroids in at-risk asymptomatic persons who do not have airflow obstruction (7).

Thus, we reaffirm our 2007 guideline, which recommends against treating asymptomatic individuals with or without spirometric evidence of airflow obstruction, regardless of the presence or absence of risk factors for airflow obstruction.

**Initiating, Monitoring, or Modifying Therapy in Symptomatic Patients on the Basis of Spirometric Findings**

In the 2007 ACP clinical guideline (5), we did not find any evidence to support the use of routine periodic spirometry after initiation of therapy in order to monitor disease status or guide therapy modification.

In our guideline update, there is no new evidence to support the use of routine periodic spirometry after initiation of therapy to monitor disease status or to modify therapy in symptomatic patients. Improvements in clinical symptoms do not necessarily correlate with spirometric responses to therapy or reduction of long-term decline in FEV₁. Spirometry is useful to identify symptomatic patients with airflow obstruction who may benefit from pharmacotherapy. The evidence supports the initiation of inhaled bronchodilator treatment (anticholinergics, long-acting β-agonists, or corticosteroids) in patients who have respiratory symptoms and FEV₁ less than 60% predicted. Because of the wide intraindividual variation, the spirometric decline of lung function cannot be used to measure individual long-term response to treatment.

**Using Spirometry Results to Promote Smoking Cessation**

In the 2007 ACP guideline, we did not find any high-quality evidence that the use of spirometry or the communication of spirometry results to patients improved smoking cessation. Updated evidence for this guideline supports our prior findings that obtaining and providing individuals with spirometry results does not independently improve smoking cessation or the likelihood of continued abstinence. Evidence from 1 RCT showed no benefit of spirometry in achieving smoking cessation success at 6, 12, or 24 months of follow-up (20). Another study showed a 7% statistically significant benefit of using spirometry results as part of a smoking cessation program over 12 months. However, it was not an independent effect, because individuals who received spirometric testing results that were translated into “lung age” also received additional counseling, encouragement, and advice on smoking cessation, whereas the control group received spirometry results were given as a raw FEV₁ figure (21). One study showed no difference at 36-month follow-up among individuals who received annual spirometry results in addition to smoking cessation information and advice and individuals who received spirometry results only at baseline and at year 3 (22).

**COPD Management Strategies**

The goals of COPD treatment are to reduce long-term lung function decline, prevent and treat exacerbations, reduce hospitalizations and mortality, relieve disabling dyspnea, and improve exercise tolerance and health-related quality of life.

**Effect of Inhaled Therapies on Long-Term Decline in Lung Function**

Pooled results from 9 long-term trials (19, 23–30), some of which were not statistically significant, demonstrated that inhaled therapies (long-acting bronchodilators, inhaled corticosteroids, or combination bronchodilator and corticosteroid therapy) reduced the annual decline in mean FEV₁ more than placebo did. Monotherapy trials reported absolute decreases in the annual rate of FEV₁ decline associated with use of tiotropium (40 mL/y), inhaled corticosteroids (44 mL/y), and long-acting β-agonists (42 mL/y). The mean differences in decline compared with placebo, were −2.8 and −13 mL/y, respectively, and were not considered by most authorities to be clinically important differences (23–25, 28, 29). Other studies have demonstrated that combinations of inhaled agents are not more effective than monotherapy for slowing declines in lung function. Evidence is inadequate to predict in which patients inhaled therapies will have the greatest effect on long-term decline in lung function.

The largest clinically significant effect of combination therapy was observed in the TORCH (Towards a Revolution in COPD Health) trial, in which the mean annual decline in FEV₁ associated with a long-acting β-agonist...
plus an inhaled corticosteroid was 39 mL/y compared with 55 mL/y for placebo (difference, −16 mL/y) (28). In the UPLIFT (Understanding the Potential Long-Term Impacts on Function with Tiotropium) trial, there was a non-significant difference in long-term lung function decline between long-term tiotropium plus usual care (in general, another inhaled therapy) and placebo plus usual care (40 mL/y and 42 mL/y, respectively) (23). Another trial of long-acting β-agonist plus inhaled corticosteroid compared with tiotropium alone showed no statistically significant mean change in FEV₁ decline over 2 years (30). In comparison, the effect of smoking cessation on FEV₁, as measured by the difference in mean FEV₁ decline among sustained quitters (13 mL/y) versus continuing smokers (60 mL/y), was −47 mL/y (19).

**Comparison of the Benefits of Inhaled Therapies According to Baseline FEV₁**

Updated evidence reconfirms our prior findings that the patients who benefit the most from inhaled therapies (anticholinergics, long-acting β-agonists, or corticosteroids) are those who have respiratory symptoms and airflow obstruction with FEV₁ less than 60% predicted. Although some patients who were studied had an FEV₁ greater than 60% predicted, the mean FEV₁ of the included patients has been 60% predicted or less for most COPD treatment trials.

**Effects of Monotherapy in COPD**

**Exacerbations, Hospitalizations, and Mortality**

Evidence reviewed in the 2007 ACP guideline showed that monotherapy with a long-acting inhaled β-agonist, a long-acting inhaled anticholinergic (tiotropium), or an inhaled corticosteroid was superior to placebo and short-acting anticholinergics in reducing exacerbations (5). Annual rates of exacerbations with salmeterol and fluticasone were statistically significantly lower than with placebo (31). Tiotropium (relative risk [RR], 0.84 [CI, 0.78 to 0.90]), long-acting β-agonists (RR, 0.87 [CI, 0.82 to 0.93]), and inhaled corticosteroids (RR, 0.85 [CI, 0.75 to 0.96]) reduced the RR for at least one exacerbation compared with placebo (6). However, ipratropium, a short acting anticholinergic, was not superior to placebo (RR, 0.95 [CI, 0.78 to 1.15]) (6). In comparison studies, long-acting β-agonists were as effective in reducing exacerbations as ipratropium (RR, 0.89 [CI, 0.72 to 1.10]), inhaled corticosteroids (RR, 1.06 [CI, 0.84 to 1.34]), and the long-acting anticholinergic tiotropium (RR, 1.11 [CI, 0.93 to 1.33]) (6). Finally, tiotropium was more effective than ipratropium (RR, 0.77 [CI, 0.62 to 0.95]) in reducing exacerbations (6).

Tiotropium has been shown to statistically significantly reduce hospitalizations for COPD exacerbations compared with placebo (absolute risk difference, −2% [CI, −4% to −1%]) (32–35) but not compared with ipratropium (absolute risk difference, −4% [CI, −10% to 1%]) (36). The Lung Health Study (trials 1 and 2) found no statistically significant differences in hospitalizations per 100 person-years of exposure between ipratropium and placebo or between inhaled corticosteroids and placebo (19, 25). The TORCH study found no difference in pulmonary-cause mortality with salmeterol, fluticasone, or the combination of these agents compared with placebo (31, 37). However, the annual hospitalization rate was 18% lower in the salmeterol group than the placebo group (31). A meta-analysis by Salpeter and colleagues (38) identified an increase in pulmonary-cause mortality associated with use of long-acting β-agonist (21 deaths among 1320 participants vs. 8 deaths per 1084 participants in the placebo group; RR, 2.47 [CI, 1.12 to 5.45]) and a 73% relative reduction in mortality associated with anticholinergics compared with placebo (2 deaths per 4036 participants vs. 12 deaths per 3845 participants, respectively; RR, 0.27 [CI, 0.09 to 0.82]).

In this guideline update, no new studies were identified during our initial search time frame that evaluated the effect of inhaled monotherapies (anticholinergics, long-acting β-agonists, or corticosteroids) on exacerbations, hospitalizations, or mortality. After the search date for the guideline had passed, a large randomized trial demonstrated that tiotropium compared with salmeterol reduced the time to first exacerbation (primary outcome), total number of exacerbations, and severe exacerbations in patients with moderate to very severe COPD (mean FEV₁, 52%). Adverse effects were similar between groups (39).

**Health-Related Quality of Life and Dyspnea**

One new trial (23) of at least 2 years’ duration in addition to the 2 trials reviewed for the 2007 guideline (24, 31) provided information on respiratory health-related quality of life as measured by the St. George’s Respiratory Questionnaire. All 3 studies demonstrated a statistically significant improved quality of life with monotherapy (tiotropium, salmeterol, or fluticasone) compared with placebo, but the mean absolute difference did not achieve the threshold of a minimal important difference (defined as at least a 4-point difference in the symptom scale scores).

Studies infrequently reported dyspnea scores, and when these were reported, a small improvement with monotherapies was typically demonstrated. Reasons for not reporting dyspnea scores include no acceptable and appropriate approach to assess dyspnea in a clinical trial setting and a lack of a uniform method. Two recent studies of at least 2 years’ duration in addition to the Lung Health Study that were included in the 2007 review provided information on dyspnea (23, 25, 40). The Lung Health Study found a statistically significant benefit in reducing the frequency of dyspnea in patients who were assigned to receive inhaled corticosteroids versus placebo (68% vs. 62%, respectively, reported no dyspnea at 36 months; P = 0.02) (25). Another study reported that Medical Research Council dyspnea scores were reduced with fluticasone ther-
apy compared with placebo (−0.2 point/y [CI, −0.3 to −0.06 point/y]; P = 0.003) (40).

Adverse Effects

As reported in the 2007 guideline, potential adverse reactions include oropharyngeal candidiasis, dysphonia, and moderate to severe easy bruisability with inhaled corticosteroids (24, 26, 41); dry mouth with tiotropium (42); and increased cardiovascular events with long-acting inhaled β-agonists (43). On the basis of 2 RCTs, the incidence of fracture over 3 years was similar with inhaled corticosteroids and placebo (1.4% vs. 2.0%, respectively) (24, 26). However, in the Lung Health Study, lumbar spine and femur bone densities were statistically significantly lower in the inhaled triamcinolone group (25).

Two recent meta-analyses published after the 2007 review reported on adverse effects (44, 45). One meta-analysis of 11 RCTs of greater than 6 months’ duration did not identify increased risks for pneumonia, 1-year mortality, or fracture associated with inhaled corticosteroids as monotherapy (44). Another recent meta-analysis of RCTs (45) found that short- or long-acting anticholinergics were associated with an increased risk for major cardiovascular events in 4 trials 48 weeks to 24 months in duration (RR, 2.12 [CI, 1.22 to 3.67]; absolute risk difference, 1.2) but not in 8 RCTs 6 weeks to 6 months in duration (RR, 0.82 [CI, 0.43 to 1.58]). However, a panel convened by the U.S. Food and Drug Administration noted the limitations of that meta-analysis, which included potentially biased study selection, lack of assessment of patient follow-up time, lack of information on adverse events in patients who withdrew from many of the included trials, lack of patient-level data, and the combination of the trials on short-acting and long-acting anticholinergics in the main analysis (46).

Evidence for Using Monotherapies in Patients With FEV₁ Between 50% and 80% Predicted

Among symptomatic patients with FEV₁ greater than 50% predicted but less than 80% predicted or those with normal airflow but who have chronic sputum production (at-risk individuals), 7 large studies of inhaled corticosteroids or short- or long-acting anticholinergics that lasted at least 1 year (including 2 published since the 2007 review [47, 48]) found little to no improvement in exacerbations, health-related quality of life, COPD hospitalizations, or mortality (19, 24–27, 47, 48).

Effect of Combination Therapies for COPD

In the 2007 ACP guideline, the conclusion was that it cannot be clearly established when to use combination therapy instead of monotherapy. The evaluated evidence showed that combination therapies do not consistently demonstrate benefits over monotherapy.

This guideline update reprises the analysis of the 2007 ACP guideline by focusing on 9 trials of at least 2 years’ duration. The outcome “exacerbations” was evaluated according to “rates” (exacerbations per patient-year in patients who had at least 1 exacerbation). Two new large, long-term studies with data on combination therapy compared with monotherapy found a benefit of using combination therapy over monotherapy in symptomatic patients with an FEV₁ less than 60% predicted, because combination therapy was associated with a higher percentage of patients with clinically noticeable improvement in respiratory symptoms (23, 30). However, results of other studies did not support this benefit; the average change in respiratory symptoms was below a clinically noticeable threshold, and adverse events were increased (6). Because studies of various combination therapies are lacking, there is little evidence to support the identification of any preferred combination therapy. A recent Cochrane review concluded that the relative efficacy and safety of combination inhalers remains uncertain because the authors found that the proportion of missing outcome data compared with the observed outcome data in the current studies may be sufficient to induce a clinically relevant bias in the intervention effect (49).

Exacerbations, Hospitalizations, and Mortality

One study compared combination therapy (salmeterol plus fluticasone) with monotherapy (tiotropium) for 2 years in 1323 patients with a mean FEV₁ of 39% predicted (30). The results for secondary end points showed that compared with monotherapy, combination therapy reduced overall mortality (hazard ratio [HR], 0.48 [CI, 0.27 to 0.85]) and increased the percentage of patients who had a clinically significant improvement in respiratory health status scores (32% with combination therapy vs. 27% with monotherapy at year 2) (30). The absolute risk difference in mortality was approximately 1%. There were no differences between monotherapy and combination therapy in the overall rates of exacerbations, exacerbations requiring hospitalization, the percentage of patients who had at least 1 exacerbation, or mean change in FEV₁ at 2 years.

In the TORCH trial, the mean FEV₁ was 44% predicted among 6112 patients, and fewer than 15% of patients had an FEV₁ greater than 60% predicted. Combination therapy (salmeterol plus fluticasone) reduced the annual rate of exacerbations compared with monotherapy (salmeterol alone, fluticasone alone, or placebo) (31). Although mortality with combination therapy was reduced in this trial compared with monotherapy, the reduction did not reach the predetermined level of statistical significance.

Another randomized trial showed that addition of fluticasone–salmeterol to tiotropium therapy compared with tiotropium plus placebo did not influence exacerbation rates but did improve lung function, health-related quality of life, and hospitalization in patients with moderate or severe COPD (postbronchodilator FEV₁ <65% predicted) (50).

The UPLIFT study included 5993 patients and compared tiotropium plus any other nonanticholinergic
respiratory medications with placebo plus any other nonanticholinergic respiratory medications over 4 years. This study was not a true comparison of combination versus placebo because more than 90% of the patients in the placebo group were using another (nonstudy) inhaled medication throughout the trial; approximately two thirds were receiving long-acting β-agonists, inhaled corticosteroids, or both agents). Inclusion in the study required an FEV₁ less than 70% predicted; the mean FEV₁ of enrollees was 48% predicted. The study authors concluded that in patients with severe symptomatic airflow obstruction the addition of tiotropium reduced the rate of exacerbations (HR, 0.86 [CI, 0.81 to 0.91]), increased the delay in time to first exacerbation (16.7 months vs. 12.5 months; P < 0.05), and reduced the incidence of respiratory failure compared with placebo. The percentage of patients who experienced at least 1 exacerbation differed between study groups, although all patients experienced at least 1 exacerbation (23). Addition of tiotropium also prolonged the time to first hospitalization for exacerbations (HR, 0.86 [CI, 0.78 to 0.95]) but not the number of exacerbations per patient-year leading to hospitalization (RR, 0.94 [CI, 0.82 to 1.07]). There was no statistically significant difference in overall mortality (HR, 0.89 [CI, 0.79 to 1.02]).

Health-Related Quality of Life and Dyspnea

Two trials (30, 31) of at least 2 years’ duration provided information on health-related quality of life as measured by the St. George’s Respiratory Questionnaire. In a study published after the 2007 review, Wedzicha and colleagues (30) noted a statistically significant improvement among symptomatic patients with severe airflow obstruction (mean FEV₁, 39% predicted) who were assigned to receive inhaled combined long-acting β-agonist and corticosteroid therapy compared with tiotropium alone. In the TORCH trial (31), the average change in score over 3 years was statistically significantly better in the combination therapy group than in the salmeterol-alone group, the fluticasone-alone group, and the placebo group (averaged over 3 years, the difference of the difference between combination and placebo group in the score for the St. George’s Respiratory Questionnaire was 3.1 units).

Two new studies provide an update to the 2007 review. The UPLIFT study (23) assessed the effect of tiotropium on the incidence of dyspnea and found a decrease of 39% in patients receiving tiotropium compared with those receiving placebo (RR, 0.61 [CI, 0.40 to 0.94]; 0.38 vs. 0.62 per 100 patient-years, respectively). Lapperre and colleagues (40) found that use of inhaled corticosteroids alone or in combination with a long-acting β-agonist was associated with a small, non–clinically significant improvement over baseline dyspnea compared with placebo (change in Medical Research Council dyspnea score of approximately 0.2 to 0.3).

Adverse Effects

The 2007 literature was updated with 2 studies of the adverse effects of combination therapy. One study of 2 years’ duration that included 1323 patients with a mean FEV₁ 39% predicted found that the percentage of patients with serious adverse events was greater with combination therapy (salmeterol–fluticasone) than with monotherapy (tiotropium) (30% vs. 24%; P = 0.02) (30). Salmeterol–fluticasone therapy was also associated with more cases of patient- and investigator-reported pneumonia than was therapy with tiotropium alone (8% vs. 4%; P = 0.008) (30). In contrast, the UPLIFT trial (tiotropium plus any other nonanticholinergic respiratory medications compared with placebo plus any other nonanticholinergic respiratory medications) found a reduced risk for myocardial infarction with long-acting inhaler tiotropium compared with placebo (RR, 0.73 [CI, 0.53 to 1.00]) and no difference in risk for stroke (23).

Evidence to Use Combination Therapy in Patients With FEV₁ Between 50% and 80% Predicted

One study of patients with FEV₁ between 50% and 80% predicted who were treated with the combination of a long-acting β-agonist and inhaled corticosteroid showed little improvement in exacerbations, mortality, or health-related quality of life compared with placebo recipients (48). Subgroup data from another trial showed that the time to first exacerbation and the time to exacerbation resulting in hospital admission were longer in the tiotropium group than in the control group (HR, 0.82 [CI, 0.75 to 0.90] and 0.74 [CI, 0.62 to 0.88], respectively) (47).

Pulmonary Rehabilitation

Results reported in the 2007 ACP guideline suggest that pulmonary rehabilitation programs provide improvements in respiratory symptoms, quality of life, and the 6-minute walk test, at least in the short term following the program, among persons with baseline respiratory symptoms and a mean FEV₁ of approximately 50% predicted. Most studies have historically enrolled patients with a mean FEV₁ of 50% predicted or lower. Although the generalizability of these data to patients with less severe airflow obstruction is less clear, evidence reviewed in this guideline update suggests that patients with moderate COPD also experience benefit (49). We found no new information on the effectiveness of pulmonary rehabilitation programs in severe COPD. However, a recently published RCT (outside our inclusion criteria) that included 252 patients with moderate to severe COPD who were monitored over 8 weeks compared outpatient hospital-based pulmonary rehabilitation with home-based pulmonary rehabilitation (51). Study inclusion required a diagnosis of COPD and an FEV₁ less than 70% predicted. The mean FEV₁ was
43% predicted, and approximately one third of individuals had moderate COPD (Global Initiative for Chronic Obstructive Lung Disease stage II). More than 99% of patients had self-reported shortness of breath. Results showed that both interventions produced similar improvements in the dyspnea domain of the Chronic Respiratory Questionnaire and total score on St. George’s Respiratory Questionnaire. The improvement in dyspnea from baseline in both groups was statistically significant and greater for both scale scores than the previously determined minimally important difference at 3 months. However, only the home-based program reached the minimum clinically important difference at 12 months. The main components of most reported pulmonary rehabilitation programs included endurance and exercise training, education, behavioral modification, and outcome assessment.

One study used a multidisciplinary pulmonary rehabilitation program that included a 4-month clinic-based program followed by 20 months of community-based maintenance among symptomatic adults, among whom approximately 68% had an FEV₁ greater than 50%. Participants showed clinically significant benefits in St. George’s Respiratory Questionnaire scores at 4 months but not at 12 months (52). There were no statistically significant differences in moderate to severe exacerbations (composite outcome with St. George’s Respiratory Questionnaire score) at 4 or 12 months and no clinically important differences in the 6-minute walk test after 4 months or 2 years. One small study showed that there were no differences in 18-month mortality between the outpatient rehabilitation group and the control group ($P = 0.79$) (53). Evidence reviewed by Puhan and colleagues (54) from small studies of moderate-quality evidence showed that pulmonary rehabilitation is an effective intervention to reduce hospital readmissions and to improve health-related quality of life in patients with COPD after an exacerbation. Another systematic review showed that inspiratory muscle training with targeted hyperventilation increases muscle strength and endurance, and it improves exercise capacity and decreases dyspnea for adults with stable COPD (55).

Supplemental Long-Term Oxygen Therapy

We did not update the search to evaluate the utility of long-term oxygen therapy because widespread consensus remains on this point. To summarize the evidence presented in the 2007 ACP guideline (5), 2 trials (56, 57) showed that supplemental oxygen used 15 or more hours daily to maintain a PaO₂ greater than 60 mm Hg reduced mortality in patients with COPD who have severe resting hypoxemia (mean resting PaO₂ ≤55 mm Hg) (RR, 0.61 [CI, 0.46 to 0.82]). Two other studies (58, 59) showed no effect on relative risk for mortality with use of supplemental oxygen (9 to 13 hours daily) during the day or at night in patients with similar severity of airflow obstruction but daytime PaO₂ greater than 60 mm Hg. In addition, studies showed no effect of ambulatory oxygen on respiratory health-related quality of life measures (60, 61). Physiologic indications for the use of long-term oxygen therapy include cor pulmonale or polycythemia with PaO₂ between 55 and 59 mm Hg (62).

**Summary**

Evidence shows that history and physical examination are poor predictors of airway obstruction and its severity. However, combination of all 3 of the following findings in an individual—greater than 55–pack-year history of smoking, wheezing on auscultation, and patient self-reported wheezing—can be considered predictive of airflow obstruction, defined as postbronchodilator FEV₁/FVC ratio less than 0.70.

Spirometry is a pulmonary function test that is useful to identify airflow obstruction in symptomatic patients who may benefit from pharmacotherapy, long-term oxygen, or pulmonary rehabilitation (or all of these strategies). Symptomatic patients with FEV₁ less than 60% predicted will benefit from inhaled treatments (anticholinergics, long-acting β-agonists, or corticosteroids). The evidence does not support treating asymptomatic persons, regardless of the presence or absence of airflow obstruction or risk factors for airflow obstruction.

Currently, evidence does not support the use of spirometry as a screening strategy for airflow obstruction in persons without respiratory symptoms, even in the presence of risk factors. In addition, spirometry does not seem to have an independent influence on the likelihood of quitting smoking or maintaining abstinence. The routine use of spirometry in asymptomatic patients in primary care settings may potentially lead to unnecessary testing, increased costs and resource utilization, unnecessary disease labeling, and the harms of long-term treatment with no known preventive effect on avoiding future symptoms.

Most trials that compared the efficacy or effectiveness of various inhaled monotherapies did not show any differences among these medications. Monotherapy with a long-acting inhaled agent (long-acting anticholinergic, long-acting β-agonist, or corticosteroid) was superior to placebo or short-acting anticholinergic therapy in reducing exacerbations. The evidence is not conclusive in linking inhaled monotherapies with reductions in hospitalizations or mortality. In some studies, combination therapy with various inhaled agents (anticholinergics, long-acting β-agonists, or corticosteroids) was shown to reduce exacerbations, hospitalizations, mortality, and improve health-related quality of life compared with monotherapy. Other studies have not identified these benefits, however, and a few studies have identified a modest increase in the risk for adverse events. Finally, on the basis of studies that showed benefit, it remains unclear when combination therapy is preferred over monotherapy.
Pulmonary rehabilitation improves symptoms in patients with an FEV₁ less than 50% predicted. However, the generalizability of pulmonary rehabilitation benefits to all patients is not clear. We did not update the search to evaluate the utility of long-term oxygen therapy. Evidence evaluated for our 2007 guideline showed a reduction in mortality associated with use of long-term supplemental oxygen therapy for patients with severe resting hypoxemia (Pao₂ ≤55 mm Hg).

**RECOMMENDATIONS**

**Recommendation 1:** ACP, ACCP, ATS, and ERS recommend that spirometry should be obtained to diagnose airflow obstruction in patients with respiratory symptoms (Grade: strong recommendation, moderate-quality evidence). Spirometry should not be used to screen for airflow obstruction in individuals without respiratory symptoms (Grade: strong recommendation, moderate-quality evidence).

Targeted use of spirometry for diagnosis of airflow obstruction is beneficial for patients with respiratory symptoms, particularly dyspnea. Existing evidence does not support the use of spirometry to screen for airflow obstruction in individuals without respiratory symptoms, including those with current or past exposure to risk factors for COPD. Evidence is insufficient to support the use of inhaled therapies in asymptomatic individuals who have spirometric evidence of airflow obstruction, regardless of the presence or absence of risk factors for airflow obstruction. There is no difference in the annual rate of FEV₁ decline or prevention of symptoms in these individuals with treatment. No evidence from RCTs supports treating asymptomatic individuals, with or without risk factors for airflow obstruction, who do not have spirometric evidence of airflow obstruction. In addition, evidence does not show any independent benefit of obtaining and providing spirometry results on success rates in smoking cessation. No study evaluated the use of periodic spirometry after initiation of therapy to monitor ongoing disease status or modify therapy.

**Recommendation 2:** For stable COPD patients with respiratory symptoms and FEV₁ between 60% and 80% predicted, ACP, ACCP, ATS, and ERS suggest that treatment with inhaled bronchodilators may be used (Grade: weak recommendation, low-quality evidence).

There is limited and conflicting evidence of health benefits resulting from initiation of inhaled bronchodilators (anticholinergics or long-acting β-agonists) in symptomatic patients with FEV₁ between 60% and 80% predicted as documented by spirometry. Individual patients may benefit from the therapy and may show improvement in their respiratory symptoms. However, the duration of maintenance therapy and the frequency of reevaluation once a patient is receiving therapy are unknown because evidence is limited. Further research is needed to evaluate the health benefits of inhaled therapies (anticholinergics or long-acting β-agonists) in symptomatic patients with FEV₁ between 60% and 80% predicted.

This recommendation does not address the occasional use of short-acting inhaled bronchodilators for acute symptom relief.

**Recommendation 3:** For stable COPD patients with respiratory symptoms and FEV₁ <60% predicted, ACP, ACCP, ATS, and ERS recommend treatment with inhaled bronchodilators (Grade: strong recommendation, moderate-quality evidence).

Patients who benefit the most from inhaled bronchodilators (anticholinergics or long-acting β-agonists) seem to be those who have respiratory symptoms and airflow obstruction with an FEV₁ less than 60% predicted. The mean FEV₁ was less than 60% predicted in the majority of the trials that evaluated the management of COPD.

This recommendation does not address the occasional use of short-acting inhaled bronchodilators for acute symptom relief.

**Recommendation 4:** ACP, ACCP, ATS, and ERS recommend that clinicians prescribe monotherapy using either long-acting inhaled anticholinergics or long-acting inhaled β-agonists for symptomatic patients with COPD and FEV₁ <60% predicted. (Grade: strong recommendation, moderate-quality evidence). Clinicians should base the choice of specific monotherapy on patient preference, cost, and adverse effect profile.

Monotherapy with a long-acting inhaled β-agonist or a long-acting inhaled anticholinergic is beneficial in reducing exacerbations and improving health-related quality of life. Evidence was inconclusive regarding the effect of inhaled agents (anticholinergics and long-acting β-agonists) on mortality, hospitalizations, and dyspnea. Although data support that inhaled corticosteroids are superior to placebo in reducing exacerbations, concerns about their side effect profile (thrush, potential for bone loss, and moderate to severe easy bruising) and less biologic rationale, in contrast to the rationale that supports the use of inhaled steroids as anti-inflammatory monotherapy in asthma, led to our recommendation that inhaled corticosteroids are not a preferred monotherapy for patients with stable COPD. Adverse effects related to inhaled long-acting anticholinergics or long-acting β-agonists range from mild (for example, dry mouth) to potentially serious (for example, cardiovascular events). Pooled analyses of results from trials of monotherapy show no statistically significant differences in outcomes among various monotherapies. However, some of the large recent trials have shown that different monotherapies may have a greater effect on certain outcomes. These observed effects need to be confirmed with further comparative effectiveness studies. Clinicians should base selection of treatment from among various monotherapies on individual patient preferences, cost, and adverse effect profile.

**Recommendation 5:** ACP, ACCP, ATS, and ERS suggest that clinicians may administer combination inhaled therapies (long-acting inhaled anticholinergics, long-acting inhaled H9252
β-agonists, or inhaled corticosteroids) for symptomatic patients with stable COPD and FEV₁ < 60% predicted (Grade: weak recommendation, moderate-quality evidence).

Many symptomatic patients with stable COPD and an FEV₁ less than 60% predicted may benefit from combination therapy, but when to use combination therapy instead...
of monotherapy has not been clearly established. The long-term benefit of combination therapy compared to monotherapy in 2 recent large clinical trials (TORCH and UPLIFT) was moderate for COPD exacerbations and of borderline statistical significance for mortality, but was not consistently seen in earlier trials. In some studies, combination therapy has been associated with a modest increase in the risk for adverse events, whereas other studies have not found this. Thus, the evidence is insufficient to support a strong recommendation for the broad use of combination therapy, and clinicians will need to weigh the potential benefits and harms of combination therapy on a case-by-case basis. The combination therapy that has been most studied to date is long-acting inhaled β-agonists plus inhaled corticosteroids.

Recommendation 6: ACP, ACCP, ATS, and ERS recommend that clinicians should prescribe pulmonary rehabilitation for symptomatic patients with an FEV$_1$ $<$50% predicted (Grade: strong recommendation, moderate-quality evidence). Clinicians may consider pulmonary rehabilitation for symptomatic or exercise-limited patients with an FEV$_1$ $>$50% predicted. (Grade: weak recommendation, moderate-quality evidence).

Evidence supports the use of pulmonary rehabilitation for symptomatic patients who have severe COPD (FEV$_1$ $<$50% predicted). This is based on the fact that controlled trials of pulmonary rehabilitation have had a mean FEV$_1$ of less than 50% predicted. The generalizability of the benefits of pulmonary rehabilitation in patients with less severe airflow obstruction is less clear. Physicians may consider prescribing pulmonary rehabilitation for patients with an FEV$_1$ greater than 50% predicted if they remain symptomatic or have exercise limitation despite maximal medical therapy.

Recommendation 7: ACP, ACCP, ATS, and ERS recommend that clinicians should prescribe continuous oxygen therapy in patients with COPD who have severe resting hypoxemia (PaO$_2$ $\leq$ 55 mm Hg or SpO$_2$ $\leq$88%) (Grade: strong recommendation, moderate-quality evidence).

To accurately evaluate oxygen status, the assessment should ideally occur when patients are stable rather than during or immediately after an exacerbation. Use of supplemental oxygen for 15 or more hours daily can help improve survival in patients with COPD who have severe resting hypoxemia (PaO$_2$ $\leq$ 55 mm Hg or SpO$_2$ $\leq$88%).

Because pulse oximetry has essentially supplanted arterial blood gases as a measure of oxygenation in nonhospitalized patients, it is reasonable to use oxygen saturation measured by pulse oximetry (SpO$_2$) as a surrogate for PaO$_2$. On the basis of the typical relationship between PaO$_2$ and SpO$_2$ as defined by the oxyhemoglobin dissociation curve, PaO$_2$ of 55 mm Hg or less correlates approximately with SpO$_2$ 88% or less.

See the Figure for a summary of the recommendations and clinical considerations.

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Note: Clinical practice guidelines are “guides” only and may not apply to all patients and all clinical situations. Thus, they are not intended to over-ride clinicians’ judgment. All ACP clinical practice guidelines are considered automatically withdrawn or invalid 5 years after publication, or once an update has been issued.

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Acknowledgment: The authors thank Dr. Vincenza Snow for critical review and comments.

Financial Support: Financial support for the development of this guideline comes exclusively from the ACP operating budget.

Potential Conflicts of Interest: Any financial and nonfinancial conflicts of interest of the group members were declared, discussed, and resolved.

Dr. Wilt: Grant: American College of Physicians; Payment for manuscript preparation: American College of Physicians. Dr. Hanania: Consultancy: GlaxoSmithKline, Boehringer Ingelheim, Novartis, Pfizer, Sunovion, Pearl Forest; Grant/grants pending (money to institution): GlaxoSmithKline, Boehringer Ingelheim, Novartis, Pfizer, Sunovion; Payment for lectures including service on speakers bureaus: GlaxoSmithKline, AstraZeneca, Boehringer Ingelheim, Merck. Dr. Criner: Consultancy: Uptake Medical, PortAero, Pulmonx; Grant/grants pending (money to institution): Aeris Therapeutics, Empysias Medica. Dr. van der Molen: Consultancy: MSD, AstraZeneca, GlaxoSmithKline, Nycomed; Grant/grants pending (money to institution): AstraZeneca, GlaxoSmithKline, Novartis; Payment for lectures including service on speakers bureaus: AstraZeneca, Nycomed, GlaxoSmithKline, MSD. Dr. Marciniuk: Board membership: American College of Chest Physicians, Chest Foundation, Lung Association of Saskatchewan, Canadian COPD Alliance, Canadian Thoracic Society; Consultancy (no payment received): Public Health Agency of Canada, Canadian Agency for Drugs and Technology in Health; Consultancy: Saskatchewan Medical Association; Consultancy (money to institution): AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline, Saskatchewan Health Quality Council, Novartis, Nycomed, Pfizer; Employment: University of Saskatchewan, Saskatoon Health Region; Grant/grants pending (money to institution): Canadian Institute of Health Research, AstraZeneca, GlaxoSmithKline, Lung Association of Saskatchewan, Nycomed, Pfizer, Novartis, Saskatchewan Health Research Foundation, Schering-Plough, Saskatchewan Ministry of Health; Payment for lectures including service on speakers bureaus: AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline, Pfizer, Lung Association of Saskatchewan, Canadian Thoracic Society, American Thoracic Society. Dr. Wedzicha: Grant/grants pending (money to institution): Boehringer Ingelheim; Board membership: GlaxoSmithKline, Novartis, Bayer, Pfizer, Medimmune/AstraZeneca, Danone/Nutricia, Nycomed; Consultancy: Chiesi; Consultancy.
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Definition of COPD and Associated Diseases

Chronic Obstructive Pulmonary Disease (COPD)

Chronic Bronchitis

Emphysema

Asthma

Diagnosis of COPD

Use of Spirometry to Diagnose and Stage COPD

Spirometry measures include:

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Integrating Evidence into Practice:

A Pocket Guide for Primary Care Specialists

Integrating Evidence into Practice:

- Concise Guideline-Based Information
- Patient Management Strategies
- Pulmonary Function Definitions and Analysis
- Appropriate ICD-9 Codes
Definition of COPD and Associated Diseases

Chronic Obstructive Pulmonary Disease (COPD) is a disease in which airflow is limited due to an abnormal inflammatory response to noxious stimuli and damage to the lungs. It is not fully reversible and many patients eventually require supplemental oxygen to maintain adequate blood oxygen levels.

Chronic Bronchitis is defined clinically by a mucous-producing cough which persists for most days of the month over a period of 3 months in each of 2 consecutive years.

Emphysema is defined by a reduction of air exchange into the blood caused by damage to the alveoli. Emphysema is an irreversible progressive disease that can develop after years of exposure to noxious stimuli.

Asthma is defined as a reversible inflammation of the lungs and constriction of the bronchial muscles, typically caused by irritants. Asthma symptoms tend to be more episodic than those of COPD.

NOTE: About 25%–30% of COPD patients have concurrent asthma, and differentiation between asthma and COPD may be difficult in some patients.

COPD is a progressive disease; and, accordingly, the best clinical scenario involves early diagnosis and treatment in order to slow or halt the progression of the disease. If symptoms are present and the patient is exposed to certain risk factors, such as cigarette smoke, COPD should be considered as one of the possible diagnoses.

Position Statement

COPD (chronic obstructive pulmonary disease) is the 4th leading cause of death in America, affecting 11–12 million people in the US. It is also estimated that another 12 million people have COPD, but do not know it. COPD develops slowly and leads to increased disability as the disease progresses. While there is no cure, there are methods to help slow the progression of COPD and to help patients feel better and remain active. Smoking is the major cause of COPD, and many patients with this disease have a long history of smoking or exposure to noxious chemicals or irritants. The purpose of this evidence-based pocket guide is to provide a quick and easy reference utilizing GOLD (Global Initiative for Chronic Obstructive Lung Disease) and ATS/ERS (American Thoracic Society, European Respiratory Society) guidelines to assist with the diagnosis, management, and overall care of patients with COPD. As with any chronic illness, the main goal is to manage the disease while helping to improve or maintain quality of life for the patient.

A Pocket Guide for Primary Care Specialists

Integrating Evidence into Practice:

Sponsored by PRIME through an independent educational grant from Boehringer Ingelheim Pharmaceuticals, Inc.
Definition of COPD and Associated Diseases

Chronic Obstructive Pulmonary Disease (COPD)

Chronic Bronchitis

Emphysema

Asthma

Diagnosis of COPD

Use of Spirometry to Diagnose and Stage COPD

The diagnosis of COPD is primarily based upon spirometry, clinical history, and physical examination.

Spirometry is the gold standard for measuring airflow and is needed to make a firm diagnosis of COPD.

Spirometry should be conducted both pre- and post-administration of a bronchodilator.

**Spirometry measures include:**
- Forced Expiratory Volume in 1 second (FEV₃)
- Forced Vital Capacity (FVC)
- FEV₃/FVC ratio
- FEV₃/FVC < 0.7 defines airflow obstruction
- FEV₃ is used to determine the severity of disease stage

**Spirometry should be performed:**
- As part of the initial diagnosis
- As part of monitoring disease progression
- If symptoms increase drastically
- In all patients over the age of 40 with a smoking history (e.g., > 20 pack years)

After spirometry is conducted and obstruction is demonstrated, the severity of COPD is defined using the below figure.

**NOTE:** The presence of COPD symptoms should be carefully elicited and may be required for reimbursement of spirometry by insurers. A patient who has recurrent COPD symptoms is more likely to have progressive disease.

**ICD-9 Diagnostic Codes**

The following codes for COPD-related symptoms may be useful for documentation purposes.

<table>
<thead>
<tr>
<th>Code</th>
<th>Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>490</td>
<td>Bronchitis, not specified as acute or chronic</td>
</tr>
<tr>
<td>491</td>
<td>Chronic bronchitis</td>
</tr>
<tr>
<td>491.1</td>
<td>Mucopurulent chronic bronchitis</td>
</tr>
<tr>
<td>491.20</td>
<td>Chronic obstructive bronchitis without exacerbation</td>
</tr>
<tr>
<td>491.21</td>
<td>Chronic obstructive bronchitis with exacerbation</td>
</tr>
<tr>
<td>491.9</td>
<td>Unspecified chronic bronchitis</td>
</tr>
<tr>
<td>485</td>
<td>Tonsillitis</td>
</tr>
<tr>
<td>786.0</td>
<td>Dyspnea</td>
</tr>
<tr>
<td>786.05</td>
<td>Shortness of breath</td>
</tr>
<tr>
<td>786.07</td>
<td>Wheezing</td>
</tr>
<tr>
<td>786.2</td>
<td>Chronic cough</td>
</tr>
</tbody>
</table>

**Position Statement**

A Pocket Guide for Primary Care Specialists

Integrating Evidence into Practice:
- Concise Guidelines-Based Information
- Patient Management Strategies
- Pulmonary Function Definitions and Analysis
- Appropriate ICD-9 Codes

**Exposure to Noxious Stimuli**

- Avoid risk factors; administer influenza vaccination
- Add short-acting bronchodilators PRN
- Add regular treatment with 1 or more long-acting bronchodilators; add rehab
- Add inhaled glucocorticosteroids if repeated exacerbations
- Add long-term O₂ if chronic respiratory failure; consider surgical treatments

1. **Mild**  
   FEV₃/FVC < 0.70 • FEV₃ ≥ 80% predicted

2. **Moderate**  
   FEV₃/FVC < 0.70 • 50% ≤ FEV₃ < 80% predicted

3. **Severe**  
   FEV₃/FVC < 0.70 • 30% ≤ FEV₃ < 50% predicted

4. **Very Severe**  
   FEV₃/FVC < 0.30% predicted or FEV₃ < 50% predicted plus chronic respiratory failure

Adapted from reference 2.
Pulmonary Rehabilitation

Goal
Reduce systemic consequences, as well as behavioral and educational deficiencies in patients with COPD.

Who Should Participate
- Patients with FEV1 < 40% predicted
- Patients with persistent symptoms and/or limited activity levels
- Patients unable to adjust to fitness in spite of appropriate medical care

Types of Interventions
- Physical exercise
- Self-management education
- Dietary supplementation
- Psychological and social support

Effects of Pulmonary Rehabilitation
- Improved exercise performance
- Reduced secondary morbidities
- Reduced symptoms
- Improved self-management
- Improved health care costs
- Increased exercise capacity
- Reduced psychological dysfunction

Components of Effective Pulmonary Rehabilitation Programs
- Exercise program
- Self-management education
- Dietary supplementation
- Psychological and social support

Benefits of Pulmonary Rehabilitation
- Utilizing smoking cessation in COPD
- Drug therapy
- Self-management education
- Dietary supplementation
- Psychological and social support

TREATMENT OF COPD
Drug therapies (quick-relief and maintenance), smoking cessation prevention, pulmonary rehabilitation, and supplemental oxygen therapy.

Increased breathlessness with:
- Wheezing
- Chest tightness
- Increased cough (dry or mucoid)
- Fever
- Increased heart rate
- Decreased FEV1

Types of COPD Flare
- Acute exacerbation of COPD
- Acute exacerbation of COPD with limited activity levels
- Acute exacerbation of COPD with minimal activity levels

Treatment of COPD Flares
- Treat with antibiotics if changes in sputum (especially if mucopurulent) occur with dyspnea or with other signs of infection
- Intravenously quick-relief bronchodilators for acute flares
- Nebulized ipratropium (500 mcg via nebs or 2 puffs via MDI) every 4 hours for first 4 doses for symptom relief – more often if needed for short time periods
- Systemic corticosteroids
- Minimum of prednisone 30–40 mg daily for 7–10 days. (Optimal dose not known)

COPD Flares
- About 50% of health care dollars spent on COPD are for flares
- 15% of patients with a flare require at least an ED visit, if not hospitalized
- Interventions that can decrease the frequency and/or severity of flares include:
  - Smoking cessation
  - Pulmonary rehabilitation
  - Optimizing maintenance bronchodilators
  - Adding inhaled corticosteroids to LABA (FEV1 < 50% predicted)

Useful Resources for Patients
- National Lung Health Education Program http://www.nhlhp.org/
- The American Lung Association http://www.lungusa.org
- COPD Foundation http://www.copdfoundation.org

Useful Resources for Providers
- The Global Initiative for Chronic Obstructive Lung Disease (GOLD) http://www.goldcopd.com/
- Institute for Clinical Systems Improvement COPD Guidelines http://www.ICSI.org

Smoking Cessation Resources
- Smoke Free web site http://www.smokefree.gov/
- American Cancer Society quit smoking page http://www.cancer.org
- Nicotine Anonymity (Nicotherapies) http://www.nicotine-anonymity.org/
**Degree of Activity-Related Breathlessness**

- **0** only gets breathless with strenuous exercise.
- **1** gets short of breath when climbing one or two flights of stairs or walking at usual pace on level ground.
- **2** gets short of breath during slow-paced conversation.
- **3** gets short of breath when dressing or undressing.
- **4** is too short of breath to carry on a conversation at usual pace.

**Modified Medical Research Council Dyspnea Scale**

1. "I only get breathless with strenuous exercise."  (0)
2. "I get breathless when I walk up stairs or Climb a flight of stairs without help."  (1)
3. "I get breathless when I walk half a flight of stairs or walk at a normal pace on level ground."  (2)
4. "I get breathless when I walk less than 100 yards or walk at a slow pace on level ground."  (3)
5. "I get breathless when I walk 100 yards or less, or I am too breathless to carry on a conversation at usual pace."  (4)

**Criteria for Hospitalization**

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Score</th>
</tr>
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<tbody>
<tr>
<td>Wheezing</td>
<td>1</td>
</tr>
<tr>
<td>Increased cough</td>
<td>1</td>
</tr>
<tr>
<td>Change in sputum</td>
<td>1</td>
</tr>
<tr>
<td>Increased rate of respiration</td>
<td>1</td>
</tr>
<tr>
<td>Use of accessory muscles for respiration</td>
<td>1</td>
</tr>
</tbody>
</table>

**Key Points**

- **Avoid**
  - Failing to recognize COPD exacerbations
  - Smoking
  - Untreated infections
  - Every exacerbation requires medical attention

- **Advise**
  - Smoking cessation
  - Avoiding environmental triggers
  - Early identification of exacerbations

- **Assess**
  - Knowledge of the COPD action plan
  - Smoking status
  - Use of medications

- **Assist**
  - Development of individualized care plans

- **Arrange**
  - Referral to pulmonary rehabilitation

**Pulmonary Rehabilitation**

- **Components of Effective Pulmonary Rehabilitation Programs**
  - Exercise program
  - Self-management education
  - Dietary supplementation
  - Social considerations

**Elderly Change in mental status
Severe COPD Cyaosis
Frequent flares High-risk comorbidities (eg, CHF, CAD)
- \( \text{FEV}_1 \% \) of predicted
- \( \text{FEV}_1 / \text{FVC} \% \) of predicted

**Treatment of COPD Flares**

- **Symptoms of a COPD Flare**
  - Increased breathlessness
  - Productive cough
  - Change in sputum
  - Increased rate of respiration
  - Use of accessory muscles for respiration

- **Symptoms of a COPD Flare**
  - Increased cough
  - Change in sputum
  - Increased rate of respiration
  - Use of accessory muscles for respiration

- **Clinical Pearls for Drug Use in COPD**
  - Use of inhaled corticosteroids (ICS) and long-acting bronchodilators (LABA) is recommended for patients with COPD who have had exacerbations or who are at high risk of exacerbations.
  - Avoid long-acting agents to short-acting agents.
  - Review medication compliance and proper medication use.
  - Ensure that patients can use their inhalational devices properly.

**Useful Resources for Patients**

- **American Lung Association**
  - Better Breathers Club (American Lung Association affiliated COPD support group information) http://www.lungusa.org
  - Smoking Cessation Resources
  - National Lung Health Education Program http://www.nlhep.org
  - The American Lung Association in Arizona: www.lung.org/az

**Clinical Pearls for Drug Use in COPD**

- **Timed Trials of Expiration**
  - **Increased breathlessness**
  - **Increased rate of respiration**
  - **Use of accessory muscles for respiration**

**Severe Disability**

- **Onset of Symptoms**
  - **Death**
  - **Severe Disability**
  - **Onset of Symptoms**
  - **Death**

**Useful Resources for Providers**

- **The Global Initiative for Chronic Obstructive Lung Disease** (GOLD) http://www.goldcopd.com/
- **Institute for Clinical Systems Improvement COPD Guidelines** http://www.icsi.org/
- **American Thoracic Society** http://www.thoracic.org
Pulmonary Rehabilitation

Benefits of Pulmonary Rehabilitation

Improved

• Exercise performance
• Secondary morbidities

Rehabilitation

• Reduced severity of symptoms (eg, dyspnea)
• Health care costs

Who Should Be Eligible?

• Patients with significant physical disability
• Patients with uncontrolled comorbidities (eg, unstable cardiac disease, severe neurologic problems)

Criteria for Hospitalization

Symptoms worsen in severity:

1. Wheezing
2. Increased cough/mucus
3. Increased heart rate
4. Decreased FEV

Increased breathlessness with:

1. Activity on the level
2. Activity up stairs
3. Activity in the car
4. Lifting heavy weight
5. Walking on the level

Symptoms of a COPD Flare

Increased breathlessness with:

1. Activity on the level
2. Activity up stairs
3. Activity in the car
4. Lifting heavy weight
5. Walking on the level

Increased breathlessness with:

1. Activity on the level
2. Activity up stairs
3. Activity in the car
4. Lifting heavy weight
5. Walking on the level

Costs of COPD Flares

About 50% of health care dollars spent on COPD are for flares

Frequent flares

High-risk comorbidities (eg, CHF, CAD)

Interventions that can decrease the frequency and/or severity of COPD Flares

• Use of a COPD Action Plan for the patient
• Starting prednisone and antibiotics early in the appropriate patient

-agonists (eg, albuterol and levalbuterol) and short-acting anticholinergics (eg, ipratropium) which may be used as-needed, regularity, or intensified for treatment of worsening symptoms.

Treatment of COPD Flares

Treatment of COPD Flares

Symptoms that last for 6–12 weeks should be evaluated by a physician and a management plan developed

1. Listen to patient
2. Take a history
3. Perform an exam
4. Use of a COPD Action Plan for the patient

Useful Resources for Patients

• National Lung Health Education Program
• National Heart, Lung, and Blood Institute Information
• The American Lung Association in Colorado

Useful Resources for Providers

• The Global Initiative for Chronic Obstructive Lung Disease (GOLD) http://www.goldcopd.org
• Institute for Clinical Systems Improvement COPD Guidelines http://www.icri.org
• American Thoracic Society http://www.thoracic.org

Smoke-Free Web sites http://www.smokefree.org
• Smoking and health: key facts and questions http://www.cancer.org
• Nicotine Anonymous (NicAnon) http://www.nicotine-anon.org
• AOD-GAH
• Better Brochures Club (American Lung Association affiliated COPD support group information) http://www.lungusa.org

The use of drugs of different mechanisms and adding long-acting agents to short-acting agents

Consider adding inhaled corticosteroids with long-acting bronchodilators in COPD patients when one or more more COPD flares each year

If infection is utilized, discontinue ipratropium (questionable benefit of ipratropium if receiving budesonide, likely more anticholinergic side-effects if used in combination)

COPD patients have a marked increase in risk of heart attack (heart disease is the leading cause of death in COPD)

Use of selective β-blockers are generally safe in COPD patients, but may increase risk of bronchospasm if concurrent asthma

Non-selective agents (eg, propranolol and carvedilol) should generally be avoided in COPD

Selective β-blockers (propranolol, nebivolol, and atenolol) are preferred in patients with obstructive lung disease

Depression is common in COPD; consider anti-depressants in appropriate patients

Use of antidepressants and narcotics with caution, especially in combination and in COPD patients who have high carbon dioxide levels ("CO2" retaliates)

Use therapies to prevent COPD-associated osteoporosis in COPD patients who use prednisone and/or long-acting β-agonists

Utilizing inhalers to LABA/FEV1 = 50% predicted

Use of COPD Action Plan for the patient, starting prednisone and antibiotics early in the appropriate patient may prevent acute care visits

The modified MRC scale (0–4) can also be used for calculation of BODE index, a prognostic scoring system for COPD

Note: The modified Medical Research Council (MRC) Dyspnea scale is an objective questionnaire used to measure perceived respiratory disability associated with daily activities (eg, walking up stairs, going shopping) and may be beneficial as a supplement to spirometry in the diagnosis of COPD.
Chronic obstructive pulmonary disease (COPD) is characterized by air flow limitation that is not fully reversible. The air flow limitation is usually progressive and associated with abnormal inflammatory response of the lung to noxious particles or gases. The chronic air flow limitation characteristic of COPD is caused by a mixture of small airway disease (obstructive bronchiolitis) and parenchymal destruction (emphysema); the relative contributions of which vary from person to person.

### Burden of COPD

<table>
<thead>
<tr>
<th>United States</th>
<th>Minnesota</th>
</tr>
</thead>
<tbody>
<tr>
<td>- While other major causes of death have been decreasing, COPD mortality has continued to rise.</td>
<td></td>
</tr>
<tr>
<td>- COPD is the 4th leading cause of death.</td>
<td></td>
</tr>
<tr>
<td>- 12 million Americans are diagnosed with COPD; research shows that many do not get optimal treatment.</td>
<td></td>
</tr>
<tr>
<td>- An additional 12 million Americans may have COPD and remain undiagnosed.</td>
<td></td>
</tr>
<tr>
<td>- In 2004, the average hospitalization for COPD was $17,066.</td>
<td></td>
</tr>
<tr>
<td>- Two-thirds of patients with COPD receive their care from primary care providers.</td>
<td></td>
</tr>
<tr>
<td>- COPD-related emergency department visits have increased by nearly 250% between 1996 and 2005.</td>
<td></td>
</tr>
<tr>
<td>- Males have a higher death rate due to COPD, but females are quickly closing the gap.</td>
<td></td>
</tr>
</tbody>
</table>

### Key indicators for considering COPD diagnosis

Consider COPD and perform spirometry if any of these indicators are present in an individual over age 40. These indicators are not diagnostic themselves, but the presence of multiple key indicators increases the probability of a diagnosis of COPD. Spirometry is essential for diagnosis and provides a useful description of the severity of pathological changes in COPD.

- **Dyspnea** that is:
  - Progressive (worsens over time)
  - Usually worse with exercise
  - Persistent (present every day)
  - Described by the patient as an “increased effort to breathe,” “heaviness,” “air hunger,” or “gasping”

*Dyspnea is the symptom that most interferes with a patient’s daily life and health status. When taking a medical history, explore the impact of dyspnea and other symptoms on daily activities, work, and social activities.

- **Chronic Cough** may be intermittent and may be unproductive.

- **Chronic sputum production**: Any pattern of chronic sputum production may indicate COPD.

### History of exposure to risk factors

- Tobacco smoke
- Occupational dusts and chemicals
- Smoke from home cooking and heating fuels

### Reducing risk factors

- Reduction of total personal exposure to tobacco smoke, occupational dusts and chemicals, and indoor/outdoor air pollutants
- Smoking cessation is the single most effective way to reduce the risk of developing COPD in most people.

References:


Supported by Boehringer Ingelheim Pharmaceuticals, Inc.
### COPD treatment at a glance

<table>
<thead>
<tr>
<th>Stage</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
<th>Very Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Spirometric values</strong></td>
<td>FEV1/FVC &lt; 70% FEV1 ≥ 80% predicted</td>
<td>FEV1/FVC &lt; 70% FEV1 50-80% predicted</td>
<td>FEV1/FVC &lt; 70% FEV1 30-50% predicted</td>
<td>FEV1/FVC &lt; 70% FEV1 &lt; 30% predicted or FEV1 &lt; 50% predicted plus chronic respiratory failure</td>
</tr>
<tr>
<td><strong>Symptoms</strong></td>
<td>Chronic cough, sputum production (These may be present but not always. Usually patient is unaware that lung function is abnormal.)</td>
<td>Shortness of breath, typically on exertion, cough, sometimes present, sputum production, sometimes present</td>
<td>Greater shortness of breath, reduced exercise capacity, fatigue, repeated exacerbations that almost always have impact on patient’s quality of life</td>
<td>Respiratory failure, Cor Pulmonale (right heart failure), Decreased quality of life</td>
</tr>
<tr>
<td><strong>Active reduction of risk factor(s); influenza vaccination; short-acting bronchodilator (when needed)</strong></td>
<td>Add regular treatment with one or more long-acting bronchodilators (when needed); rehabilitation</td>
<td>Add inhaled corticosteroids if repeated exacerbations</td>
<td>Add long term oxygen if chronic respiratory failure, Consider surgical treatments</td>
<td></td>
</tr>
</tbody>
</table>

### Managing stable COPD

<table>
<thead>
<tr>
<th>Education</th>
<th>Pharmacologic treatment</th>
<th>Non-pharmacologic treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bronchodilators</strong></td>
<td>1. β2-agonists (short-acting and/or long-acting)</td>
<td>Pulmonary Rehabilitation Goals:</td>
</tr>
<tr>
<td></td>
<td>2. Anticholinergics (short-acting or long-acting)</td>
<td>• Reduce symptoms</td>
</tr>
<tr>
<td></td>
<td>3. Combination (short-acting β2-agonist plus anticholinergic)</td>
<td>• Improve quality of life</td>
</tr>
<tr>
<td><strong>Corticosteroids</strong></td>
<td>1. Inhaled</td>
<td>• Increase physical and emotional participation in everyday activities</td>
</tr>
<tr>
<td></td>
<td>2. Combination (inhaled corticosteroid plus long-acting β2-agonist)</td>
<td><strong>Components of a rehab program:</strong></td>
</tr>
<tr>
<td><strong>Vaccines</strong></td>
<td>1. Influenza (yearly)</td>
<td>1. Exercise training</td>
</tr>
<tr>
<td></td>
<td>2. Pneumococcal</td>
<td>2. Nutrition</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Education</td>
</tr>
</tbody>
</table>

### Management of COPD exacerbation at home

- **Initiate or increase short acting bronchodilator therapy**
  - **Reassess within hours**
  - Resolution or improvement of signs and symptoms
  - **No resolution or no improvement**
  - **Add oral glucocorticosteroids**
  - **Reassess within hours**
  - Worsening of signs and symptoms
  - Refer to hospital
Primary care providers have a key role in the diagnosis and management of COPD.

Consider diagnosis of COPD in adults with shortness of breath, with or without symptoms of cough and sputum production.

Risk factors other than cigarette smoking history are important. Ten to 20 percent of cases may be due to environmental and occupational exposures.

Pulmonary function testing is useful for determining the severity of COPD and distinguishing from asthma.

Therapies are effective. Proactive treatment can improve the quality of life for patients with COPD.

**WHY COPD? WHY NOW?**

- While other major causes of death have been decreasing, COPD mortality has continued to rise.
- COPD is the 4th leading cause of death.
- 12 million Americans are diagnosed with COPD; research shows that many do not get optimal treatment.
- An additional 12 million Americans may have COPD and remain undiagnosed.
- Recent advances in treatment for COPD offer real opportunities to improve your patient’s quality and length of life.

**RISK FACTORS**

- Look for COPD in patients who are over 40 and have:
  - Persistent or progressive dyspnea
  - Chronic cough or sputum production
  - Decline in level of activity

(continued on back)
risk factors

- COPD is more likely if there is a history of smoking.
- Genetic factors and environmental or occupational exposures may also play a role: as many as 1 out of 6 Americans with COPD has never smoked.

diagnosis: pulmonary function testing

- Perform or refer for a lung function test—spirometry—to determine the severity. Spirometry with bronchodilator testing may distinguish COPD from asthma.
- A criterion for diagnosis of COPD is a postbronchodilator FEV₁/FVC < 0.7.

treatment

- Aggressive management of COPD can make a difference for the patient.
- Advances in therapies have been shown to improve survival or quality of life for COPD patients.
- COPD patients should receive professional assistance for smoking cessation.
SPIROMETRY BASICS

Simple, inexpensive, and noninvasive, spirometry is a versatile measure of lung function and is the most objective, reproducible test for COPD. Spirometry measures the volume of air forcefully exhaled from the point of maximal inspiration and the amount of time (in seconds) taken to complete. 

In obstructive lung disease, such as COPD, lung volume may be normal, but air flow is diminished. Conversely, in restrictive lung disease, such as pulmonary fibrosis, lung volume is reduced, but air flow may be normal. Postbronchodilator spirometry can be used for the differential diagnosis of COPD and asthma because it can confirm the partially reversible airway limitation that is characteristic of COPD.

PERFORMING SPIROMETRY

Spirometry can be performed in the primary care setting, provided that good skills training and an ongoing quality assurance program are available. To ensure a meaningful test result, patients should be fully instructed as follows:

- Explain or demonstrate how the procedure works to aid compliance and ease anxiety
- Make sure patients are seated upright rather than bent over
- Place and adjust nose clips to prevent air leakage
- Instruct patients to breathe in as deeply as they can and exhale as forcefully as they can. For a COPD diagnosis, an expiratory time of at least 6 seconds generally is recommended

REFERENCES


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A healthcare practitioner educational resource provided by Boehringer Ingelheim Pharmaceuticals, Inc.
PERFORMING SPIROMETRY (cont.)

Accurate spirometry requires three acceptable spirometry tests that demonstrate reproducibility. The FVC and FEV₁ values from these three tests should vary by no more than 5% or 100 mL, whichever is greater. The FEV₁/FVC ratio should be taken from the technically acceptable tests with the largest sum of FVC and FEV₁.¹

SPIROMETRY MEASUREMENTS

The following spirometric measurements are used in diagnosing COPD:

- **FVC (forced vital capacity):** maximum volume of air that can be exhaled during a forced maneuver.⁴
- **FEV₁ (forced expiratory volume in 1 second):** volume exhaled in the first second of this maneuver.⁴
- **FEV₁/FVC:** the ratio of these 2 measurements should be calculated.⁴

In normal adults, the ratio FEV₁/FVC is between 70% and 80%; a value less than 70% indicates airflow limitation and the possibility of COPD.⁴

INTERPRETING THE RESULTS

Spirometry measurements are evaluated by comparison with reference values based on age, height, sex, and race.⁴

The major differential diagnosis for COPD is asthma. Although a clear distinction between the two is not always possible, postbronchodilator spirometry may confirm the partially reversible airflow obstruction characteristic of COPD.⁴ For in-office classification of COPD, practitioners can use postbronchodilator spirometry values expressed as a percentage of the predicted normal value range for the individual:

<table>
<thead>
<tr>
<th>COPD DISEASE CLASSIFICATIONS**</th>
<th>FEV₁/FVC</th>
<th>FEV₁ % predicted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild COPD</td>
<td>&lt;0.7</td>
<td>≥80</td>
</tr>
<tr>
<td>Moderate COPD</td>
<td>&lt;0.7</td>
<td>50 to &lt;80</td>
</tr>
<tr>
<td>Severe COPD</td>
<td>&lt;0.7</td>
<td>30 to &lt;50</td>
</tr>
<tr>
<td>Very Severe COPD</td>
<td>&lt;0.7</td>
<td>&lt;30 or &lt;50 with chronic respiratory failure</td>
</tr>
</tbody>
</table>

*COPD classification based on postbronchodilator spirometry.

FEV₁ = The volume of air exhaled in 1 second.

FVC = Forced vital capacity; the volume of air that can be exhaled.

% predicted = Values corrected for age, sex, ethnicity, and height.

Adapted from Global Initiative for Chronic Obstructive Lung Disease (GOLD).⁴

If spirometry is performed at a laboratory, it is important for physicians to know what reference values the lab is using for interpretation. While the theory behind spirometry is fairly simple, test procedures have to be handled with care and results interpreted with an understanding of test parameters to decide what constitutes a normal value for the particular patient.⁴

A HEDIS® MEASURE FOR SPIROMETRY

The National Committee for Quality Assurance (NCQA) has recognized the importance of COPD with a HEDIS measure for spirometry. The measure targets the use of spirometry testing in assessment and diagnosis and determines whether spirometry was included in the clinical workup and assessment of a new diagnosis/new onset of COPD.² The CPT codes used to identify spirometry testing in the HEDIS measure are 94010, 94014, 94015, 94016, 94060, 94070, 94620.⁵

INTERPRETING THE RESULTS

Spirometry measurements are evaluated by comparison with reference values based on age, height, sex, and race.⁴

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<td>30 to &lt;50</td>
</tr>
<tr>
<td>Very Severe COPD</td>
<td>&lt;0.7</td>
<td>&lt;30 or &lt;50 with chronic respiratory failure</td>
</tr>
</tbody>
</table>

*COPD classification based on postbronchodilator spirometry.

FEV₁ = The volume of air exhaled in 1 second.

FVC = Forced vital capacity; the volume of air that can be exhaled.

% predicted = Values corrected for age, sex, ethnicity, and height.

Adapted from Global Initiative for Chronic Obstructive Lung Disease (GOLD).⁴

If spirometry is performed at a laboratory, it is important for physicians to know what reference values the lab is using for interpretation. While the theory behind spirometry is fairly simple, test procedures have to be handled with care and results interpreted with an understanding of test parameters to decide what constitutes a normal value for the particular patient.⁴

*A HEDIS® [Healthcare Effectiveness Data and Information Set] is a registered trademark of the National Committee for Quality Assurance (NCQA).
Definitions:
Forced Vital Capacity (FVC): the volume delivered during an expiration made as forcefully and completely as possible starting from full inspiration
Forced Expiratory Volume in the first second (FEV₁): the volume delivered in the first second of an FVC maneuver
Obstruction: flow limitation is observed during spirometry. If the observed FEV₁/FVC ratio is down 10 or more from the predicted, obstruction is present.
Restriction: Spirometry with low FVC (< 80%) can only suggest restriction. Further testing is needed to confirm.

Accepted criteria from the American Thoracic Society
- Good start of test/rapid rise
- Single, clearly defined peak
- Good end of test (6 sec for adults/3 sec for children)
- Free from artifacts (i.e. cough, glottic closure, leaking)

Examples of unacceptable tests
- Slow start of test
- Rounded peak
- Early termination
- Cough in first second

Repeatability criteria for the American Thoracic Society:
Three (3) acceptable tests must be performed with two (2) tests having FEV₁ and FVC within .15L or 150mL of each other.

Coaching patients through spirometry:
Instruct patient to breathe normally. When patient is ready, have him/her take his/her deepest breath and blow as hard as he/she can as long as he/she can. There is a learning curve for spirometry. Use positive reinforcement to build on the patient's successes. (For example, “That was really good; this time take an even deeper breath.”) Always demonstrate the spirometry maneuver, especially if language is a barrier or communication issues arise.

Appropriate bronchodilator use:
If testing for reversibility, give patient 4 puffs of bronchodilator with a spacer or a standard nebulized dose. Wait 15 minutes after last dose to perform post-bronchodilator maneuver. If a patient cannot perform acceptable baseline maneuvers according to American Thoracic Society criteria or there is no evidence of airflow obstruction, do NOT give a bronchodilator.

References:

Supported by Boehringer Ingelheim Pharmaceuticals, Inc.
SPIROMETRY INTERPRETATION

**ASTHMA**

- **Is this a good test? (Acceptability and repeatability criteria on reverse)**
- **Check PVC. If normal (≥80%), restriction can be ruled out. If reduced, further testing is needed to differentiate restriction from obstruction with air-trapping.**

**PRE-BRONCH**

<table>
<thead>
<tr>
<th>Observations</th>
<th>Predicted</th>
<th>% Predicted</th>
</tr>
</thead>
<tbody>
<tr>
<td>FVC (L)</td>
<td>2.09</td>
<td>5.68</td>
</tr>
<tr>
<td>FEV1 (L)</td>
<td>1.06</td>
<td>2.08</td>
</tr>
<tr>
<td>FEV1/FVC (%)</td>
<td>50%</td>
<td>75%</td>
</tr>
</tbody>
</table>

**POST-BRONCH**

<table>
<thead>
<tr>
<th>Observations</th>
<th>% Predicted</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>FVC (L)</td>
<td>2.03</td>
<td>-3%</td>
</tr>
<tr>
<td>FEV1 (L)</td>
<td>1.07</td>
<td>2%</td>
</tr>
<tr>
<td>FEV1/FVC (%)</td>
<td>53%</td>
<td>5%</td>
</tr>
</tbody>
</table>

**COPD**

- **Is it reversible?**
  - FEV1 ≥ 12% and ≥200 mL in youths and adults 12+
  - FEV1 ≥ 15% and ≥200 mL in children <12

**PRE-BRONCH**

<table>
<thead>
<tr>
<th>Observations</th>
<th>Predicted</th>
<th>% Predicted</th>
</tr>
</thead>
<tbody>
<tr>
<td>FVC (L)</td>
<td>5.25</td>
<td>5.68</td>
</tr>
<tr>
<td>FEV1 (L)</td>
<td>3.59</td>
<td>4.64</td>
</tr>
<tr>
<td>FEV1/FVC (%)</td>
<td>68%</td>
<td>82%</td>
</tr>
</tbody>
</table>

**POST-BRONCH**

<table>
<thead>
<tr>
<th>Observations</th>
<th>% Predicted</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>FVC (L)</td>
<td>5.35</td>
<td>94%</td>
</tr>
<tr>
<td>FEV1 (L)</td>
<td>4.14</td>
<td>89%</td>
</tr>
<tr>
<td>FEV1/FVC (%)</td>
<td>77%</td>
<td>13%</td>
</tr>
</tbody>
</table>

**Sample written COPD interpretation:**

The FEV1/FVC ratio being down more than 10 from predicted is consistent with air flow obstruction. The FEV1 being 77% of predicted suggests a moderately-severe air flow obstruction (based on the 2005 ATS/ERS guidelines for severity of obstruction). No significant response to albuterol was revealed as the FEV1 only increased 2%. Further testing revealed a diffusion capacity of 50% of predicted. The lateral chest film showed signs of hyperinflation and flattened diaphragm and the chest CT had classic changes seen in emphysema. (Based on the 2007 GOLD guidelines for COPD severity), this 74 year old female with a baseline FEV1 of 51% has Stage II moderate COPD.

**Sample written asthma interpretation:**

The FEV1/FVC ratio being down more than 10 from predicted is consistent with air flow obstruction. The FEV1 being 77% of predicted suggests mild air flow obstruction. The post bronchodilator study reveals a significant response to albuterol with the FEV1 increasing 15% or 550cc. This finding is consistent with diagnosis of asthma although clinical correlation is needed to confirm. (Based on the 2007 NAEPP guidelines for asthma severity), this 28 year old male with a baseline FEV1 of 77% has moderate persistent asthma.

**AT/ERS* Degree of severity of obstruction based on FEV1**

<table>
<thead>
<tr>
<th>Degree of severity</th>
<th>FEV1 % predicted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild</td>
<td>&gt;70</td>
</tr>
<tr>
<td>Moderate</td>
<td>60-69</td>
</tr>
<tr>
<td>Moderately severe</td>
<td>50-59</td>
</tr>
<tr>
<td>Severe</td>
<td>35-49</td>
</tr>
<tr>
<td>Very severe</td>
<td>&lt;35</td>
</tr>
</tbody>
</table>

*American Thoracic Society/European Respiratory Society
# Differential Diagnosis

The onset of COPD is insidious. Pathological changes may begin years before symptoms appear. The major differential diagnosis is asthma, and in some cases, a clear distinction between COPD and asthma is not possible. Some people have coexisting asthma and COPD. Other potential diagnoses are easier to distinguish from COPD:

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Suggested Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPD</td>
<td>- Onset is as early as age 40</td>
</tr>
<tr>
<td></td>
<td>- Slow progression of symptoms</td>
</tr>
<tr>
<td></td>
<td>- ≥10 years of smoking one pack per day or equivalent</td>
</tr>
<tr>
<td></td>
<td>- Dyspnea during exercise</td>
</tr>
<tr>
<td></td>
<td>- Partially reversible airflow limitation</td>
</tr>
<tr>
<td>Asthma</td>
<td>- Onset early in life</td>
</tr>
<tr>
<td></td>
<td>- Symptoms vary from day to day</td>
</tr>
<tr>
<td></td>
<td>- Symptoms during the night/early morning</td>
</tr>
<tr>
<td></td>
<td>- Family history of asthma</td>
</tr>
<tr>
<td></td>
<td>- Largely reversible airflow limitation</td>
</tr>
<tr>
<td>Congestive heart failure</td>
<td>- Fine basilar crackles on auscultation</td>
</tr>
<tr>
<td></td>
<td>- Chest X-ray shows dilated heart, pulmonary edema</td>
</tr>
<tr>
<td></td>
<td>- Volume restriction, not airflow limitation, on pulmonary function tests</td>
</tr>
<tr>
<td>Bronchiectasis</td>
<td>- Large volume of purulent sputum</td>
</tr>
<tr>
<td></td>
<td>- Commonly associated with bacterial infection</td>
</tr>
<tr>
<td></td>
<td>- Coarse crackles/dribbling on auscultation</td>
</tr>
<tr>
<td></td>
<td>- Chest X-ray/CT shows bronchial dilation and bronchial wall thickening</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>- Onset at all ages</td>
</tr>
<tr>
<td></td>
<td>- Chest X-ray shows lung infiltrates</td>
</tr>
<tr>
<td></td>
<td>- Microbiological confirmation</td>
</tr>
<tr>
<td></td>
<td>- High local prevalence of tuberculosis</td>
</tr>
<tr>
<td>Obstructive bronchiolitis</td>
<td>- Younger onset and in nonsmokers</td>
</tr>
<tr>
<td></td>
<td>- History of rheumatoid arthritis/tube exposure</td>
</tr>
<tr>
<td></td>
<td>- CT on expiration shows hypodense areas</td>
</tr>
<tr>
<td>Diffuse panbronchiolitis</td>
<td>- Affects mostly male nonsmokers</td>
</tr>
<tr>
<td></td>
<td>- Almost all have chronic sinusitis</td>
</tr>
<tr>
<td></td>
<td>- Chest X-ray and HRCT show diffuse small centrilobular nodular opacities and hyperinflation</td>
</tr>
</tbody>
</table>

CT = computed tomography; HRCT = high-resolution computed tomography

These features tend to be characteristic of the respective disease but do not occur in every case. For example, a person who has never smoked may develop COPD, asthma may develop in adult and even elderly patients.

## References

While cigarette smoke is the primary risk factor for COPD, exposure to occupational chemicals/dusts and indoor air pollution from cooking and heating in poorly ventilated dwellings are also significant risk factors.2

### Diagnostic and Classification Tests

#### Spirometry

Spirometry measures airflow limitation and is necessary to confirm a diagnosis of COPD. Postbronchodilator spirometry confirms the partially reversible component of airway obstruction in COPD patients.6

The current HEDIS® spirometry measure targets improving the use of spirometry in confirming a COPD diagnosis. The measure determines whether spirometry was included in the clinical workup and assessment of a new diagnosis/onset of COPD.6

The postbronchodilator spirometric values and disease classifications for asthma and COPD are:

<table>
<thead>
<tr>
<th>COPD DISEASE CLASSIFICATIONS</th>
<th>Severity</th>
<th>FEV1/FVC</th>
<th>FEV1, % predicted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild COPD</td>
<td>&lt; 0.7</td>
<td>≥ 80</td>
<td></td>
</tr>
<tr>
<td>Moderate COPD</td>
<td>&lt; 0.7</td>
<td>50 to &lt; 80</td>
<td></td>
</tr>
<tr>
<td>Severe COPD</td>
<td>&lt; 0.7</td>
<td>30 to &lt; 50</td>
<td></td>
</tr>
<tr>
<td>Very Severe COPD</td>
<td>&lt; 0.7</td>
<td>≤ 30 or &lt; 50 with chronic respiratory failure</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ASThma DISEASE CLASSIFICATIONS</th>
<th>Severity</th>
<th>PEF variability</th>
<th>FEV1 or PEF, %</th>
<th>PEF, % predicted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild intermittent</td>
<td>&lt; 20</td>
<td>≥ 80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mild persistent</td>
<td>20 to 30</td>
<td>≥ 80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate persistent</td>
<td>&gt; 30</td>
<td>&gt; 60 to &lt; 80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severe persistent</td>
<td>&gt; 30</td>
<td>≤ 60</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Chest Radiography

Chest radiography can be useful in differential diagnosis and should be obtained on all patients. It is helpful in excluding other diseases and establishing the presence of significant comorbidities such as cardiac failure.2,6

Severe emphysema can be diagnosed clearly from chest X-rays; mild emphysema is not as clearly evident on X-rays, and moderate emphysema is diagnosed from chest X-rays only about 50% of the time.1

### Physical Examination

Though important to patient care, physical examinations rarely diagnose COPD. This is because the physical signs of airflow limitation are usually not present until significant lung impairment has occurred. However, the following are some things to look for that may aid in COPD diagnosis2:

- Central cyanosis
- Chest wall abnormalities (hyperinflation, “barrel chest,” protruding abdomen)
- Flattening of diaphragm
- Increased resting respiratory rate (20+ breaths per minute)
- Pursed-lip breathing, which may slow expiratory flow and permit more efficient lung emptying
- Resting muscle activation while supine. Use of the scalene and sternocleidomastoid muscles is an additional indicator of respiratory distress
- Ankle or lower leg edema can be a sign of heart failure

While cigarette smoke is the primary risk factor for COPD, indoor air pollution from cooking and heating in poorly ventilated dwellings is also significant risk factors.2
Anticholinergic Agents
The key mechanism of anticholinergic medications appears to be the blocking of muscarinic receptors (M1, M2, and M3). By blocking acetylcholine-mediated bronchoconstriction, the end result is bronchodilation.2
Side effects associated with anticholinergic therapy include dry mouth, glaucoma, and urinary retention.2

β2-Agonists
β2-agonists primarily relax airway smooth muscle by stimulating β2-adrenergic receptors. This, in turn, increases cyclic adenosine monophosphate (AMP) and produces functional antagonism to bronchoconstriction.1
Side effects are more frequent in oral therapy than inhaled therapy. They include palpitations and premature ventricular contractions, tremor, and sleep disturbance.3

Theophylline
Theophylline agents may act as nonselective phosphodiesterase inhibitors but have also been reported to have a range of nonbronchodilator actions.1
Theophylline requires careful dose management due to its potential toxicity and serious side effects, including ventricular and atrial rhythm disturbances and convulsions.1

CONCLUSION
For a discussion of specific bronchodilator treatment options for management of stable COPD, please refer to the Global Initiative for Chronic Obstructive Lung Disease (GOLD) Executive Summary (updated 2006) in the Guidelines and Resources section of the GOLD Web site. This is available at www.goldcopd.org.

References:

Boehringer Ingelheim Pharmaceuticals, Inc. has no ownership interest in any other organization that advertises or markets its disease management products and services.
A healthcare practitioner educational resource provided by
Boehringer Ingelheim Pharmaceuticals, Inc.
**USE OF MEDICATIONS IN THE MANAGEMENT OF STABLE COPD**

Although airway obstruction in COPD is only partially reversible, pharmacological treatments may:
- Prevent and control symptoms
- Reduce the severity and frequency of exacerbations
- Improve health status
- Increase exercise tolerance

**BRONchodILATORS IN STABLE COPD**

- Bronchodilator medications are central to symptom management in COPD.
- Inhaled therapy is preferred.
- The choice of β2-agonist, anticholinergic, theophylline, or combination therapy depends on availability and individual response in terms of symptom relief and side effects.
- Bronchodilators are prescribed as needed or for maintenance therapy to prevent or reduce symptoms.
- Long-acting inhaled bronchodilators are more effective and convenient than short-acting agents.
- Combining bronchodilators may improve efficacy and decrease the risk of side effects compared with increasing the dose of a single bronchodilator.

**OTHER AGENTS**

**Inhaled Corticosteroids**

The benefits of inhaled corticosteroids in treating COPD are much less dramatic than those seen in asthma. Their role in stable COPD management is limited to symptomatic patients with COPD with an FEV1 < 50% predicted (Stage III: Severe COPD and Stage IV: Very Severe COPD) and in treating patients who have experienced repeated exacerbations.

The dose-response relationships and long-term safety of inhaled corticosteroids in COPD are not known. Inhaled steroids are not approved for use in COPD as monotherapy.

**Recommended Therapy at Each Stage of COPD**

<table>
<thead>
<tr>
<th>COPD STAGE</th>
<th>Post-bronchodilator FEV₁</th>
<th>Short-acting Bronchodilators</th>
<th>Long-acting Bronchodilators</th>
<th>Inhaled Glucocorticoids</th>
</tr>
</thead>
<tbody>
<tr>
<td>I MILD</td>
<td>FEV₁ ≥ 80% predicted</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>II MODERATE</td>
<td>50% ≤ FEV₁ &lt; 80% predicted</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>III SEVERE</td>
<td>30% ≤ FEV₁ &lt; 50% predicted</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>IV VERY SEVERE</td>
<td>FEV₁ &lt; 30% predicted or FEV₁ &lt; 50% predicted plus chronic respiratory failure</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

*COPD definition includes FEV₁/FVC < 0.70 and post-bronchodilator FEV₁ values as described in table. FEV₁ = forced expiratory volume in 1 second.

**COMBINATION MEDICATIONS**

Currently, only a few types of combination medications are available. The following are the most common combinations:
- Short-acting β₂-agonist and short-acting anticholinergic
- Long-acting β₂-agonist and inhaled corticosteroid

Side effects are dependent on the medications in the combination and are described on pages 3 to 5 in the specific sections for these medications.

Spontaneous skin bruising has been known to occur. Other topical side effects include oropharyngeal candidiasis and hoarse voice due to pharyngeal deposition.
The goal of oxygen therapy is to provide oxygenation saturation of at least 90% at all activity levels.

**Key Points**
- Assess oxygenation during activities of daily living, with exertion, during sleep and with travel.
- All oxygen systems have different capabilities. Verify adequate oxygenation by assessing patient while using the same oxygen system they will use at home.
- If their current oxygen device cannot be adjusted to meet the patient’s oxygenation needs, try a different oxygen device.
- Many of the new portable oxygen systems utilize a conserving device. This delivers oxygen only on inspiration but not continuously. This allows the system to last longer, but it may not provide enough oxygen to meet the patients oxygenation requirements.

**How to assess need for oxygen**
Demonstration of hypoxemia can be accomplished by measuring oxygen saturation while the patient is breathing room air at rest and with a typical level of exertion, usually walking in a hallway.

Oxygen settings should be determined for use at rest, with a typical level of exertion and/or sleep. The goal is to maintain a saturation of >90%.

The majority of patients who are clinically stable when oxygen is prescribed will continue to need oxygen. If hypoxemia was identified during an exacerbation, recheck oxygenation in 30-90 days to determine if oxygen therapy can be discontinued.

**How to set oxygen level**
Long term oxygen therapy should be ordered for 24 hr/day and include ambulatory capability unless patients are:
1) incapable or unwilling to be mobile;
2) require oxygen only during sleep;
3) require oxygen only during exercise; or
4) refuse to use a portable device for ambulation.

Oxygen settings should be adjusted for activities of daily living (ADL), exertion and sleep to meet the individual patient’s needs.

If the patient is using a conserving device as part of their oxygen system, titration of the setting should be performed while the patient is using that system. This is particularly true during exercise conditions. The sleep oxygen flow rate can be set by increasing the daytime resting/ADL prescription 1 lpm or by ordering a nocturnal polysomnography or nocturnal pulse oximetry.

**Medicare criteria:**
- \( \text{PaO}_2 \leq 55 \text{ mmHg OR SaO}_2 \leq 88\% \)
- \( \text{PaO}_2=56-59 \text{ mmHg OR SaO}_2 =89\% \) requires a secondary diagnosis of:
  - Edema/congestive heart failure
  - Cor Pulmonale with P wave >3mm in lead II, III or AVF
  - Erythrocythemia with Hct 56%
  - Requires recertification and retesting 61 to 90 days after the initial start of therapy.
- \( \text{PaO}_2 \geq 60 \text{ mmHg OR SaO}_2 \geq 90\% \) coverage rare or unlikely; requires extensive physician documentation for approval.

**Oximetry Use**
Pulse oximetry is a good method for following trends in oxygen saturation and can be used for titrating the oxygen flow setting in stable patients with good circulation.

Patients and physicians should work together to determine if it is appropriate to have an oximeter for home use. Many patients find them helpful for adjusting their oxygen with different activity levels and to increase the duration of their oxygen supply. Some insurance plans may reimburse if is physician-prescribed.

**Components of an oxygen prescription**
The prescription should include the source of supplemental oxygen (gas or liquid), method of delivery, duration of use, and flow rate or conserving device setting at rest, during exercise, and during sleep.

You may also want to include, “Adjust oxygen setting to maintain a saturation of 90% at rest, with exertion and during sleep.”

Proper selection of equipment means matching device to the patients lifestyle and clinical needs. Consider:

- frequency and length of time (#if hours) patient is away from the house and the base refill unit
- equipment weight and duration of oxygen delivery
- capabilities and limitations of equipment
- how often the patient wants to leave the house—don’t limit mobility based on limited portable oxygen unit availability

<table>
<thead>
<tr>
<th>Definition</th>
<th>System types</th>
<th>Benefits</th>
<th>Drawbacks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Concentrator</strong></td>
<td>Units that separates oxygen from the air</td>
<td>Stationary unit: Airsep, DeVilbiss, Invacare, Respironics</td>
<td>Never needs to be refilled</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Personal Oxygen Concentrator (POC): Airsep, Lifestyle, Airsep Freestyle, EVO Centralair, InogenOne, Invacare XPO2, Respironics EverGo, Sequal Eclipse</td>
<td>Portable and lightweight</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Can be used as portable and/or stationary oxygen source</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Approved by FAA for airline travel*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Can be run by battery or electricity</td>
</tr>
<tr>
<td><strong>Compressed Gas Cylinders</strong></td>
<td>Metal tanks available in a variety of sizes that are filled with oxygen gas</td>
<td>Available in multiple sizes</td>
<td>Portable</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Continuous flow or conserving regulators are available</td>
</tr>
<tr>
<td><strong>Liquid Oxygen (LOX) Systems</strong></td>
<td>Thermos-type units that hold liquid oxygen which changes to a gas form as it warms</td>
<td>Home base unit</td>
<td>Some base units are small enough to fit in car for refill throughout the day</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>High flow capabilities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Portable unit: Escort, Helios, Marathon, Spirit</td>
<td>Lightweight</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Have continuous flow and/or conserving capabilities</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Patients can refill portable units as needed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>High flow capabilities</td>
</tr>
<tr>
<td><strong>Transfill Oxygen Systems</strong></td>
<td>Home concentrator unit that can refill specific compressed gas cylinders or portable liquid oxygen units for ambulation</td>
<td>Combines a stationary unit and portable unit: Invacare HomeFill II, Sunrise iFill, VIAspire</td>
<td>Does not require scheduling refill appointments with home care providers</td>
</tr>
<tr>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>

*Beginning May 2009, use of approved POC’s must be allowed on all flights originating or ending in the United States.

<table>
<thead>
<tr>
<th>Type of oxygen delivery</th>
<th>Definition</th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Continuous flow</strong></td>
<td>Delivers oxygen continuously throughout inhalation and exhalation</td>
<td>• Consistent amount of oxygen delivered&lt;br&gt;• An option for individuals with high oxygen needs</td>
<td>Portable units with continuous flow will not last as long as those with a conserving device</td>
</tr>
<tr>
<td><strong>Conserving device</strong></td>
<td>Delivers oxygen only during inhalation, when the product senses the inspiratory demand.</td>
<td>• Units are smaller, lighter and last longer</td>
<td>Number settings are considered reference points and should not be considered as providing the same oxygen level on all systems&lt;br&gt;• As respiratory rate ↑, delivered oxygen level will ↓&lt;br&gt;• Will not adequately oxygenate all patients, they need to be tested on the device they are using. All dose settings are different.</td>
</tr>
</tbody>
</table>
ASSESSING THE SEVERITY OF A COPD EXACERBATION

Assessment of COPD exacerbation severity should be based on the patient’s prior medical history, as well as preexisting comorbidities, symptoms, physical examination, arterial blood gas measurements, and other laboratory tests. Specific information is required on the frequency and severity of attacks of breathlessness and cough, sputum volume and color, and limitation of daily activities.1

<table>
<thead>
<tr>
<th>MEDICAL HISTORY</th>
<th>SIGNS OF SEVERITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Severity of COPD based on the FEV1</td>
<td>• Increased dyspnea, chest tightness, occasional wheezing, and increased cough and sputum</td>
</tr>
<tr>
<td>• Duration of symptom worsening or the development of new symptoms</td>
<td>• Use of accessory respiratory muscles</td>
</tr>
<tr>
<td>• Number of previous episodes (exacerbations/hospitalizations)</td>
<td>• Paradoxical chest wall movements</td>
</tr>
<tr>
<td>• Comorbidities</td>
<td>• Signs of right heart failure</td>
</tr>
<tr>
<td>• Present treatment regimen</td>
<td>• Development of peripheral edema</td>
</tr>
</tbody>
</table>

Table 1. Assessment of COPD Exacerbations: Medical History and Signs of Severity1

DISCHARGE ASSESSMENT

Opportunities for prevention of future exacerbations should be reviewed before discharge, with particular attention to:

- Smoking cessation
- Current vaccination (influenza, pneumococcal vaccines)
- Knowledge of current therapy (including inhaler technique)
- How to recognize symptoms of exacerbations

GOLD recommends assessing the following items 4 to 6 weeks after a patient is discharged from the hospital for exacerbations of COPD:

- Ability to cope in their usual environment
- FEV1 values
- Inhaler technique
- Understanding of their treatment regimen
- For patients with Stage IV: Very Severe COPD, the need for long-term oxygen therapy and/or home nebulizer should be considered1


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ACUTE COPD EXACERBATIONS

There is no universally accepted definition of acute exacerbation in chronic obstructive pulmonary disease (COPD). The Global Initiative for Chronic Obstructive Lung Disease (GOLD) defines a COPD exacerbation as an acute event characterized by a change in the patient’s baseline dyspnea, cough, and/or sputum that is beyond normal day-to-day variations. An exacerbation may warrant a change in the patient’s regular medication and, depending on severity, hospitalization.1

The main symptom of an exacerbation is increased breathlessness, and also often includes wheezing and chest tightness, increased cough and sputum, change of color and/or tenacity of sputum, and fever.1 Other conditions mimic COPD exacerbations and should be excluded. Differential diagnoses include pneumonia, congestive heart failure, myocardial ischemia, upper respiratory tract infection, pulmonary embolism, recurrent aspiration, and noncompliance with medications.1,2

Prevention, early detection, and prompt treatment of exacerbations can minimize the need for hospitalization. Hospital mortality of patients admitted for a COPD exacerbation is approximately 10%, and the long-term outcome is poor. Mortality reaches 40% in 1 year.1

CRITERIA FOR HOSPITAL ADMISSIONS

The GOLD Guidelines provide a range of criteria to consider for hospital/intensive care unit (ICU) admission for exacerbations of COPD:

<table>
<thead>
<tr>
<th>Table 2. Indications for Hospital Assessment or Admission for Exacerbations of COPD1</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Symptoms become more intense, such as sudden development of resting dyspnea</td>
</tr>
<tr>
<td>• Underlying COPD is severe</td>
</tr>
<tr>
<td>• New physical signs such as cyanosis and peripheral edema are evident</td>
</tr>
<tr>
<td>• Exacerbation fails to respond to initial medical management</td>
</tr>
<tr>
<td>• Comorbidities are significant</td>
</tr>
<tr>
<td>• Exacerbations are frequent</td>
</tr>
<tr>
<td>• New arrhythmias</td>
</tr>
<tr>
<td>• Uncertainty about diagnostic evaluation</td>
</tr>
<tr>
<td>• Patient is older</td>
</tr>
<tr>
<td>• Home support is insufficient</td>
</tr>
</tbody>
</table>

*Local resources need to be considered.

CRITERIA FOR ICU ADMISSIONS

<table>
<thead>
<tr>
<th>Table 3. Indications for ICU Admission of Patients With Exacerbations of COPD1</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Severe dyspnea that does not respond adequately to initial emergency therapy</td>
</tr>
<tr>
<td>• A change in mental status (confusion, lethargy, coma)</td>
</tr>
<tr>
<td>• Hypoxemia that is persistent or worsens (PaO2 &lt; 5.3 kPa, 40 mm Hg) and/or</td>
</tr>
<tr>
<td>• Hypercapnia that is severe or worsens (PaCO2 &gt; 8.0 kPa, 60 mm Hg) and/or</td>
</tr>
<tr>
<td>• Respiratory acidosis that is severe or worsens (pH &lt; 7.25) despite supplemental oxygen and noninvasive ventilation</td>
</tr>
<tr>
<td>• Invasive mechanical ventilation is needed</td>
</tr>
<tr>
<td>• Need for vasopressors because of hemodynamic instability</td>
</tr>
</tbody>
</table>

*Local resources need to be considered.

INPATIENT TREATMENT OF COPD EXACERBATIONS

For a discussion of inpatient treatment options for acute exacerbations of COPD, please refer to the GOLD Executive Summary (updated 2006) in the Guidelines & Resources section of the GOLD Web site at http://www.goldcopd.org

*Local resources need to be considered.
The following questions can be utilized by healthcare practitioners (specifically case/care managers) to develop an assessment for individuals with a known diagnosis of COPD. The 2006 Global Initiative for Chronic Obstructive Lung Disease (GOLD) served as a basis for the content of the assessment questions. All or select questions may be utilized by the healthcare practitioner during a telephonic or face-to-face assessment. The sequencing of the questions can be organized to meet the needs of the person conducting the assessment. Responses to the questions may be utilized by the healthcare practitioner to determine the patient’s educational needs and to develop the nursing plan of care. Healthcare practitioners should also consider supplementing this assessment by adding questions that cover the following topics:
- Dyspnea scale
- Readiness to change
- Barriers to learning
- Depression screening
- Medication adherence and compliance
- Substance abuse screening
- Quality of life

**COPD ASSESSMENT**

Has a healthcare practitioner ever told you that you have COPD, chronic bronchitis, or emphysema?

- [ ] Yes (check all that apply)
  - [ ] COPD
  - [ ] Chronic bronchitis
  - [ ] Emphysema
- [ ] No
- [ ] Uncertain

At what age were you first told you had COPD?

_______ (enter age)

Did your doctor tell you what caused your COPD?

- [ ] No
- [ ] Yes
  - [ ] Tobacco smoke
  - [ ] Personal use
  - [ ] Environmental tobacco smoke
  - [ ] Hereditary (alpha-1 antitrypsin)
  - [ ] Occupational dusts and chemicals
  - [ ] Indoor pollutants
  - [ ] Low birth weight
  - [ ] Frequent respiratory infections

Have you ever had a breathing test called a spirometry test?

- [ ] No
- [ ] Yes (if yes, complete a, b, c, and d)

  a. Do you remember when you had the test?
     - [ ] No
     - [ ] Yes ___________ (enter date)
  
  b. Who ordered the test?
     - [ ] Primary care physician
     - [ ] Pulmonologist
     - [ ] Had the test while hospitalized
  
  c. Did your doctor review the results of the test with you?
     - [ ] Yes
     - [ ] No
  
  d. How often did your doctor recommend that you have a spirometry test?
     - [ ] Did not mention
     - [ ] Only once
     - [ ] Every year
     - [ ] When there is a change in my COPD
     - [ ] Other: ____________

Have you seen a pulmonologist (lung doctor) for your COPD in the past 12 months?

- [ ] No, I didn’t need to
- [ ] No, I would have liked to
- [ ] No, my primary care physician did not suggest it
- [ ] Yes (if yes, complete a, b, and c)

  a. Do you remember the date of your last visit?
     - [ ] Yes ___________ (enter date)
     - [ ] No
b. How often do you usually see the pulmonologist?
- Only one time
- Every year
- Several times a year

c. Who usually takes care of your COPD?
- Pulmonologist
- Primary Care Physician (PCP)

How often do you usually see the PCP for your COPD?
- Every year
- Twice a year
- Several times a year
- More than several times a year

Over the past 12 months, have you gone to a hospital emergency room for care related to your COPD?
- Yes
- No

Over the past 12 months, have you been admitted to a hospital for care related to your COPD?
- Yes
- No

Have you ever participated in a pulmonology rehabilitation program?
- Yes
  - Inpatient
  - Outpatient
- No

Is your physical activity limited by any condition?
- Yes
- No

Do you have any type of exercise routine?
- Yes
  - Please describe:
    - Walking
    - Low-impact exercise
    - Upper body weight training
    - Structured activity at a gym/fitness club
    - Other: ______________________
- No

Do you have a written COPD action plan or treatment plan that was developed by your doctor?
- Yes
  - If yes, when was it last updated? _____ (enter date)
- No

In addition to COPD, do you have any of the following health conditions?
- Heart failure
- Depression
- Diabetes
- Lung cancer
- Heart disease
- Asthma
- Osteoporosis
- Sleep apnea

Which of the following COPD symptoms would you say you experience on most days?
- Shortness of breath
  - If yes,
    - With strenuous exercise
    - When hurrying on the level or walking up a slight hill
    - After walking a few minutes on the level
    - When dressing or undressing
    - Too breathless to leave the house
- Cough
- Cough with mucus?
  - Yes
  - No
  - Yes (if yes, complete a, b, and c)
    a. How frequently do you cough up mucus?
      - Only with colds
      - Less than once a day
      - About once or twice a day
      - Many times per day
    b. What is the usual color of your mucus?
      - Colorless
      - White
      - Yellow
      - Green
      - Brown
    c. Are you aware of the “forceful coughing technique” that can help you keep your lungs clear?
      - Yes
      - No
Chronic Obstructive Pulmonary Disease (COPD) Care Management Assessment

What makes your COPD worse (triggers, irritants)? (check all that apply)
- [ ] Smoke
- [ ] Very cold air
- [ ] Strong odors
- [ ] Lung infection
- [ ] Traffic fumes and environmental pollutants
- [ ] Other: ________________________________

Do you generally experience a “good night’s sleep”
- [ ] Yes
- [ ] No

Where do you usually sleep?
- [ ] Standard bed
- [ ] Electric bed
- [ ] Chair/Recliner
- [ ] Sofa

How many pillows do you use when you sleep?
- [ ] 1
- [ ] 2
- [ ] 3
- [ ] >3 or wedge pillow

Have you ever had a lung infection?
- [ ] Yes
- [ ] No

Are you able to tell the signs and symptoms of a lung infection?
- [ ] Yes
  - If yes, please list the signs and symptoms.
    - [ ] Fever
    - [ ] Change in color of mucus
    - [ ] Change in amount or thickness of mucus
    - [ ] Increased shortness of breath

How many eight (8) oz. glasses of fluids do you drink in one day?
- [ ] 8 or more
- [ ] Less than 8

Did your doctor tell you to limit your fluids?
- [ ] Yes
- [ ] No

If you have felt panic or stress due to shortness of breath, what did you do?
- [ ] Use relaxation techniques
- [ ] Practice breathing exercises
- [ ] Take medications
- [ ] Use oxygen
- [ ] Call the doctor
- [ ] Call EMS

Has a healthcare practitioner talked to you about ways to cope with panic or stress, which may happen when you become short of breath?
- [ ] Yes
- [ ] No

Has a healthcare practitioner taught you any of the following breathing exercises?
- [ ] Pursed-lip breathing
- [ ] Diaphragmatic or abdominal breathing

Do you plan your activities for the day (energy conservation techniques)?
- [ ] Yes
- [ ] No

Have you ever smoked the following on a regular basis?
- [ ] Cigarettes
  - [ ] No
  - [ ] Yes
    - Number of packs per day: ______
    - Number of years smoked: ______
    - Enter pack years: ______
    - Quit date: ______
- [ ] Cigars
  - [ ] No
  - [ ] Yes
    - Number of cigars per day: ______
    - Number of cigars per week: ______
    - Number of years smoked: ______
    - Quit date: ______
- [ ] Pipe
  - [ ] No
  - [ ] Yes
    - Occasionally
    - Frequently
    - Number of years smoked: ______
    - Quit date: ______
Chronic Obstructive Pulmonary Disease (COPD) Care Management Assessment

Do you currently use tobacco products?
- No
- Yes (if yes, complete a, b, and c)
  a. Which tobacco products do you use?
     (check all that apply)
     - Cigarettes
     - Cigars
     - Pipe
     - Chew
     - Snuff
  b. Have you tried to quit using tobacco products in the past?
     - Yes
     - No
  c. Are you interested in quitting using tobacco products in the near future?
     - Yes
     - No

Are you exposed to second-hand smoke on a regular basis?
- No
- Yes
  - Work
  - Home
  - Social functions

Do you own a scale?
- No
- Yes
  If yes, do you weigh yourself?
     - No
     - Yes
     a. How often?
        - Daily
        - Every other day
        - Weekly
        - Monthly
        - Less frequently than monthly
     b. Do you contact your doctor if you have sudden increases or decreases in your weight?
        - Yes
        - No

How many meals do you eat per day?
- Three meals
- Two meals
- One meal
- Frequent small servings
- Irregular meal times

How would you describe your weight?
- Normal
- Over
- Under

What is your weight?
Enter weight: ____________

What is your height?
Enter height: ____________

Have you noticed a change in your appetite in the past six months?
- Increase
- Decrease
- No change

Do you have any of the following that make it difficult to eat a complete meal?
- Poor or no appetite
- Feel full before meal is complete
- Shortness of breath
- Choking sensations when eating or drinking liquids

What diet are you to follow? (check all that apply)
- Regular
- High calorie
- Low calorie
- Low fat
- Low salt
- Other: ________________

Who is responsible for your daily meal preparation?
- Self
- Spouse
- Caregiver
- Other: ________________

Have you recently had a healthcare practitioner discuss your diet with you?
- No
- Yes
  - Doctor
  - Dietitian
  - Nurse
  - At pulmonary rehabilitation

Do you have a pillbox or other medication organizer?
- Yes
- No
Chronic Obstructive Pulmonary Disease (COPD) Care Management Assessment

Do you keep a list of all your prescription and over-the-counter medications with you?
- Yes
- No

Do you have a prescription plan or plan that covers the cost of your medications?
- Yes
- No

What “rescue” medications do you take for your COPD (medications that you take to help catch your breath when your usual symptoms worsen)?
List medications: ____________________________

What “maintenance” medications do you take for your COPD (medications that you take every day to help maintain control of your COPD)?
List medications: ____________________________

Do you take your maintenance medications every day or only when your COPD symptoms get worse?
- Every day
- Only on certain days

Please explain why you only take your medications on certain days.
- Forget
- Don’t think I need it every day
- Can’t afford my medicine
- Forget to refill my prescription
- Side effects

Do you use oxygen?
- No
- Yes (if yes, complete a, b, c, and d)

- LPM: _______

- Frequency
- Intermittent
  - With meals
  - With shortness of breath
  - With activity
- Continuous
  - Only during sleep

- Delivery method
- Nasal cannula
- Mask
- Tracheostomy
- SCOOP (transnasal oxygen catheter)

- Do you have a portable oxygen system for traveling?
- Yes
- No

When did you have your last flu shot?
- Less than 1 year ago
- More than 1 year ago
- I never had a flu shot
- I did have a flu shot in the past, but I stopped getting them

Please explain (barriers):
- Did not know I needed it
- Flu shot causes flu
- General excuse
- Doesn’t work
- Access and cost
- Afraid of pain
- Vaccine shortage
- Allergy to vaccine and/or eggs

Have you had a pneumonia shot?
- No
- Yes
  Date initial: _______
  Date booster: _______

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Abnormal Lung Sounds: [ ]
Limited Activities: [ ]

Spirometry Date: / / Results: FEV1 L/ % FVC

Smoking History:
- [ ] Yes
- [ ] No
- Current Smoker: [ ] Yes
- [ ] No
- Packs Per Day:

Shortness of Breath on Exertion: [ ] Yes
- [ ] No
- Dyspnea: [ ] Yes
- [ ] No
- Wheezing: [ ] Yes
- [ ] No

Limited Activities: [ ] Yes
- [ ] No
- Cough: [ ] Intermittent
- [ ] Chronic
- Sputum/Mucus Production: [ ] Yes
- [ ] No

Abnormal Lung Sounds: [ ] Yes
- [ ] No
- Acute Exacerbations: [ ] Yes
- [ ] No

Date of Next Visit: / /

Patient Emergency Plan:
If you experience a sudden increase in shortness of breath, consider the following for relief:
1. Increase the dose and/or frequency of your existing rescue bronchodilator therapy.
2. If you have yellow-colored sputum from cough, contact your healthcare practitioner and consider the use of antibiotics.
3. Consider the use of your oral steroids as directed by your healthcare practitioner.
4. If you are not getting relief, call your doctor or emergency medical services.
5. You may need to go to the Emergency Room.

PATIENT PRESENTATION/PAST MEDICAL HISTORY
Smoking History: [ ] Yes
- [ ] No
- Current Smoker: [ ] Yes
- [ ] No
- Packs Per Day:

Shortness of Breath on Exertion: [ ] Yes
- [ ] No
- Dyspnea: [ ] Yes
- [ ] No
- Wheezing: [ ] Yes
- [ ] No

Limited Activities: [ ] Yes
- [ ] No
- Cough: [ ] Intermittent
- [ ] Chronic
- Sputum/Mucus Production: [ ] Yes
- [ ] No

Abnormal Lung Sounds: [ ] Yes
- [ ] No
- Acute Exacerbations: [ ] Yes
- [ ] No

PULMONOLOGIST FINDINGS
Spirometry Date: / / Results: FEV1 L/ % FVC

Current Medications:

Allergies:

Patient Information:

Based on patient spirometry and clinical assessment, COPD stage [ ] therapy [see next page] is recommended.

Recommended Therapy at Each Stage of COPD

<table>
<thead>
<tr>
<th>COPD STAGE</th>
<th>FEV1</th>
<th>INFLUENZA VACCINATION</th>
<th>SHORT-ACTING BRONCHODILATORS</th>
<th>LONG-ACTING BRONCHODILATORS</th>
<th>INHALED GLUCOCORTICOSTEROIDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>50% = FEV1 &lt; 80% of predicted</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severe</td>
<td>30% = FEV1 &lt; 30% of predicted</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very Severe</td>
<td>FEV1 &lt; 30% of predicted or FEV1 &lt; 30% of predicted plus chronic respiratory failure</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Important considerations in the diagnosis and treatment of COPD:

- COPD is defined as an FEV1/FVC < 0.70.
- Spirometric readings should be conducted following administration of bronchodilator to accurately diagnose and assess COPD severity.
- Exacerbations should trigger a review of therapy (bronchodilator therapy, antibiotics, home oxygen) to reduce episodes and prevent long-term decline.
- Long-term oxygen should be added for patients with Stage IV (very severe) COPD.
- Long-acting bronchodilators should be initiated as maintenance therapy when airflow limitation worsens and/or symptoms become persistent.
- Inhaled glucocorticosteroids should be reserved for Stage III or Stage IV patients with repeated exacerbations. Surgical treatments should also be considered in these patients.

References:
- Global Strategy for the Diagnosis, Management and Prevention of COPD
- Global Initiative for Chronic Obstructive Lung Disease (GOLD) 2007.

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Date That Care Track Plan Was Initiated: / / 

Last Name: First Name: Patient ID#: 

Gender: Race: DOB: / / Age: 

Address: Phone Number: 

City: State: Zip Code: 

Alternate Number: 

Primary Care Provider: 

Address: City: State: Zip Code: 

Care Practitioner Phone Number: Care Practitioner Fax Number: 

PATIENT PRESENTATION/PAST MEDICAL HISTORY

Smoking History: ❑ Yes ❑ No Current Smoker: ❑ Yes ❑ No Packs Per Day: 

Shortness of Breath on Exertion: ❑ Yes ❑ No Dyspnea: ❑ Yes ❑ No Wheezing: ❑ Yes ❑ No 

Limited Activities: ❑ Yes ❑ No Cough: ❑ Intermittent ❑ Chronic Sputum/Mucus Production: ❑ Yes ❑ No 

Abnormal Lung Sounds: ❑ Yes ❑ No Acute Exacerbations: ❑ Yes ❑ No 

PULMONOLOGIST FINDINGS

Spirometry Date: / / Results: FEV1 L/ % FVC L/ % 

Current Medications: 

Allergies: 

PATIENT EMERGENCY PLAN:

If you experience a sudden increase in shortness of breath, consider the following for relief:
1. Increase the dose and/or frequency of your existing rescue bronchodilator therapy
2. If you have yellow-colored sputum from cough, contact your healthcare practitioner and consider the use of antibiotics
3. Consider the use of your oral steroids as directed by your healthcare practitioner
4. If you are not getting relief, call your doctor or emergency medical services
5. You may need to go to the Emergency Room

Based on patient spirometry and clinical assessment, COPD stage therapy [see next page] is recommended.
**COPD CARE TRACK**

**PATIENT PRESENTATION/PAST MEDICAL HISTORY**

Smoking History:  
- Yes  
- No  
Current Smoker:  
- Yes  
- No  
- Packs Per Day:  

Shortness of Breath on Exertion:  
- Yes  
- No  
Dyspnea:  
- Yes  
- No  
Wheezing:  
- Yes  
- No  

Limited Activities:  
- Yes  
- No  
Cough:  
- Intermittent  
- Chronic  
Sputum/Mucus Production:  
- Yes  
- No  

Abnormal Lung Sounds:  
- Yes  
- No  
Acute Exacerbations:  
- Yes  
- No  

**PULMONOLOGIST FINDINGS**

Spirometry Date:  
- /  
- /  

Results:  
- FEV1  
- L  
- %  
- FVC  
- L  
- %  
- Ratio FEV1/FVC  
- %  

Current Medications:

Allergies:

Patient Information:

Based on patient spirometry and clinical assessment, COPD stage [therapy] (see next page) is recommended.

**Recommended Therapy at Each Stage of COPD**

<table>
<thead>
<tr>
<th>COPD STAGE</th>
<th>FEV1</th>
<th>INFLUENA VACCINATION</th>
<th>SHORT-ACTING BRONchodilators</th>
<th>LONG-ACTING BRONchodilators</th>
<th>INHALED GLUCOCORTICOSTEROIDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MILD</td>
<td>FEV1 &lt; 50% of predicted</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>MODERATE</td>
<td>50% ≤ FEV1 &lt; 80% of predicted</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>SEVERE</td>
<td>80% ≤ FEV1 &lt; 50% of predicted</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>VERY SEVERE</td>
<td>FEV1 &lt; 30% of predicted or FEV1 &lt; 50% of predicted plus chronic respiratory failure</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Important considerations in the diagnosis and treatment of COPD:

- COPD is defined as an FEV1/FVC < 0.70.
- Spirometric readings should be conducted following administration of bronchodilator to accurately diagnose and assess COPD severity.
- Bronchodilators are usually given as needed for relief of shortness of breath on exertion.
- Inhaled glucocorticosteroids should be reserved for Stage III or Stage IV patients with repeated exacerbations.
- Surgical treatments should also be considered in these patients.

**CARE TRACK PLAN**

**PATIENT CARE OPTIONS**

- Inhaled Glucocorticosteroids
- Short-Acting Bronchodilators
- Long-Acting Bronchodilators
- Inhaled Anticholinergics
- Long-Term Oxygen Therapy
- Pulmonary Rehabilitation
- COPD Education
- Nutrition
- Flu Vaccine
- Pneumonia Vaccine
- Corticosteroids
- Corticosteroids
- Nutritional Support
- Pulmonary Rehabilitation

**COMMENTS/NOTES**

- Date of Next Visit:  
- /  
- /  

**PATIENT EMERGENCY PLAN**

If you experience a sudden increase in shortness of breath, consider the following for relief:

1. Increase the dose and/ or frequency of your existing rescue bronchodilator therapy.
2. If you have yellow-colored sputum from cough, contact your healthcare practitioner and consider the use of antibiotics.
3. Consider the use of your oral steroids as directed by your healthcare practitioner.
4. If you are not getting relief, call your doctor or emergency medical services.
5. You may need to go to the Emergency Room.

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COPD ACTION PLAN

Name: ____________________________

Primary Care Provider: ____________________________ Phone: ____________________________

Specialist: ____________________________ Phone: ____________________________

Pharmacy: ____________________________ Phone: ____________________________

Green Zone: Doing Well

- I breathe as usual.
- My sputum is the usual color.
- I have usual amounts of sputum.
- I can do my usual activities without tiring.
- I can think clearly.

Take usual medications as prescribed.

Continue daily activities.

Exercise (__________) ___ minutes per day; use pursed lip breathing.

Stop smoking, make your home and car smoke-free, and avoid secondhand smoke.

Yellow Zone: Getting Worse

- I am short of breath, wheeze, or cough more than usual.
- I have unexplained change in weight and my feet/ankles are swollen.
- I have noticed changes in my sputum (thicker, color, amount).
- I am taking my rescue inhaler more than usual.
- I am more tired and cannot do my usual activities.
- I am not thinking clearly.

Limit activities.

Check oxygen system to make sure it is working properly.

Check saturation, if you have pulse oximetry. Call provider if < ____%.

Do pursed lip breathing or relaxation exercises.

Take antibiotics and/or oral steroids, if prescribed.

Add ______________________, _____ mg/puffs, _______ times per day.

Add ______________________, _____ mg/puffs, _______ times per day.

Call provider (phone _____________) if

______________________________

______________________________

Red Zone: Medical Alert

- I have increased trouble breathing.
- I have increased trouble coughing up sputum.
- I cannot do usual activities.
- I am sleepy and difficult to wake up.
- I am confused.
- I have slurred speech or feel faint.

Call 911 or go to the emergency room if you

- continue to have trouble breathing
- are unable to speak
- have chest pain
- are frightened by not being able to breathe or by how tired you feel
- have slurred speech
- feel faint or do faint
- are suddenly confused

Supported by Boehringer Ingelheim Pharmaceuticals, Inc.
### MEDICATIONS

<table>
<thead>
<tr>
<th>Name/Strength</th>
<th>Date Prescribed</th>
<th>Dosage</th>
<th>When to Take</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>
Typically presents at an early age; non-smokers affected; immunological stimuli, family history of asthma; symptoms vary with near-normal lung function between exacerbations; airway reversibility — largely reversible.  

The following fifth-digit subclassification for ICD-9-CM codes is for use with codes 493.0-493.2, 493.9: 0 — unspecified, 1 — with status asthmaticus, 2 — with (acute) exacerbation.

### Asthma

<table>
<thead>
<tr>
<th>ICD-9-CM</th>
<th>Description</th>
<th>ICD-10-CM</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>493</td>
<td>Asthma</td>
<td>J45</td>
<td>Asthma</td>
</tr>
<tr>
<td>493.00</td>
<td>Extrinsic</td>
<td>J45.0</td>
<td>Predominantly allergic asthma</td>
</tr>
<tr>
<td></td>
<td>asthma</td>
<td></td>
<td>• Allergic — allergic with stated cause</td>
</tr>
<tr>
<td></td>
<td>• Allergic</td>
<td></td>
<td>• Bronchitis NOS</td>
</tr>
<tr>
<td></td>
<td>• Hay</td>
<td></td>
<td>• Rhinitis with asthma</td>
</tr>
<tr>
<td></td>
<td>• Platinum</td>
<td></td>
<td>• Atopic asthma</td>
</tr>
<tr>
<td></td>
<td>• Key hay</td>
<td></td>
<td>• Intrac allergic asthma</td>
</tr>
<tr>
<td></td>
<td>with</td>
<td></td>
<td>• Hay hay with asthma</td>
</tr>
<tr>
<td></td>
<td>asthma</td>
<td></td>
<td></td>
</tr>
<tr>
<td>493.01</td>
<td>Extrinsic</td>
<td>J45.1</td>
<td>Nonallergic asthma</td>
</tr>
<tr>
<td></td>
<td>asthma with</td>
<td></td>
<td>• Idiopathic asthma</td>
</tr>
<tr>
<td></td>
<td>status</td>
<td></td>
<td>• Idiopathic asthma</td>
</tr>
<tr>
<td></td>
<td>asthmaticus</td>
<td></td>
<td>• Intrinsic Nonallergic asthma</td>
</tr>
<tr>
<td>493.02</td>
<td>Extrinsic</td>
<td>J45.8</td>
<td>Mixed asthma</td>
</tr>
<tr>
<td></td>
<td>asthma with</td>
<td></td>
<td>• Combination of conditions listed in J45.0 and J45.1</td>
</tr>
<tr>
<td></td>
<td>acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>exacerbation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>493.10</td>
<td>Intrinsic</td>
<td>J45.9</td>
<td>Asthma, unspecified</td>
</tr>
<tr>
<td></td>
<td>asthma</td>
<td></td>
<td>• Asthmatic bronchitis NOS</td>
</tr>
<tr>
<td></td>
<td>unspecified</td>
<td></td>
<td>• Extrac allergic asthma</td>
</tr>
<tr>
<td>493.11</td>
<td>Intrinsic</td>
<td>J46</td>
<td>Status asthma</td>
</tr>
<tr>
<td></td>
<td>asthma with</td>
<td></td>
<td>• Hay sneeze asthma</td>
</tr>
<tr>
<td></td>
<td>status</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>asthmaticus</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>exacerbation</td>
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<td></td>
</tr>
</tbody>
</table>

### References:

Boehringer Ingelheim Pharmaceuticals, Inc. has no ownership interest in any other organization that advertises or markets its disease management products and services.

A healthcare practitioner educational resource provided by Boehringer Ingelheim Pharmaceuticals, Inc.
### COPD and Other Respiratory Conditions: ICD-9-CM¹ and ICD-10-CM²

**COPD**
Patient typically smoker or ex-smoker ≥ 40 years of age; persistent or worsening dyspnea—initially with exertion, eventually at rest; cough, may be unproductive; FEV₁/FVC < 0.70; airway reversibility—partially reversible.³

<table>
<thead>
<tr>
<th>ICD-9-CM</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>491.0</td>
<td>Simple chronic bronchitis, chronic smoker’s cough</td>
</tr>
<tr>
<td>491.1</td>
<td>Mucopurulent chronic bronchitis</td>
</tr>
<tr>
<td>491.2</td>
<td>Obstructive chronic bronchitis</td>
</tr>
<tr>
<td>491.20</td>
<td>Obstructive chronic bronchitis without exacerbation</td>
</tr>
<tr>
<td>491.21</td>
<td>Obstructive chronic bronchitis with acute exacerbation</td>
</tr>
<tr>
<td>491.22</td>
<td>Obstructive chronic bronchitis with acute exacerbation</td>
</tr>
<tr>
<td>492.0</td>
<td>Emphysema, chronic bronchitis, chronic smoker’s cough</td>
</tr>
<tr>
<td>492.8</td>
<td>Other emphysema (long or pulmonary)</td>
</tr>
<tr>
<td>494.0</td>
<td>Bronchiectasis</td>
</tr>
<tr>
<td>494.1</td>
<td>Bronchiectasis without acute exacerbation</td>
</tr>
<tr>
<td>496.0</td>
<td>Chronic airway obstruction, not elsewhere classified</td>
</tr>
<tr>
<td>506.4</td>
<td>Chronic respiratory conditions due to fumes and vapors</td>
</tr>
</tbody>
</table>

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**Emphysema**

<table>
<thead>
<tr>
<th>ICD-9-CM</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>491.0</td>
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</tr>
<tr>
<td>491.1</td>
<td>Simple chronic bronchitis</td>
</tr>
<tr>
<td>491.2</td>
<td>Obstructive chronic bronchitis</td>
</tr>
<tr>
<td>491.20</td>
<td>Obstructive chronic bronchitis without exacerbation</td>
</tr>
<tr>
<td>491.21</td>
<td>Obstructive chronic bronchitis with acute exacerbation</td>
</tr>
<tr>
<td>491.22</td>
<td>Obstructive chronic bronchitis with acute exacerbation</td>
</tr>
<tr>
<td>491.9</td>
<td>Unspecified chronic bronchitis</td>
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</tbody>
</table>

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**Emphysema**

<table>
<thead>
<tr>
<th>ICD-10-CM</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>J40</td>
<td>Bronchitis, not specified as acute or chronic</td>
</tr>
<tr>
<td>J41</td>
<td>Simple and mucopurulent chronic bronchitis</td>
</tr>
<tr>
<td>J41.0</td>
<td>Simple chronic bronchitis</td>
</tr>
<tr>
<td>J41.1</td>
<td>Mucopurulent chronic bronchitis</td>
</tr>
<tr>
<td>J41.8</td>
<td>Mixed simple and mucopurulent chronic bronchitis</td>
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</table>

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**Emphysema**

<table>
<thead>
<tr>
<th>ICD-10-CM</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>J43</td>
<td>Emphysema</td>
</tr>
<tr>
<td>J43.0</td>
<td>MacLeod’s syndrome</td>
</tr>
<tr>
<td>J43.1</td>
<td>Pulmonary emphysema</td>
</tr>
</tbody>
</table>

---

**Other Chronic Respiratory Diseases**

<table>
<thead>
<tr>
<th>ICD-9-CM</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>494.0</td>
<td>Chronic bronchitis, chronic smoker’s cough</td>
</tr>
<tr>
<td>494.1</td>
<td>Chronic bronchitis</td>
</tr>
<tr>
<td>496.0</td>
<td>Chronic airway obstruction, not elsewhere classified</td>
</tr>
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<td>506.4</td>
<td>Chronic respiratory conditions due to fumes and vapors</td>
</tr>
</tbody>
</table>

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**Other Chronic Respiratory Diseases**

<table>
<thead>
<tr>
<th>ICD-10-CM</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>J44</td>
<td>Other chronic obstructive pulmonary disease</td>
</tr>
<tr>
<td>J44.1</td>
<td>Bronchiectasis with acute exacerbation</td>
</tr>
<tr>
<td>J44.8</td>
<td>Other specified chronic obstructive pulmonary disease</td>
</tr>
<tr>
<td>J44.9</td>
<td>Chronic obstructive pulmonary disease, unspecified</td>
</tr>
</tbody>
</table>

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**Emphysema**

<table>
<thead>
<tr>
<th>ICD-10-CM</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>J47</td>
<td>Bronchiectasis</td>
</tr>
</tbody>
</table>

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**Note:**
Reorganized to another ICD-10-CM category or no equivalent ICD-10-CM code.
Guidelines for Treating Tobacco Use

Ask, Advise, Refer
Toolkit for Health Care Providers
Introduction

This toolkit is based on information from the U.S. Public Health Service-sponsored *Treating Tobacco Use and Dependence* Clinical Practice Guidelines. The guidelines provide evidence-based strategies and recommendations designed to assist clinicians in delivering and supporting effective treatments for tobacco use and dependence. This toolkit provides an overview for clinicians with information including:

- The Ask, Advise, Refer (AAR) Model
- Cessation resources for patients
- Pharmacotherapy guidelines
- Resources for clinicians and patients

This toolkit was developed by the Los Angeles County Tobacco Control and Prevention Program in collaboration with LA Care (2008). For questions, please contact the Los Angeles County Tobacco Control and Prevention Program at (213) 351-7890.

Acknowledgements

The Los Angeles County Department of Public Health Tobacco Control and Prevention Program would like to acknowledge the following individuals and organizations who contributed their time, experience, and information to this toolkit: Steven Schroeder, Smoking Cessation Leadership Center UCSF; Catherine Saucedo, Smoking Cessation Leadership Center UCSF; Kirsten Hansen, Center for Tobacco Cessation; Marsha Epstein, Los Angeles County Division of Chronic Disease and Injury Prevention; Linda Aragon, Los Angeles County Tobacco Control and Prevention Program; Gigi Talbott, Los Angeles County Tobacco Control and Prevention Program; Donna Sze, Los Angeles County Tobacco Control and Prevention Program.

Funding for this material provided by a generous grant from L.A. Care Health Plan.
Table of Contents

Section 1: Why Should We Promote Smoking Cessation? ................................................. 4

Section 2: Effective Intervention (Ask, Advise, Refer) .................................................... 5

Section 3: Prescribing Pharmacotherapy ........................................................................ 6
FDA Approved Medications for Treating Tobacco Use ................................................. 7
Suggested Initial Dosages for Nicotine Replacement Therapy ..................................... 8
Issues that may Complicate Treatment ...................................................................... 8
Insurance Coverage ................................................................................................. 9

Section 4: What Else Can Be Done to Help Patients Stop Smoking? ......................... 10
For Tobacco Users Unwilling to Stop Smoking ........................................................... 10

Section 5: Resources for Providers ............................................................................. 11
Ask, Advise, Refer Intervention Cues ......................................................................... 11
Tobacco Impacts on Medical Specialties .................................................................... 12
CME Course Listing for Providers ............................................................................ 13
Online Resources for Providers .................................................................................. 13

Section 6: Patient Education Fact Sheets ................................................................... 14
Free Materials Available from the California Smokers’ Helpline ............................. 14
Smoking and Your Health ......................................................................................... 15
5 Tips to Help Patients Stop Smoking and Resources for Patients ............................. 16

References ............................................................................................................... 17
Section 1: Why Should We Promote Smoking Cessation?

Smoking is the leading cause of preventable death in the United States, accounting for an estimated 435,000 deaths each year. In Los Angeles County, nearly 9,000 lives and $4.3 billion dollars are lost due to smoking and smoking-related diseases annually. Smokers who die of tobacco-related diseases lose an average of 14 years of life, but quitting reduces the risk of tobacco related disease and prolongs life.

Although the rate of smoking in Los Angeles County has decreased dramatically, more than 1 million residents continue to smoke. Highest rates are among those who have mental health or substance abuse problems or who are African-Americans, on Medi-Cal, without health insurance, living in poverty or lesbian, gay or bisexual. African-American children in Los Angeles County have the highest rates of exposure to tobacco smoke in their homes.

Quitting has immediate and long-term benefits. Most smokers want to stop smoking—and every year, more than half of them try. Only 9% or fewer are successful with each attempt because most try without counseling or medication. Studies have consistently shown that counseling, especially when combined with medication, doubles or triples the proportion of patients who successfully stop smoking, achieving long-term quit rates as high as 30% with each attempt. In fact, tobacco use interventions are more cost effective than most other routine preventive medical interventions. And smokers offered assistance in stopping smoking were more satisfied with their medical care, even if they did not want to stop.

By using the following recommended guidelines, effective tobacco use interventions can take as little as 30 seconds. Your advice to your patients to stop smoking is the most cost-effective use of time to increase the quality and length of their lives.
Section 2: Effective Intervention (Ask, Advise, Refer)

Many physicians understandably cite time, energy, and resources as major barriers in preventing them from talking to their patients about not smoking. The “Ask, Advise, and Refer” format was created to give physicians a simple, practical plan that can be implemented with all patients and it can take 30 seconds or less.

1. Ask Patients about Tobacco Use at Every Visit.

Also ask about tobacco exposure to secondhand smoke in the home.
Make tobacco-use screening a regular part of your practice. Have office systems in place (e.g., vital signs stamp or an electronic prompt). Such reminders will enable you to systematically document tobacco-use status and referrals. (see sample.)

2. Advise Tobacco Users to Stop.

Smokers say their clinician’s advice is an important motivator to stop smoking. Advice must be clear, strong, and personalized, for example: “As your physician and someone who cares about you and your health, I would encourage you to stop smoking because it is the most important thing you can do to protect your health.”

Patients for whom tobacco poses a special risk should receive tailored advice. For example,
- “Smoking is strongly linked with snoring and sleeping problems. Your sleep could improve if you stopped smoking.”
- “Stopping smoking reduces your chance of a heart attack or a stroke.”

3. Refer Patients to Resources.

- Provide patients with the phone number of the FREE California Smokers’ Helpline: 1-800-NO-BUTTS or local tobacco cessation resources. Let them know that counseling can double the chances of quitting and staying free of tobacco. Long-term quit rates can be as high as 20% with either consistent follow-up counseling or pharmacotherapy and rise to 30% when counseling is combined with pharmacotherapy.

The California Smokers’ Helpline offers quitting materials, referrals to local resources, and up to six sessions with a trained counselor. The Helpline provides services in English, Chinese (Mandarin and Cantonese), Korean, Spanish, Vietnamese, and TDD for the hard of hearing. Services are also available for pregnant women, teens, and tobacco chewers.

- Offer self-help materials that include tips to help patients stop smoking. If you have time, just 3 to 5 minutes of personalized counseling by a clinician doubles quit rates. (See page 14.)
Section 3: Prescribing Pharmacotherapy

Pharmacotherapy doubles or triples the chances of successfully quitting with each attempt. It is a key part of a multi-component approach to assisting patients with their tobacco dependence. Therefore, offer and prescribe pharmacotherapy to help all tobacco users, unless contraindicated. Determine regimen-based contraindications and precautions (Table 1), level of addiction (Table 2), and patient preference. Use clinical judgment in providing tobacco use treatment to pregnant and adolescent smokers (see page 8). Encourage your patients to consider medications: “Medication improves your success in becoming free of tobacco. Would you like to discuss which medication is best for you?”

**Nicotine replacement therapy (NRT) doubles** successful quit rates. NRT is FDA-approved for adults 18 and over. In recommended doses, NRT is safe for most patients, including those with stable heart disease. Medi-Cal pays for nicotine replacement therapy if combined with counseling, e.g. the California Smokers’ Helpline (check with specific plans).

NRT is available in several forms. The nicotine patch is the most effective and convenient form for most smokers. Combining daily use of the nicotine patch with other forms of NRTs results in long-term quit rates higher than those observed when a single form of NRT is used. Some smokers who have stopped smoking continue to use self-dosing NRT formulations such as nicotine gum or lozenges, as needed. The long-term use of these therapies is not known to present health risks.

**Bupropion SR doubles** successful quit rates with each attempt. First marketed as the antidepressant Wellbutrin SR®, it is now also marketed as Zyban®** for treatment of smoking addiction. Due to its anti-depressant effects, it is the best choice of medication for patients with a history of depression. For patients who are heavily addicted, substance abusers or schizophrenic, use bupropion combined with NRT for increased effectiveness. Contraindications include a history of seizures, bipolar disorder, or an eating disorder. Medi-Cal requires an order specifically for Zyban®. The FDA has approved bupropion SR for long-term maintenance.

**Varenicline (Chantix®**) combined with counseling can double** successful quit rates with each attempt. Varenicline does not contain nicotine. It mimics the effects of nicotine and activates nicotine receptors to prevent cravings. At the same time, Varenicline possesses antagonist properties that eliminate the pleasurable effects of smoking. Adding nicotine replacement increases side effects without increasing quit rates. Varenicline plus bupropion has not been studied yet. Healthcare professionals, patients, patients’ families, and caregivers should monitor changes in mood and behavior. Varenicline is being investigated for long term use.

Nortriptyline and clonidine are not approved for cessation by the FDA and have significant adverse effects. Other drugs, including additional antidepressants, have **not** been shown to increase smoking quit rates. Neither acupuncture nor hypnosis has been shown to be effective.

**Use of brand names is for informational purposes only and does not imply endorsement.**
Table 1. FDA-Approved Medications for Tobacco Dependence

<table>
<thead>
<tr>
<th>Pharmacotherapy</th>
<th>Common Side Effects</th>
<th>Advantages</th>
<th>Disadvantages</th>
<th>Dosage</th>
<th>Duration</th>
<th>Availability</th>
</tr>
</thead>
</table>
| Bupropion SR    | • Insomnia  
• Dry mouth | • Easy to use (pill)  
• No concerns for cardiac patients  
• Effective in patients with depression  
• Limits weight gain  
• Can be used with NRT | • Prescription needed  
• Precautions: Pregnancy Category C  
• Do not use for patients who:  
  - Use a monoamine oxidase (MAO) inhibitor, levodopa or bupropion in any other form (Zyban, Wellbutrin)  
  - Have a history of seizures or stroke  
  - Have a history of anorexia or bulimia  
  - Have other seizure-threshold-lowering conditions (e.g., alcohol dependence, head trauma) | 150 mg every morning for 3 days, then 150 mg twice daily  
Begin 1-2 weeks before first tobacco free day  
Check BP if combine with NRT | 7-12 weeks, maintenance up to 6 mos. | Zyban® Wellbutrin SR®  
Generic SR (Prescription only) |
| Nicotine Patch  | • Local skin reaction  
• Insomnia  
• Headache  
• Nasal irritation  
• Dyspepsia | • Easy to use  
• Provides steady levels of nicotine  
• Unobtrusive  
• No prescription needed- OTC  
• Three strengths: 7, 14, 21 mg  
• Fewer compliance issues associated with the patch | • Do not use if have severe eczema or psoriasis; allergic reactions to adhesive may occur  
• Dose is not adjustable if cravings occur  
• 16-hr patch may lead to morning nicotine cravings  
• Use clinical judgment in pregnancy/teens  
• Contraindications: Pregnancy Category D. Severe or unstable angina pectoris, serious arrhythmias. For one month after acute MI | See Table 2. For most patients:  
21 mg/24 hours ……….  
Then 14 mg/24 hours …  
Then 7 mg/24 hours … | 4-6 weeks  
2.4 wks  
2.4 wks | Nicoderm CQ®  
Habitrol®  
Generic Patches  (Available prescription & OTC) |
| Nicotine Gum     | • Mouth soreness  
• Jaw ache  
• Dyspepsia  
• Hiccups | • Can use with patches to control urge in addicted smokers  
• User controls dose  
• No prescription needed- OTC  
• May delay weight gain | • Caution with dentures; proper technique required  
• Do not use with acidic beverages during use  
• Contraindications: Pregnancy Category D; TMJ disease. Also see contraindications for patch. | 1-24 cigarettes/day 2mg gum  
25+ cigarettes/day 4mg gum  
Chew each piece slowly 30 minutes, up to 24 pieces/day  
10-12/day usually | Up to 12 Weeks  
Taper 7-12 weeks | Nicorette®  
Nicorette Mint®  
(All flavors OTC) |
| Nicotine lozenge | • Nausea  
• Throat irritation  
• Hiccups  
• Dyspepsia | • Easy to use and conceal  
• Can use with patches to control urge in addicted smokers  
• User controls dose  
• No prescription needed- OTC  
• May satify oral cravings | • Do not eat or drink 15 minutes before or during use  
• Acidic beverages limit absorption  
• Limit 20 in 24 hours  
• Gastrointestinal side effects (nausea, hiccups, and heartburn) may be bothersome  
• Contraindications: Pregnancy Category C. Also see contraindications for patch. | If 1st cigarette more than 30 min. after waking – 2mg PRN  
If 1st cigarette less than 30 min. after waking: 4mg PRN  
Up to 20 lozenges/day | Up to 12 weeks | Commit®  
Generic (All OTC) |
| Nicotine Inhaler | • Local irritation of mouth and throat  
• Mild cough and rhinitis initially  
• Headache  
• Nosebleed  
• Itching | • Can be used with patches to control urge in addicted smokers  
• User controls dose  
• Mimics hand-to-mouth ritual of smoking | • Prescription needed  
• Do not use with acidic beverages  
• Frequent continuous puffing needed for up to 20 minutes per cartridge  
• Does not work in cold (<40 degrees F)  
• Contraindications: Pregnancy Category D; Reactive airway disease. Also see patch. | 6-16 Cartridges/day PRN  
Inhale 80 times/cartridge  
20 minutes/cartridge  
Taper dosage after 3-6 months | Up to 6 mos. | Nicotrol Inhaler®  
(Prescription only) |
| Nicotine Nasal Spray | • Nasal irritation  
• Headache  
• Sneezing  
• Red, watery eyes initially | • Can use with patches to control urge in addicted smokers  
• User controls dose  
• Most rapid nicotine delivery; simulates smoking  
• Highest effectiveness of nicotine products | • Prescription needed  
• Localized adverse effects limit use  
• Change in sense of smell or taste  
• Dependence can result  
• Patients with chronic nasal disorders should not use  
• Contraindications: Pregnancy Category D; Reactive airway disease. Also see patch. | Recommend 1-2 doses/hr PRN  
5 doses/hr, 40 doses/day maximum  
One dose equals two sprays, one spray in each nostril (nearly equals nicotine from one cigarette) | 3 to 6 mos. | Nicotrol NS®  
(Prescription only) |
| Varenicline      | • Nausea, Vomiting  
• Insomnia  
• Abnormal dreams  
• Dry mouth | • Easy to use (pill)  
• Blocks nicotine & therefore pleasure of smoking  
• No drug interactions  
• An oral formulation with twice-a-day dosing  
• Offers new mechanism of action for persons who previously failed using other medications  
• Early industry-sponsored trials suggest agent is superior to bupropion SR | • Prescription needed  
• Do not use while nursing  
• Precautions: Pregnancy Category C;  
• Avoid in chronic renal failure  
• Post-marketing data just emerging: new warning about rare but important psychiatric symptoms; hard to distinguish from nicotine withdrawal. Monitor for changes in mood, behavior, psychiatric symptoms or suicidal ideation | Begin 1-2 weeks before stop date  
Days 1-3: 0.5 mg tablet every morning  
Days 4 – 7: 0.5 mg tablet twice daily  
Days 8 to end of treatment: 1 mg tablet twice daily | 3 to 6 mos. | Chantix®  
(Prescription only) |
## Table 2. Suggested Initial Dosages for Nicotine Replacement Therapy

<table>
<thead>
<tr>
<th>Patient Characteristics</th>
<th>Nicotine Replacement Therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-10 cigarettes/day; smokes 1 hour after waking.</td>
<td>14 mg/24 hr patch and/or 2 mg gum or lozenges PRN.*</td>
</tr>
<tr>
<td>11-24 cigarettes/day; smokes 1 hour after waking.</td>
<td>21 mg/24 hr patch.* Consider combining with 2 mg gum or lozenge PRN.</td>
</tr>
<tr>
<td>&gt; 25 cigarettes/day; smokes within 30 minutes of waking.</td>
<td>21 mg/24 hr patch and PRN 4 mg gum and/or lozenges strongly recommended. Consider combining patch and nasal spray if patient has a psychiatric condition. See Table 1 and Issues That May Complicate Treatment below.</td>
</tr>
<tr>
<td>Has condition that complicates treatment.**</td>
<td></td>
</tr>
<tr>
<td>Prior failed quit attempts despite NRT or bupropion.</td>
<td></td>
</tr>
</tbody>
</table>

* If patient exhibits moderate or severe withdrawal when stopping, increase dose, and/or add rescue NRT and/or add bupropion. See Minnesota Withdrawal Scale at [http://www.uvm.edu/~hbpl/?Page=minnesota/default.html](http://www.uvm.edu/~hbpl/?Page=minnesota/default.html)

** Conditions include depression, psychiatric conditions, alcohol and substance use, pregnancy, adolescence.

### ISSUES THAT MAY COMPLICATE TREATMENT

**Pregnancy:** Intensive counseling is recommended as a first-line intervention. Patients who continue to smoke are usually highly addicted or have other co-morbid conditions; screen for alcohol and other drug use, depression and refer for treatment. The California Smokers’ Helpline offers counseling for pregnant smokers.

NRT nicotine gum or lozenges or bupropion SR may be used during pregnancy when non-drug treatments have failed. Fetal risk from these drugs should be balanced against the greater risk of maternal smoking. Do not prescribe nicotine nasal spray because of higher peak levels of nicotine.

**Adolescence:** Screen pediatric and adolescent patients and their parents for tobacco use and strongly urge total abstinence from tobacco. Offer advice and medications to parents who smoke.

Long-term efficacy for bupropion SR in adolescents has not been established. Neither NRT nor bupropion SR is approved by the FDA for use in people 17 years of age and younger, so use clinical judgment.

**Weight gain:** Provide strategies for monitoring weight gain. Bupropion SR and NRTs, e.g., gum or patch, can delay weight gain, and should be considered for longer use in those with weight issues, diabetics, etc.

**Psychiatric or substance abuse problems:** Smoking prevalence is high (40-90%); treatment is more complicated and relapse is more common. Treat underlying psychiatric conditions concurrently.
When using NRT, care should be taken not to under-dose. In persons with schizophrenia, consider prescribing nicotine nasal spray, as its higher peak levels are the closest to inhaled smoke from a cigarette; evidence suggests that success is improved when NRT is combined with bupropion SR.

Because smoking induces cytochrome P450, psychotropic drug doses may need to be adjusted in patients who have stopped smoking. Closely follow patients with a history of depression; reduction or abstinence from nicotine may exacerbate depression and other psychiatric conditions.

**Depression:** Consider bupropion (unless contraindicated) alone or in combination with NRT.

**Alcohol or substance abuse or a psychiatric condition:** Consider bupropion with NRT.

**Heavily addicted:** Consider bupropion with NRT, patch plus rescue NRT, or varenicline. Consider bupropion in combination with NRT especially if patient also has depression, substance abuse, or a psychiatric condition.

**Special populations:** Interventions should be culturally, language, and educationally appropriate. In general, the treatments that were found to be effective in the guideline can be used with members of special populations, including hospitalized smokers, members of racial and ethnic minorities, older smokers, and others.

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### HEALTH INSURANCE COVERAGE FOR CESSATION AIDS

**Medi-Cal Coverage:**
Medi-Cal enrollees may receive coverage for medications to stop smoking. Medi-Cal alone covers the patch and bupropion, however coverage within different Medi-Cal plan formularies vary. All Medi-Cal plans cover various forms of NRT, such as the nicotine patch. Medi-Cal plans may also cover additional medications such as Zyban (Bupropion SR) or Chantix. Check with each plan to see what is covered and if the following are needed for each medication:

1. Prior authorization
2. Prescription
3. Certificate of enrollment from a behavior-modification program, such as the California Smoker’s Helpline.

The California Smokers’ Helpline will fax a certificate to the pharmacy when the patient enrolls. The smoker presents the prescription to the pharmacist, who then submits the request to Medi-Cal with the certificate.


**Medicare Coverage:**

**Los Angeles County:**
Department of Health Services, LA County Public-Private Partners (PPPs) and LA County Community Health Plan (CHP, the County’s HMO for indigent patients): All plans cover various NRT options, such as the patch and/or bupropion as routine medications.

**Private Insurance Coverage:**
Individual plans vary.
Section 4: What Else Can Providers Do to Help Patients Stop Smoking?

Follow up with patients who are trying to stop smoking.
Your concern emphasizes the importance of stopping. Reinforce the use of the California Smokers’ Helpline and other counseling sources. Assess for abstinence at all subsequent contacts.

Educate all patients about the dangers of secondhand smoke and encourage patients to maintain a smoke-free home. Secondhand smoke increases the risk of serious respiratory problems, e.g. a greater number and severity of asthma attacks and lower respiratory tract infections or an increased risk for middle ear infections in children. Inhalation secondhand smoke can cause lung cancer and coronary heart disease in nonsmoking adults. Smokers are up to ten times more likely to successfully stop if their home is smoke-free.

Prevent and treat relapse.
Former users who stopped in the last 6 months are at risk of relapse. Many patients alternate between thinking about stopping, making attempts to stop smoking, relapsing, and trying to stop again over the course of years. Relapse is not a sign of personal failure of the tobacco user or the clinician; it often takes multiple tries to successfully stop smoking. Most smokers who relapse want to try again soon. A relapse should be viewed as a learning experience. When the patient relapses, he or she can become aware of their triggers, their reasoning (e.g. one cigarette won’t hurt) and the steps that led to picking up that first cigarette.

- Ask patients if they are willing to make another attempt to stop smoking.
- Discuss the circumstances surrounding the relapse and help patients determine what worked and what didn’t work at their last attempt. Refer to the California Smokers’ Helpline and/or other counseling resources again.
- Suggest additional medication or a different medication at next attempt: a longer course of NRT or other medication, or a combination of medications, e.g. bupropion plus nicotine replacement therapy, or nicotine patch plus a short acting nicotine (gum, lozenge or spray). Varenicline (Chantix®) may have a higher successful quit rate than a single form of NRT or bupropion alone.
- Suggest using additional cessation resources such as Nicotine Anonymous Meetings.

For tobacco users unwilling to stop smoking
Reiterate that “stopping smoking is the most important thing you can do to protect your health.” Give them the phone number of the California Smokers’ Helpline. If possible, provide the "5 R’s": Relevance, Risks, Rewards, Roadblocks, and Repetition to motivate smokers who are unwilling to stop smoking at this time.

<table>
<thead>
<tr>
<th>5 “R’s” FOR TOBACCO USERS UNWILLING TO STOP SMOKING</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Relevance:</strong> Make your advice personally relevant to the patient, being as specific as possible.</td>
</tr>
<tr>
<td><strong>Risks:</strong> Ask the patient to identify potential negative consequences of tobacco use.</td>
</tr>
<tr>
<td><strong>Rewards:</strong> Ask the patient to identify potential benefits of stopping tobacco use.</td>
</tr>
<tr>
<td><strong>Roadblocks:</strong> Ask the patient to identify their barriers and note elements of treatment (problem solving, pharmacotherapy) to address barriers.</td>
</tr>
<tr>
<td><strong>Repetition:</strong> Repeat the motivational intervention at every visit. Inform them that most people make repeated attempts to become free of tobacco before they are successful.</td>
</tr>
</tbody>
</table>
Section 5: Resources for Providers

Ask-Advise-Refer

Intervention Cues

STEP 1: ASK patients about tobacco use at every visit.

- Systematically ask every patient about tobacco use at every visit.
- Determine if the patient is current, former, or was never a tobacco user.
- Determine what form of tobacco is used.
- Determine frequency of use.
- Document tobacco use status in the patient’s medical record.
- Determine if others in the household also use tobacco.

Step 1 Sample Intervention Cues

*For the patient who never regularly used tobacco:*

- “Congratulations, you have made a wise choice to protect your health.”

*For the patient who quit using tobacco:*

- “Congratulations on quitting tobacco use. We have some good programs to help you remain tobacco-free. I can give you the contact information for the program.”

*For the patient who uses tobacco:*

- “How many cigarettes per day do you smoke?”
- “How many cigars per day do you smoke?”

STEP 2: ADVISE tobacco users to stop.

- In a clear, strong, and personalized manner, urge every tobacco user to quit.
- Tobacco users who have failed in previous quit attempts should be told that most people make repeated quit attempts before they are successful.
- Employ the teachable moment: link health issues with advice.

Step 2 Sample Intervention Cues

*For the patient who currently uses tobacco:*

- “Make it a priority to quit smoking – It is important for your health.”
- “I can help you stop smoking. Let me give you the phone number for the California Smokers’ Helpline. You can receive free counseling on how to stop and remain tobacco-free.”

STEP 3: REFER patients to resources.

- Give them a California Smokers’ Helpline Gold Card/Brochure.
- Give them information (fact sheets or brochures) on smoking or tips to help them stop.
- Discuss using pharmacotherapy.
- Document in patient’s medical record.

Step 3 Sample Intervention Cues

*For the patient who currently uses tobacco:*

- “I know stopping smoking is very difficult. Most people who want to stop are successful. Sometimes it takes more than one try. I know you can do it. Let me refer you to the California Smokers’ Helpline, they can help you stop.”

Local Cessation Resources

California Smokers’ Helpline: 1-800-NO-BUTTS or 1-800-662-8887
http://www.californiasmokershelpline.org/
### Section 5: Resources for Providers

#### Tobacco Impacts on Medical Specialties

<table>
<thead>
<tr>
<th><strong>Specialties</strong></th>
<th><strong>ENT (cont.)</strong></th>
<th><strong>Ophthalmology</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All Specialties</strong></td>
<td>Smell &amp; taste disturbances</td>
<td>Macular degeneration</td>
</tr>
<tr>
<td>Sleep Disorders (longer latency, less</td>
<td>Bad breath (halitosis)</td>
<td>Cataracts</td>
</tr>
<tr>
<td>total sleep time, lighter sleep, daytime</td>
<td></td>
<td>Retinal arterial and venous occlusions</td>
</tr>
<tr>
<td>sleepiness)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Desired wound healing</td>
<td></td>
<td>Orthopedics</td>
</tr>
<tr>
<td>Post-surgical infections</td>
<td></td>
<td>Hip fractures</td>
</tr>
<tr>
<td>Increased irritability while in hospital</td>
<td></td>
<td>Increased other fractures</td>
</tr>
<tr>
<td>Many medication interactions</td>
<td></td>
<td>Osteoporosis</td>
</tr>
<tr>
<td><strong>Circulatory Diseases</strong></td>
<td></td>
<td>Pediatrics</td>
</tr>
<tr>
<td>Myocardial infarction</td>
<td></td>
<td>Short gestation/low birth weight</td>
</tr>
<tr>
<td>Angina pectoris/Ischemic heart disease</td>
<td></td>
<td>Respiratory distress syndrome</td>
</tr>
<tr>
<td>Congestive heart failure</td>
<td></td>
<td>Other respiratory- newborn</td>
</tr>
<tr>
<td>Strokes</td>
<td></td>
<td>Cleft lip/palate</td>
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<tr>
<td>Transient ischemic attack</td>
<td></td>
<td>SIDS</td>
</tr>
<tr>
<td>Atherosclerosis</td>
<td></td>
<td>Food and inhalant allergies</td>
</tr>
<tr>
<td>Aortic aneurysm</td>
<td></td>
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<tr>
<td>Peripheral vascular disease</td>
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<tr>
<td>Low HDL</td>
<td></td>
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<tr>
<td>High triglyceride levels</td>
<td></td>
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<tr>
<td><strong>Dermatology</strong></td>
<td></td>
<td>Psychiatry/Neurology</td>
</tr>
<tr>
<td>Skin aging</td>
<td></td>
<td>Sleep Disorders (longer latency, less</td>
</tr>
<tr>
<td>Palmpplanter pustulosis</td>
<td></td>
<td>total sleep time, lighter sleep)</td>
</tr>
<tr>
<td>Psoriasis (OR 1.4-2.4)</td>
<td></td>
<td>Obstructive sleep apnea</td>
</tr>
<tr>
<td>Pustular psoriasis (OR 10)</td>
<td></td>
<td>Daytime sleepiness</td>
</tr>
<tr>
<td>Premature hair loss</td>
<td></td>
<td>Highest rates of smoking in</td>
</tr>
<tr>
<td>Premature grey hair</td>
<td></td>
<td>schizophrenia, bipolar, depression,</td>
</tr>
<tr>
<td>Yellow fingers</td>
<td></td>
<td>anxiety disorders, ADHD, drug abuse</td>
</tr>
<tr>
<td><strong>Dental</strong> (Also see ENT)</td>
<td></td>
<td>Large contribution to early death rate in</td>
</tr>
<tr>
<td>Stained teeth</td>
<td></td>
<td>chronic mental illness</td>
</tr>
<tr>
<td>Bad breath (halitosis)</td>
<td></td>
<td>Relative risk of suicide compared to</td>
</tr>
<tr>
<td>Periodontal disease</td>
<td></td>
<td>former smokers: double to triple</td>
</tr>
<tr>
<td>Tooth loss</td>
<td></td>
<td>Risk of signing out AMA</td>
</tr>
<tr>
<td>Oral cancers</td>
<td></td>
<td>Reduced levels of some epilepsy meds</td>
</tr>
<tr>
<td>Reduced lower jaw bone density</td>
<td></td>
<td></td>
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<tr>
<td><strong>Emergency Medicine</strong></td>
<td></td>
<td>Pulmonary</td>
</tr>
<tr>
<td>Asthma/COPD exacerbations</td>
<td>Cough, shortness of breath</td>
<td></td>
</tr>
<tr>
<td>Burn injuries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hip and other fractures</td>
<td></td>
<td>Lung cancer</td>
</tr>
<tr>
<td>MIs/CHF/ Strokes/TIAs</td>
<td></td>
<td>Pneumonia, pneumococcal &amp; others</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>Influenza</td>
<td>Influenza</td>
</tr>
<tr>
<td><strong>Endocrinology</strong></td>
<td>Pneumonia (pneumococcal and others)</td>
<td>Bronchitis, emphysema, COPD</td>
</tr>
<tr>
<td>Insulin resistance/metabolic syndrome</td>
<td>Worse outcomes in disseminated</td>
<td>Pneumocystis colonization</td>
</tr>
<tr>
<td>Increased Diabetes Type 2</td>
<td>cryptococcosis</td>
<td></td>
</tr>
<tr>
<td>Diabetes complications: amputations</td>
<td></td>
<td>Rheumatology</td>
</tr>
<tr>
<td><strong>ENT</strong></td>
<td></td>
<td>Increased onset and complications of</td>
</tr>
<tr>
<td>Hearing loss</td>
<td></td>
<td>autoimmune diseases; rheumatoid</td>
</tr>
<tr>
<td>Oral cavity, pharynx, head &amp; neck</td>
<td></td>
<td>nodules &amp; multiple joint involvement in</td>
</tr>
<tr>
<td>cancers</td>
<td></td>
<td>rheumatoid arthritis, digital ischemia in</td>
</tr>
<tr>
<td>Obstructive sleep apnea</td>
<td></td>
<td>systemic sclerosis &amp; Reynaud’s, nephritis</td>
</tr>
<tr>
<td>Snoring</td>
<td></td>
<td>and dermatologic manifestations in SLE</td>
</tr>
<tr>
<td>Increased respiratory infections</td>
<td></td>
<td>Urology</td>
</tr>
<tr>
<td></td>
<td>Cervical cancer</td>
<td>Penile cancer (OR 4.5)</td>
</tr>
<tr>
<td></td>
<td>Infertility, miscarriage, stillbirth</td>
<td>Erectile dysfunction</td>
</tr>
<tr>
<td></td>
<td>Premature, low birth weight</td>
<td>Kidney cancer</td>
</tr>
<tr>
<td></td>
<td>Ectopic pregnancy</td>
<td>Lower sperm count and concentration</td>
</tr>
<tr>
<td></td>
<td>Early menopause</td>
<td>Abnormally shaped sperm-</td>
</tr>
<tr>
<td></td>
<td>Osteoporosis</td>
<td>teratozoospermia</td>
</tr>
</tbody>
</table>
Section 5: Resources for Providers

CME Course Listing for Providers

1. Medscape: Challenges of Treating Tobacco Users in High-Risk Populations (Slides With Audio) by Linda H Ferry, MD, MPH Charles J Bentz, MD, November 2007. The American College of Preventive Medicine designates this educational activity for a maximum of 1.0 AMA PRA Category 1 Credit™.

2. Medscape Smoking Resource Center
   Six additional online CME activities plus links to other helpful resources.

3. NY City Treating Nicotine Addiction CME April 2005
   CME must be printed out and mailed in.

4. Rx Consultant: CE for pharmacists. “Smoking Cessation for the Busy Clinician” covers NRT and oral medications with CE questions to mail in with $7.50 for CE.
   http://www.rxconsultant.com/issues/0709smoking.pdf

Online Resources for Providers

1. Rx for Change provides materials to facilitate the training of clinicians
   http://rxforchange.ucsf.edu/faculty

2. Treatobacco.net by the Society for Research on Nicotine and Tobacco www.srnt.org
   PowerPoint presentations on tobacco cessation medication efficacy and safety
   http://www.treatobacco.net/resource_library/slide_kits.cfm

3. University of California San Francisco Smoking Cessation Leadership Center
   http://smokingcessationleadership.ucsf.edu/Resources.html

4. California Smokers’ Helpline: Information for physicians and materials for physicians to give their patients.

5. Surgeon General’s Treating Tobacco Use and Dependence
   http://www.surgeongeneral.gov/tobacco/clinpack.html

6. AHRQ Supported Clinical Practice Guidelines
   Clinical Practice Guideline: Treating Tobacco Use and Dependence
   http://www.surgeongeneral.gov/tobacco/treating_tobacco_use08.pdf

7. An Algorithm for Optimal Smoking Cessation Treatment by John.Hughes@uvm.edu John R Hughes, University of Vermont with PowerPoint presentation at 2007 UK National Smoking Cessation Conference.

8. Redefining the Role of Tobacco Cessation Specialists by John Hughes

9. Varenicline: Implications for the field by Alex Bobak, GP
Section 6: Patient Education Fact Sheets

For reproducible education resources, see the following pages:

<table>
<thead>
<tr>
<th>Resource</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free Smoking Cessation Materials</td>
<td>14</td>
</tr>
<tr>
<td>Smoking and Your Health</td>
<td>15</td>
</tr>
<tr>
<td>5 Tips to Stop Smoking and Resources For Patients</td>
<td>16</td>
</tr>
</tbody>
</table>

Free Smoking Cessation Materials Available from the California Smokers’ Helpline

Gold Card
“Take Charge of your life” says this referral tool. A mock credit card, the Gold Card lists the smoke, chew, and TDD/TTY phone numbers.

General Audience Brochure
For smokers interested in quitting, provides service information including hours of operation, phone numbers, and what to expect when you call. Available in English, Spanish, Chinese, Vietnamese, and Korean.

American Indian Brochure
This culturally relevant brochure provides service information including hours of operation, phone number, and what to expect when you call.

Teen Provider Brochure
Designed for adults who want to help a teen quit smoking. Includes questions frequently asked by adults who refer teens to the Helpline and answers questions about free services.

Chew Tobacco Brochure
For chew tobacco users interested in quitting. Provides service information including hours of operation, phone numbers, and what to expect when you call.

For a complete listing of FREE promotional materials available from the California Smokers’ Helpline and information about how to order, visit http://www.californiasmokershelpline.org/Order.php
Smoking and Your Health
Stopping smoking is hard because nicotine is a very powerful drug. For some people, it can take several tries before they can stop smoking. But each time you try to stop smoking, the more likely you will be able to stop for good.

Smoking hurts almost every organ of the body. It causes many diseases and hurts the health of smokers in general:

Cancer
- Smoking causes cancers of the bladder, mouth, pharynx, larynx, esophagus, cervix, kidney, lung, pancreas, and stomach, and causes leukemia.

Cardiovascular Disease (Heart and Circulatory System)
- Smoking causes heart disease.
- Smoking can double a person's risk for stroke.
- Smoking lowers the blood flow in the body. Smokers are 10 times more likely than nonsmokers to develop peripheral vascular disease, which is a disease that hurts blood flow.

Respiratory Disease and Other Effects
- Cigarette smoking increases the risk of dying from lung disease.
- Cigarette smoking causes about 90% of all deaths from lung diseases.

Secondhand Smoke
Secondhand smoke is a harmful mix of gases that is released into the air when tobacco products burn or when smokers blow their smoke out. Secondhand smoke can cause disease and early death in children and adults who do not smoke. Secondhand smoke affects us right away and can cause heart disease and lung cancer in adults who do not smoke.

Good Reasons to Stop Smoking
- You will live longer and live better.
- You will lower your chance of having a heart attack, stroke or cancer.
- The people you live with, like your children, will have better health.
- If you are pregnant, stopping smoking will give you a better chance of having a healthy baby.
- You will have more money to spend on things other than cigarettes.

How Your Health Gets Better When You Stop Smoking

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Health Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 minutes</td>
<td>Heart rate drops.</td>
</tr>
<tr>
<td>12 hours</td>
<td>Carbon monoxide level in blood drops to normal.</td>
</tr>
<tr>
<td>48 hours</td>
<td>Ability to smell and taste starts to improve.</td>
</tr>
<tr>
<td>2–3 weeks</td>
<td>Chance of heart attack drops, circulation improves, walking becomes easier, and lung function improves.</td>
</tr>
<tr>
<td>1–9 months</td>
<td>Coughing and shortness of breath decrease.</td>
</tr>
<tr>
<td>1 year</td>
<td>Excess risk of coronary heart disease is half that of a smoker.</td>
</tr>
<tr>
<td>5 years</td>
<td>Risk of stroke is reduced to that of a non-smoker.</td>
</tr>
<tr>
<td>10 years</td>
<td>Lung cancer death rate is about half that of a smoker; Risk of cancer of the mouth, throat and esophagus decreases.</td>
</tr>
<tr>
<td>15 years</td>
<td>Risk of coronary heart disease returns to that of a non-smoker.</td>
</tr>
</tbody>
</table>
5 Tips to Stop Smoking
Congratulations on taking the first step! As your health care provider, I’m here to help you stop smoking. Here are some things you can do to help you stop.

1. Get Ready.
   • Set a date to stop smoking.
   • Change the things around you. Get rid of cigarettes and ashtrays in your home, car, and workplace.
   • Do not let people smoke in your home.
   • If you have tried to stop smoking before, think about what worked and what did not work.

2. Get Help.
   • Tell your friends, family, and coworkers that you are going to stop smoking. Ask them not to smoke around you or leave cigarettes out.
   • Talk to your health care doctor or provider.
   • Get counseling. The more counseling you have, the better your chances of stopping. Call 1-800-NO-BUTTS.

3. Learn New Ways of Living.
   • Stay busy.
   • Change the things that you do every day. Take a different road to work or eat in a different place.
   • Let go of stress. Exercise is a good way to do this.
   • Plan something fun to do every day.
   • Drink a lot of water.

4. Use Medications in the Right Way.
   • Talk to your health care provider, or doctor, about how to use medications.
   • Read and follow the directions. Call your doctor if you have any questions.

5. Be Ready for Hard Work.
   • Most people try to stop smoking several times before they finally stop.
   • If you smoke again, think about what caused you to smoke. Try to stay away from those situations in the future. Do not give up. Try again!

Resources for Patients

<table>
<thead>
<tr>
<th>L.A. Care (for information about coverage plans)</th>
<th>American Cancer Society</th>
<th>Nicotine Anonymous</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-888-839-9909</td>
<td>1-800-ACS-2345</td>
<td>1-877-879-6422</td>
</tr>
<tr>
<td><a href="http://www.lacare.org">www.lacare.org</a></td>
<td>(1-866-228-4327)</td>
<td><a href="http://www.nicotine-anonymous.org/">http://www.nicotine-anonymous.org/</a></td>
</tr>
<tr>
<td>The California Smokers’ Helpline</td>
<td>American Heart Association</td>
<td>Additional Online Resources:</td>
</tr>
<tr>
<td>1-800-NO-BUTTS</td>
<td><a href="http://www.americanheart.org">www.americanheart.org</a></td>
<td>Tobacco Free California</td>
</tr>
<tr>
<td>(1-800-662-8887)</td>
<td>1-800-AHA-USA-1 or 1-800-242-8721</td>
<td><a href="http://www.tobaccofreeca.com/">http://www.tobaccofreeca.com/</a></td>
</tr>
<tr>
<td><a href="http://www.californiasmokershelpline.org">www.californiasmokershelpline.org</a></td>
<td>American Lung Association</td>
<td>Quit Net</td>
</tr>
<tr>
<td>American Legacy Foundation</td>
<td><a href="http://www.americanlung.org">www.americanlung.org</a></td>
<td><a href="http://www.quitnet.com">www.quitnet.com</a></td>
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<td>202-454-5555</td>
<td>Freedom From Smoking Online: <a href="http://www.lungusa.org/ffs/index.html-">www.lungusa.org/ffs/index.html-</a></td>
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<td><a href="http://www.americanlegacy.org">www.americanlegacy.org</a></td>
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<td><a href="http://www.cancer.gov/cancertopics/smoking">www.cancer.gov/cancertopics/smoking</a></td>
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<tr>
<td>It’s Quitting Time LA!</td>
<td></td>
<td>VideoJug.com -- Videos and online discussion boards</td>
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<tr>
<td><a href="http://www.laquis.com">www.laquis.com</a></td>
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<td><a href="http://www.videojug.com/tag/quit-smoking">http://www.videojug.com/tag/quit-smoking</a></td>
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</tbody>
</table>
About COPD

COPD (chronic obstructive pulmonary disease) is a disease of the lungs that makes it hard to breathe. There is no cure for COPD but with the right care you can manage the symptoms and make life more enjoyable.

What is COPD?
COPD is a disease of the lungs that can get worse as time goes on. With COPD less air flows in and out of your lungs and breathing becomes harder.

How do people get COPD?
In most people COPD is caused by damage to the lungs from smoking.

How does COPD affect your breathing?
COPD makes your lungs work harder. Because of damage to your lungs, airways can become blocked making it harder for you to breathe. Air can also get trapped in your lungs making it harder to breathe.

Diagnosis COPD
If your doctor thinks you have COPD he or she will examine you, have you take some tests, and talk to you about your medical history.

Treating COPD
Treatment for COPD can include medication or oxygen treatment. You may be given medications to be taken daily or as needed for your symptoms. Quitting smoking is the most important thing you can do to treat COPD. Learning breathing techniques, exercise, and lung rehabilitations programs can help you breath better.
EPOC
Lo que necesita saber…

EPOC
La EPOC (enfermedad pulmonar obstructiva crónica) es una enfermedad de los pulmones que dificulta la respiración. No existe cura para la EPOC pero con el cuidado correcto usted puede manejar los síntomas y disfrutar más de la vida.

¿Qué es la EPOC?
La EPOC es una enfermedad de los pulmones que puede empeorar con el paso del tiempo. Cuando usted padece EPOC, entra y sale menos cantidad de aire de sus pulmones y se le hace más difícil respirar.

¿Cómo se produce la EPOC?
En la mayoría de las personas, la EPOC se produce a causa del daño a los pulmones producido por fumar.

¿Cómo afecta la EPOC su respiración?
La EPOC hace que sus pulmones trabajen más. Debido al daño a sus pulmones, las vías respiratorias pueden bloquearse lo que hace que respirar le resulte más difícil. También, el aire puede quedar atrapado en los pulmones haciendo que le sea más difícil respirar.

Diagnóstico de la EPOC
Si su médico considera que usted padece EPOC, le examinará, le pedirá que se realicen algunos exámenes y hablará con usted sobre su historia médica.

Tratamiento de la EPOC
El tratamiento para la EPOC puede incluir medicamentos o tratamiento con oxígeno. Es posible que se le indique que tome medicamentos a diario o cuando sea necesario para tratar sus síntomas. Dejar de fumar es lo más importante que usted puede hacer para tratar la EPOC. Aprender técnicas de respiración, realizar ejercicios y participar en programas de rehabilitación pulmonar pueden ayudarle a respirar mejor.
COPD: Using Inhalers

Some COPD medications are taken using a device called an inhaler. The inhaler helps you take a measured dose of medication into your lungs. Not all inhalers work the same way. Have your healthcare provider show you how to use and care for the type of inhaler you’re given.

Using Metered-Dose Inhalers (MDIs) with Spacers

Metered-dose inhalers use a fine spray to dispense medication. You may be asked to use a spacer (holding tube) with your inhaler. The spacer helps make sure all the medication you need goes to your lungs.

1. Remove the caps from the inhaler and spacer. Shake the inhaler well and attach the spacer. If the inhaler is being used for the first time or has not been used in a while, prime it as directed by its maker.
2. Breathe out normally. Put the spacer between your teeth and close your lips tightly around it. Keep your chin up.
3. Spray 1 puff into the spacer by pressing down on the inhaler. Then slowly breathe in as deeply as you can. This should take 3 to 5 seconds. (If you breathe too quickly, you may hear a whistling sound in the spacer.)
4. Take the spacer out of your mouth. Hold your breath for a count of 10 (if possible). Then slowly breathe out. If a second dose is prescribed, wait at least 30 seconds before taking the next puff.

Using MDIs Without Spacers

Inhalers work best with spacers. But if you don’t have your spacer with you, these tips will help.

1. Shake the inhaler and remove the cap. Breathe out through your mouth.
2. Put the inhaler mouthpiece in your mouth and close your lips tightly
around it. (Or, if told to do so by your healthcare provider, hold the inhaler 1 to 2 inches from your mouth.)

3. Keep your chin up. Spray 1 puff by pressing down on the inhaler while breathing in deeply through your mouth for about 5 seconds. Hold your breath for a count of 10. Then breathe out slowly.

**Using Dry-Powder Inhalers (DPIs)**

Some inhalers use tiny grains of powder to dispense medication. These don’t require spacers. They often have counters that track how many doses you use. Dry-powder inhalers don’t all work the same way. Be sure you know how to use yours properly.

1. Load the prescribed dose of medication by following the instructions that come with the inhaler.
2. Breathe out normally, holding the inhaler away from your mouth. Hold your chin up.
3. Put the mouthpiece between your lips. Breathe in quickly and deeply through the inhaler—not through your nose. You may not feel or taste the medication as you breathe in. This is normal.
4. Take the mouthpiece out of your mouth. Hold your breath for a count of 10 (if possible).
5. Breathe out slowly—but not through the inhaler. Moisture from your breath can make the powder stick inside the inhaler. Also, be sure to close the inhaler and store it in a dry place.

© 2000-2011 Krames StayWell, 780 Township Line Road, Yardley, PA 19067. All rights reserved. This information is not intended as a substitute for professional medical care. Always follow your healthcare professional's instructions.
Enfermedad pulmonar obstructiva crónica (EPOC): uso de los inhaladores

Algunos medicamentos para la enfermedad pulmonar obstructiva crónica se toman mediante un aparato llamado inhalador, que ayuda a introducir una cantidad medida del medicamento en los pulmones. No todos los inhaladores funcionan de la misma forma. Pida a su proveedor de atención médica que le muestre cómo usar y mantener el tipo de inhalador que le han dado.

Utilización de inhaladores de dosis medida con espaciadores

Los inhaladores de dosis medida atomizan el medicamento en pequeñas partículas para facilitar su inhalación. Es posible que le indiquen que use un espaciador (un tubo) con su inhalador para asegurar que toda la dosis del medicamento entre en sus pulmones.

1. Quite los tapones del inhalador y del espaciador. Sacuda bien el inhalador y conecte el espaciador.
   Si está usando el inhalador por primera vez o no lo ha usado durante algún tiempo, préparélo siguiendo las instrucciones del fabricante.
2. Respire normalmente. Ponga el espaciador entre los dientes y cierre los labios firmemente a su alrededor. Mantenga la barbilla levantada.
3. Presione el inhalador hacia abajo para liberar una dosis de medicamento en el tubo espaciador e inhale tan profundamente como pueda durante 3 a 5 segundos. (Si inhala demasiado rápido es posible que oiga un silbido en el espaciador.)
4. Quite el espaciador de la boca. Cuento mentalmente hasta 10 manteniendo el aire dentro de los pulmones (si puede) y luego expúlselo lentamente. Si le han indicado una segunda dosis, espere al menos 30 segundos antes de tomarla.

Utilización de inhaladores de dosis medida sin espaciadores

Los inhaladores funcionan mejor con un espaciador, pero en el caso de que no tenga el espaciador a mano, los siguientes consejos le serán útiles:

1. Sacuda el inhalador y quítele la tapa. Expulse el aire.
2. Ponga la boquilla del inhalador en su boca y cierre firmemente sus labios alrededor de ella. (O, si se lo ha indicado así su proveedor de atención médica, coloque el inhalador a 1 ó 2 pulgadas de su boca.)
3. Mantenga elevada la barbilla. Rocíe una dosis presionando hacia abajo en el inhalador mientras inspira profundamente por la boca durante unos 5 segundos. Sostenga el aire hasta que cuente mentalmente hasta 10. Luego expulse el aire lentamente.
Cómo usar inhaladores de polvo seco

Algunos inhaladores emplean diminutos granos de polvo para administrar el medicamento. Estos inhaladores no necesitan espaciadores y suelen tener contadores para registrar el número de dosis que se administran. No todos los inhaladores de polvo seco funcionan de la misma manera, por lo que es importante que usted sepa usar el suyo correctamente.

1. Cargue la dosis recetada de medicamento siguiendo las instrucciones que vienen con el inhalador.
2. Expulse normalmente el aire de los pulmones, sujetando el inhalador lejos de la boca. Mantenga la barbilla elevada.
3. Póngase la boquilla del inhalador entre los labios. Inhale rápido y hondo a través del inhalador (no por la nariz). Es posible que no sienta la presencia o el sabor del medicamento mientras inhala; esto es normal.
4. Quite la boquilla de la boca. Cuente mentalmente hasta 10 manteniendo el aire en los pulmones (si puede) y a continuación expulse el aire lentamente (pero no a través del inhalador).
5. La humedad presente en el aliento podría hacer que se pegue el polvo que está dentro del inhalador. Asegúrese de cerrar bien el inhalador y de guardarlo en un lugar seco.

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Chronic Obstructive Pulmonary Disease (COPD)

COPD is a group of lung diseases that block the flow of air as you breathe out or exhale. Some of the most common diseases include:
- Emphysema
- Chronic bronchitis
- Asthma

Air needs to move in and out of your lungs to meet your body’s needs. When the flow of air out of the lungs is blocked, stale air becomes trapped in the lungs. This makes it harder for the lungs to get enough oxygen to the rest of the body.

Causes

The leading causes of COPD are:
- Smoking
- Working in a polluted environment
- Second hand smoke
Signs

The signs of COPD are:
- Coughing
- Wheezing
- Feeling short of breath

These signs can be serious enough to affect your daily activities.

Your Care

Your doctor will do a medical exam and order tests such as:
- Chest x-ray
- CT scan
- Blood test
- Pulmonary function test

The damage to your lungs from COPD cannot be reversed and there is no cure. With the help of your health care team, you can manage the disease to slow its progress. To manage your COPD:
- Stay active.
- Quit smoking.
- Maintain a healthy weight.
- Eat a balanced diet.
- Drink a lot of fluids.
- Control stress.
- Take your medicines such as inhalers, steroids and antibiotics as ordered.
- Do home oxygen therapy if ordered.
- Attend a pulmonary rehab program to learn about COPD and exercise to improve your health.

Talk to your health care team about your questions and concerns.
Enfermedad pulmonar obstructiva crónica (EPOC)

La EPOC es un grupo de enfermedades pulmonares que bloquean el flujo de aire cuando se inhala o exhala. Algunas de las enfermedades más comunes son:
- enfisema;
- bronquitis crónica;
- asma.

El aire tiene que entrar y salir de los pulmones para satisfacer las necesidades de su cuerpo. Cuando se obstruye el flujo de aire que sale de los pulmones, el aire viciado queda atrapado en ellos. Esto impide que los pulmones obtengan suficiente oxígeno para el resto del cuerpo.

**Causas**

Las causas principales de la EPOC son:
- fumar;
- trabajar en un ambiente contaminado;
- ser fumador pasivo.
Síntomas

Los síntomas de la EPOC son:
- tos;
- silbidos al respirar;
- falta de aire.

Estos síntomas pueden ser lo suficientemente graves como para afectar sus actividades diarias.

Su cuidado

Su médico lo examinará y ordenará exámenes como:
- radiografía de tórax;
- tomografía computarizada;
- examen de sangre;
- examen de la función pulmonar.

El daño que la EPOC produce en los pulmones no se puede revertir ni existe cura. Con la ayuda de su equipo de atención de salud, puede controlar la enfermedad para retardar su evolución. Para controlar la EPOC:
- manténgase activo;
- deje de fumar;
- mantenga un peso saludable;
- consuma una dieta equilibrada;
- beba mucho líquido;
- controle el estrés;
- tome sus medicamentos como inhaladores, esteroides y antibióticos de acuerdo con las instrucciones;
- haga oxigenoterapia domiciliaria si se lo indican;
- asista a un programa de rehabilitación pulmonar para aprender sobre la EPOC y los ejercicios para mejorar su salud.

Hable con su equipo de atención de salud si tiene preguntas o dudas.

2/2007. Developed through a partnership of Mount Carmel Health, Ohio State University Medical Center, and OhioHealth, Columbus, Ohio. Available for use as a public service without copyright restrictions at www.healthinfotranslations.com.
Introduction

This booklet is based on information from the U.S. Public Health Service Consumer Guide, *Help for Smokers and Other Tobacco Users*, May 2008. The booklet provides strategies and recommendations designed to assist tobacco users to quit.

This material was developed by the Los Angeles County Tobacco Control and Prevention Program. For questions, please contact the Los Angeles County Tobacco Control and Prevention Program at (213) 351-7890 or go to http://publichealth.lacounty.gov/tob/

Funding for this material provided by a generous grant from L.A. Care Health Plan.
Welcome!

Congratulations on taking the first step to stop smoking! We all know that quitting smoking is not easy. But there is hope! All of the information in this booklet is based on the best ways to help you quit. These steps will give you the best chance of stopping smoking for good.
Nicotine: A Strong Drug
Stopping smoking is hard because nicotine is a very strong drug. For some people, it can take many tries before they can stop smoking. But each time you try to stop, the more likely you will be able to stop for good.

Good Reasons to Stop Smoking
✓ You will feel better, have more energy and breathe easier.
✓ You will have less chance of getting sick.
✓ The people around you, especially children, will be healthier. Breathing other people’s smoke can cause health problems.
✓ If you are pregnant, you and your baby will be healthier.
✓ You will save more money.

If you smoke one pack per day, look what you can save if you stop smoking for...

One day: $5
One week: $35
One month: $150
One year: $1,820
10 years: $18,200
20 years: $36,400

Prices are based on a 2007 average of $5.00 per pack.
Smoking and Your Health
Smoking is bad for your health. Smoking hurts almost every organ of the body and causes many health problems such as:

- Cancer
- Heart disease
- Stroke
- Lung disease
- Unhealthy effects on pregnancy and baby

Special Cases
Everyone can stop smoking. The best reasons to quit are the ones which are personal for you.

Pregnant women or new mothers: Quitting will help your baby be healthier.

People who have had heart attacks: Quitting can lower your risk of another heart attack.

Cancer patients: Quitting lowers your chance of getting cancer again.

Parents of children and teenagers: Quitting can keep your family from getting sick from secondhand smoke.
Your Health Gets Better When You Stop Smoking

After 20 minutes: Heart rate slows down.

After 12 hours: Carbon monoxide level in blood drops to normal.

After 48 hours: Sense of smell and taste gets better.

After 2–3 weeks: Chance of heart attack is lower, blood flow gets better, walking becomes easier, breathing gets better.

After 1–9 months: Coughing and shortness of breath happen less often.

After 1 year: Risk of heart disease is half that of a smoker.

After 5 years: Risk of stroke is the same as that of a non-smoker.

After 10 years: Lung cancer death risk is about half that of a smoker; risk of cancer of the mouth and throat is lower.

After 15 years: Risk of heart disease goes down to that of a non-smoker.

Secondhand Smoke and Health

Secondhand smoke, or the smoke you breathe when someone else smokes, is not good. Cigarettes, cigars, and pipes all give off secondhand smoke. It is not safe to be around any amount of secondhand smoke.

How Secondhand Smoke Can Hurt Us

• Secondhand smoke causes disease and early death in children and adults who do not smoke.

Secondhand Smoke and Children

• Secondhand smoke can hurt children. It can cause Sudden Infant Death Syndrome (SIDS), lung problems, and ear problems. It can also make asthma attacks worse and happen more often.

• Smoking can slow lung growth and cause breathing problems in children.
So How Do I Stop Smoking?

Follow these simple steps and you can be on your way to a life without smoking.

*Step 1: Get Ready*
*Step 2: Get Help*
*Step 3: Get Medicine*

Stay Quit!
Step 1: Get Ready

- Choose a day to stop smoking.
  After you quit, do not smoke – not even a puff!
  Do not use any tobacco.

- Change the things around you.
  Stop buying cigarettes.
  Get rid of ashtrays in your home, car and workplace.
  Do not let people smoke in your home.

Questions to think about...
Think about these questions before you try to stop smoking. You may want to talk about your answers with your doctor.

1. Why do you want to stop smoking?

2. If you tried to stop smoking in the past, what helped you? What did not help you?

3. What situations will be hard for you after you stop smoking? How will you plan to handle them?

4. What pleasures do you get from smoking? What ways can you still get pleasure if you stop smoking?
Follow this 5-day countdown to your quit date:

| 5 days before | • Think about why you want to stop smoking.  
• Tell your friends and family you are planning to stop.  
• Stop buying cigarettes. |
|----------------|----------------------------------------------------------------------------------|
| 4 days before  | • Pay attention to when and why you smoke.  
• Think of other things to hold in your hand, like a rubber band or a stress ball.  
• Think of habits or things that you do every day that you can change. |
| 3 days before  | • Think of who you can ask for help. |
| 2 days before  | • Get medicine to help you stop smoking. See your doctor to get a prescription. |
| 1 day before   | • Throw away cigarettes, matches and lighters. Put away ashtrays.  
• Clean your clothes to get rid of the smell of cigarettes. |
| **Quit Day!**   | • Keep very busy.  
• Tell family and friends that today is your quit day.  
• Stay away from alcohol.  
• Give yourself a treat or do something special. |
**Step 2: Get Help**

You have a better chance of quitting if you have help.

- **Tell your family, friends and people you work with** that you are going to stop smoking. Ask for their help.

- **Talk to your doctor, nurse, or other health care worker. They can help you quit.** Here are some questions you can ask your doctor:
  - How can you help me stop smoking?
  - What medicine is best for me? How do I use it?
  - What should I do if I need more help?
  - What is it like to stop smoking?

- **Call the CALIFORNIA SMOKERS’ HELPLINE** for FREE help.
  
  1-800-NO-BUTTS (or 1-800-662-8887) **English**
  1-800-45-NO-FUME (or 1-800-45-66-3863) **Spanish**
  1-800-838-8917 **Chinese**
  1-800-556-5564 **Korean**
  1-800-778-8440 **Vietnamese**
  1-800-933-4TDD **Hearing Impaired**
  1-800-844-CHEW **Chewers’ Helpline**

There are programs for pregnant women, teens and tobacco chewers too. You can also go to: [www.californiasmokershelpline.org](http://www.californiasmokershelpline.org)
Step 3: Get Medicine

If you are trying to stop smoking, medicine can help raise your chances of stopping for good. **Talk to your doctor about getting the right medicine for you.**

If you are pregnant or trying to become pregnant, nursing, under age 18, smoking fewer than 10 cigarettes per day or have a health problem, tell your doctor.

Ask your doctor about medicines that can help you stop smoking:

- Nicotine Patch
- Nicotine Gum
- Nicotine Lozenge
- Nicotine Nasal Spray
- Nicotine Inhaler
- Bupropion SR (pill)
- Varenicline (pill)
How to get medicine to help you stop smoking

1 Talk to your doctor
   • Tell your doctor that you want to stop smoking.
   • Ask your doctor about getting a prescription for medicine that is right for you.
   • If you have Medi-Cal, you may need prior authorization. Check your health plan to see if your medicine is covered. Ask your doctor for help.

2 Call the California Smokers’ Helpline
   1-800-NO-BUTTS
   (1-800-662-8887)
   • A trained person will help you with a plan to stop smoking.
   • After the first call, the Helpline will send you a certificate of enrollment.

3 Go to a pharmacy or drug store
   • Choose a pharmacy that works with your health plan.
   • Bring your prescription to the pharmacy.
   • Give the pharmacy your certificate from the California Smokers’ Helpline.
   • Also remember to bring your health plan member ID card.
Stay Quit!

If you “slip” or start smoking again, do not give up. Keep trying. Remember, many people try many times before they finally stop smoking for good.

- Stay away from alcohol.
- Stay away from other people when they smoke. If you can, go to a place where smoking is not allowed.
- Eat healthy food and get exercise. This will help you manage your weight, and it will help keep your mood up.

Talk to your doctor if you are having problems with any of these situations, and remember:

Step 1: Get ready

Step 2: Get help

Step 3: Get medicine

Stay Quit!
More ideas to help you stop smoking:

✓ Keep busy! Go for a walk or talk to your friends and family.
✓ Drink a lot of water.
✓ After meals, brush your teeth or use mouthwash.
✓ Take a deep breath through your nose and blow out slowly through your mouth. Do this 10 times.
✓ Do not allow smoking in your home or your car.

Keep Moving!

Be active and exercise. Choose activities you enjoy and slowly add more time that you do them. It’s also a good idea to check with your doctor before starting any type of activity.

✓ Find ways to walk, bike or jog more.
✓ Park the car further away so you can walk more.
✓ Take the stairs instead of the elevator.
✓ Play with your children.
✓ Go dancing!

Eat Healthy Foods

✓ Eat more vegetables, whole grains, and fat-free or low-fat milk products. Drink fat-free or low-fat milk.
✓ Eat lean meats, chicken, fish, beans, eggs and nuts.
✓ Cut down on fat, salt and sugar.
More Information to Help You Stop Smoking

L.A. Care
1-888-4LA-Care
or 1-888-452-2273
www.lacare.org

American Legacy Foundation
1-202-454-5555
www.americanlegacy.org

It’s Quitting Time LA!
www.laquits.com

California Smokers’ Helpline
1-800-NO-BUTTS or
1-800-662-8887
www.californiasmokershelpline.org

American Cancer Society
1-800-ACS-2345 (1-866-228-4327 for TTY)
www.cancer.org

American Heart Association
1-800-AHA-USA-1 or
1-800-242-8721
www.americanheart.org

American Lung Association of California
(510) 638-LUNG
www.californialung.org

1-800-QUIT-NOW
1-800-784-8669
www.smokefree.gov
Guía del paciente para dejar de fumar
Introducción

Este folleto se basa en información de la guía del consumidor de servicios de salud pública de los Estados Unidos Help for Smokers and Other Tobacco Users (“Ayuda para fumadores y otros consumidores de tabaco”), de mayo de 2008. El folleto ofrece estrategias y recomendaciones diseñadas para ayudar a los consumidores de tabaco a dejar de fumar.

Este material ha sido desarrollado por el Programa de prevención y control del tabaco del condado de Los Ángeles. Si tiene alguna pregunta, póngase en contacto con el Programa de prevención y control del tabaco del condado de Los Ángeles llamando al (213) 351-7890 o visitando http://publichealth.lacounty.gov/tob/

El financiamiento de estos materiales proviene de un generoso subsidio de L.A. Care Health Plan.
¡Bienvenidos!

¡Felicitaciones por tomar el primer paso para dejar de fumar! Todos sabemos que dejar de fumar no es sencillo. Pero ¡hay esperanza! Toda la información de este folleto se basa en los mejores métodos para ayudarle a dejar de fumar. Estos pasos le darán la mejor oportunidad para dejar de fumar para siempre.
La nicotina: Una droga poderosa
Dejar de fumar es difícil porque la nicotina es una droga muy poderosa. Algunas personas tienen que intentarlo muchas veces antes de dejar de fumar. Pero cada vez que intenta dejar de fumar tiene más probabilidades de dejarlo para siempre.

Buenos motivos para dejar de fumar
✓ Se sentirá mejor, tendrá más energía y respirará mejor.
✓ Tendrá menos probabilidades de enfermarse.
✓ Las personas a su alrededor, sobre todo los niños, estarán más saludables. Respirar el humo de otras personas puede causar problemas de salud.
✓ Si está embarazada, usted y su bebé estarán más saludables.
✓ Ahorrará más dinero.

Si fuma un paquete al día, fíjese cuánto puede ahorrar si deja de fumar por…

<table>
<thead>
<tr>
<th>Duración</th>
<th>Ahorro</th>
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<tbody>
<tr>
<td>Un día</td>
<td>$5</td>
</tr>
<tr>
<td>Una semana</td>
<td>$35</td>
</tr>
<tr>
<td>Un mes</td>
<td>$140</td>
</tr>
<tr>
<td>Un año</td>
<td>$1,820</td>
</tr>
<tr>
<td>10 años</td>
<td>$18,200</td>
</tr>
<tr>
<td>20 años</td>
<td>$36,400</td>
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</tbody>
</table>

Los precios se basan en el promedio de $5.00 por paquete en 2007.
Fumar y su salud
Fumar es malo para su salud. Fumar afecta casi todos los órganos y causa muchos problemas de salud como:

- Cáncer
- Enfermedades de corazón
- Ataque cerebral
- Enfermedad pulmonar
- Efectos no saludables en el embarazo y el bebé

Casos especiales
Toda persona puede dejar de fumar. Los mejores motivos para dejar de fumar son los motivos personales de cada uno.

Mujeres embarazadas o nuevas mamás: Dejar de fumar ayudará a que su bebé esté más saludable.

Personas que han tenido un ataque al corazón: Dejar de fumar puede disminuir el riesgo de tener otro ataque al corazón.

Enfermos de cáncer: Dejar de fumar disminuye las probabilidades de volver a tener cáncer.

 Padres de niños y adolescentes: Dejar de fumar puede evitar que la familia se enferme por el humo de fumador pasivo.
Su salud mejora cuando deja de fumar

<table>
<thead>
<tr>
<th>Duración</th>
<th>Efecto</th>
</tr>
</thead>
<tbody>
<tr>
<td>Después de 20 minutos</td>
<td>Disminuye el ritmo del corazón.</td>
</tr>
<tr>
<td>Después de 12 horas</td>
<td>El nivel de monóxido de carbono en la sangre vuelve a lo normal.</td>
</tr>
<tr>
<td>Después de 48 horas</td>
<td>Mejoran el sentido del gusto y el olfato.</td>
</tr>
<tr>
<td>Después de 2 ó 3 semanas</td>
<td>Disminuye la probabilidad de tener un ataque al corazón, mejora el flujo sanguíneo, es más fácil caminar y mejora la respiración.</td>
</tr>
<tr>
<td>Después de 1 a 9 meses</td>
<td>Se tose y falta la respiración con menos frecuencia.</td>
</tr>
<tr>
<td>Después de 1 año</td>
<td>El riesgo de tener un ataque al corazón es 50% menor que el de un fumador.</td>
</tr>
<tr>
<td>Después de 5 años</td>
<td>El riesgo de ataque cerebral es el mismo que el de los no fumadores.</td>
</tr>
<tr>
<td>Después de 10 años</td>
<td>Tiene aproximadamente 50% menos riesgo de morir por cáncer de pulmón que un fumador; el riesgo de tener cáncer de boca y de garganta es menor.</td>
</tr>
<tr>
<td>Después de 15 años</td>
<td>El riesgo de tener una enfermedad del corazón disminuye al mismo nivel de los no fumadores.</td>
</tr>
</tbody>
</table>

El humo de fumador pasivo y la salud

El humo de fumador pasivo, es decir, el humo que se respira cuando fuma otra persona, no es bueno. Los cigarrillos, los puros y las pipas producen todos humo de fumador pasivo. Hay riesgo por estar cerca de cualquier cantidad de humo de fumador pasivo.

Cómo nos puede perjudicar el humo de fumador pasivo
- El humo de fumador pasivo es causa de enfermedad y muerte temprana en niños y adultos que no fuman.

El humo de fumador pasivo y los niños
- El humo de fumador pasivo puede perjudicar a los niños. Puede causar muerte de cuna, problemas de pulmón y de oído. También puede empeorar los ataques de asma y hacer que se produzcan con más frecuencia.
- Fumar puede retrasar el crecimiento de los pulmones y causar problemas respiratorios en los niños.
Entonces, ¿cómo dejo de fumar?

Si sigue estos pasos sencillos, irá de camino hacia una vida sin tabaco.

**Paso 1:** Prepárese

**Paso 2:** Pida ayuda

**Paso 3:** Obtenga medicamentos

¡Siga sin fumar!
Paso 1: Prepárese

- **Escoja un día para dejar de fumar.**
  Cuando deje de fumar, no vuelva a hacerlo, ¡ni siquiera una probadita! No use nada de tabaco.

- **Cambiie las cosas a su alrededor.**
  Deje de comprar cigarrillos.
  Tire los ceniceros de su casa, su carro y su lugar de trabajo.
  No deje que la gente fume en su casa.

**Preguntas en las que pensar...**

Piense en estas preguntas antes de tratar de dejar de fumar. Puede que desee comentar sus respuestas con su médico.

1. ¿Por qué quiere dejar de fumar?

2. Si intentó dejar de fumar en el pasado, ¿qué le ayudó? ¿Qué no le ayudó?

3. ¿Qué situaciones serán difíciles para usted cuando deje de fumar? ¿Cómo piensa manejarlas?

4. ¿Qué placer obtiene de fumar? ¿Cómo puede seguir obteniendo placer si deja de fumar?
| 5 días antes | • Piense por qué quiere dejar de fumar.  
• Dígale a sus amigos y a su familia que piensa dejar de fumar.  
• Deje de comprar cigarrillos. |
| 4 días antes | • Preste atención a cuándo y por qué fuma.  
• Piense en otras cosas que pueda tener en la mano como una liga o una pelota anti-estrés.  
• Piense en hábitos o cosas que hace cada día y que puede cambiar. |
| 3 días antes | • Piense a quién puede pedir ayuda. |
| 2 días antes | • Consiga una medicina que le ayude a dejar de fumar. Vea al médico para que le dé una receta. |
| 1 día antes | • Tire los cigarrillos, los cerillos y los encendedores. Guarde los ceniceros.  
• Lave su ropa para deshacerse del olor a cigarrillo. |
| El día que deje de fumar | • Manténgase muy ocupado.  
• Dígale a su familia y a sus amigos que hoy es el día que deja de fumar.  
• Aléjese del alcohol.  
• Dese un gusto o haga algo especial para usted. |
Paso 2: Pida ayuda

Tiene más probabilidades de dejar de fumar si recibe ayuda.

- Dígale a su familia, a sus amigos y a la gente con la que trabaja que va a dejar de fumar. Pida ayuda.

- Hable con su médico, su enfermera u otro trabajador de atención médica. Ellos pueden ayudarle a dejar de fumar. Algunas preguntas que puede hacerle a su médico:
  - ¿Cómo puede ayudarme a dejar de fumar?
  - ¿Qué medicina es mejor para mí? ¿Cómo la utilizo?
  - ¿Qué debo hacer si necesito más ayuda?
  - ¿Cómo es dejar de fumar?

- Llame a la LÍNEA DE AYUDA PARA FUMADORES DE CALIFORNIA para recibir AYUDA gratuita.
  1-800-NO-BUTTS (o 1-800-662-8887) inglés
  1-800-45-NO-FUME (o 1-800-45-66-3863) español
  1-800-838-8917 chino
  1-800-556-5564 coreano
  1-800-778-8440 vietnamita
  1-800-933-4TDD personas con deficiencia auditiva
  1-800-844-CHEW Línea de ayuda para los que mastican tabaco

También hay programas para mujeres embarazadas, adolescentes y mascadores de tabaco. También puede visitar: www.californiasmokershelpline.org
Paso 3: Obtenga medicamentos

Si trata de dejar de fumar, la medicina puede ayudar a aumentar sus probabilidades de dejarlo para siempre. **Hable con su médico sobre cómo obtener el medicamento apropiado para usted.**

Si está embarazada o tratando de quedar embarazada, si está amamantando, tiene menos de 18 años, fuma menos de 10 cigarrillos al día o tiene un problema de salud, dígase lo a su médico.

**Pregúntele a su médico sobre medicamentos que pueden ayudarle a dejar de fumar:**
- El parche de nicotina
- Chicle de nicotina
- Caramelos de nicotina
- Rociador nasal de nicotina
- Inhalador de nicotina
- Bupropion SR (píldora)
- Varenicline (píldora)
# Cómo conseguir medicina que le ayude a dejar de fumar

## 1 Hable con su médico

- Dígale a su médico que quiere dejar de fumar.
- Pregúntele a su médico cómo obtener una receta para una medicina apropiada para usted.
- Si tiene Medi-Cal, puede que necesite autorización previa. Pregunte en su plan de salud para ver si su medicina está cubierta.
- Pida ayuda a su médico.

## 2 Llame a la Línea para fumadores de California  
1-800-NO-BUTTS  
(1-800-662-8887)

- Una persona capacitada le ayudará con un plan para dejar de fumar.
- Después de la primera llamada, la línea de ayuda le enviará un certificado de inscripción.

## 3 Vaya a una farmacia

- Elija una farmacia que trabaje con su plan de salud.
- Lleve su receta a la farmacia.
- Déle a la farmacia su certificado de la línea de ayuda para fumadores de California.
- Recuerde también llevar su tarjeta de miembro del plan de salud.
¡Siga sin fumar!

Si “cae” o empieza a fumar otra vez, no se rinda. Siga intentándolo. Recuerde, mucha gente lo intenta muchas veces antes de dejar de fumar para siempre.

- **Aléjese del alcohol.**
- **Aléjese de otras personas cuando fumen.** Si puede, vaya a un lugar donde no se permita fumar.
- **Coma alimentos saludables y haga ejercicio.** Esto le ayudará a controlar su peso y a tener un buen estado de ánimo.

Hable con su médico si tiene problemas en alguna de estas situaciones, y recuerde:

**Paso 1:** Prepárese
**Paso 2:** Pida ayuda
**Paso 3:** Obtenga medicamentos

¡Siga sin fumar!
Más ideas para ayudarle a dejar de fumar:

✓ ¡Manténgase ocupado! Salga a pasear o hable con sus amigos y su familia.
✓ Tome mucha agua.
✓ Después de las comidas, cepílleselos dientes o utilice un enjuague bucal.
✓ Respire profundamente por la nariz y exhale lentamente por la boca. Haga esto 10 veces.
✓ No deje que fumen en su casa ni en su carro.

¡Manténgase en movimiento!

**Permanezca activo y haga ejercicio.** Elija actividades que disfrute y dedíquelas más tiempo poco a poco. También es buena idea hablar con su médico antes de empezar cualquier tipo de actividad.

✓ Busque maneras de caminar, andar en bicicleta o correr más.
✓ Estacione su carro más lejos para poder caminar más.
✓ Tome las escaleras en vez del elevador.
✓ Juegue con sus hijos.
✓ ¡Vaya a bailar!

**Coma alimentos saludables**

- Coma más verduras, granos enteros y productos lácteos sin grasa o con poca grasa. Tome leche sin grasa o con poca grasa.
- Coma carnes magras, pollo, pescado, frijoles, huevos y nueces.
- Reduzca las grasas, la sal y el azúcar.
Más información para ayudarle a dejar de fumar

**L.A. Care**
1-888-4LA-Care
o 1-888-452-2273
www.lacare.org

**American Legacy Foundation**
1-202-454-5555
www.americanlegacy.org

**It’s Quitting Time LA!**
www.laquits.com

**Línea de ayuda para fumadores de California**
1-800-NO-BUTTS or
1-800-662-8887
www.californiasmokershelpline.org

**Sociedad americana contra el cáncer**
1-800-ACS-2345 (1-866-228-4327 for TTY)
www.cancer.org

**Asociación americana del corazón**
1-800-AHA-USA-1 o
1-800-242-8721
www.americanheart.org

**Asociación del pulmón de California**
(510) 638-LUNG
1-800-LUNG-USA o
1-800-586-4872
www.californialung.org

**1-800-QUIT-NOW**
1-800-784-8669
www.smokefree.gov