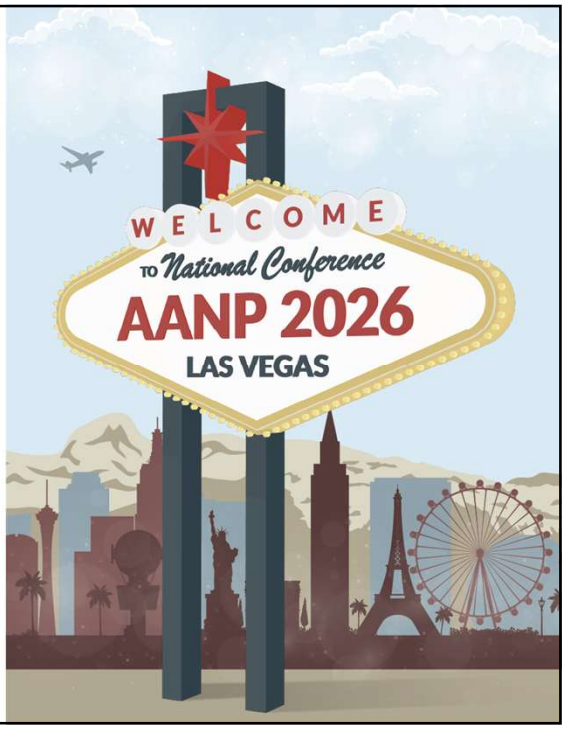
COPD AND GOLD GUIDELINES FOR THE PRIMARY CARE NP

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DISCLOSURES -

- I have nothing to disclose.

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OBJECTIVES

- Review the updates and application of the diagnosis and management of COPD based on the 2026 GOLD guidelines.
- Review pathophysiology, diagnosis, diagnostic testing, and related interpretation of studies as they relate to patients with COPD.
- Apply the 2026 GOLD guidelines pharmacologic changes to case studies.



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GLOBAL INITIATIVE FOR CHRONIC LUNG DISEASE (GOLD) GUIDELINES

- GOLD initiated in 1998
- Goal: produce recommendations for the management of COPD, based on latest guidelines
- First report was issued in 2001

- https://goldcopd.org/2026-gold-report/

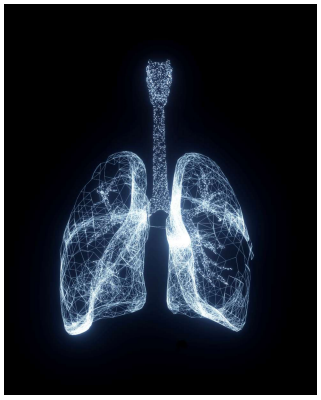
GOLD, 2026



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GOLD 2026 WHAT IS NEW?

- Disease activity versus static
- Refined ABE Assessment
- Biologics and treatment updates
- Emerging technology and COPD
- Revised exacerbation management
- Vaccine updates
- Increased focus on early diagnosis
- Multi-morbidity strategy



Azhar et al., 2026

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DEFINITION

- Chronic Obstructive Pulmonary Disease (COPD) is a ***heterogeneous*** lung condition characterized by chronic respiratory symptoms (dyspnea, cough, sputum production and/or exacerbations) due to abnormalities of the airways (bronchitis, bronchiolitis) and/or alveoli (emphysema) that cause persistent, often progressive, airflow obstruction.

GOLD, 2026

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COPD

- ***COPD is common and preventable***
  - Persistent respiratory symptoms
  - Airflow limitations due to airway/alveolar abnormalities

  - ***Emphysema*** is a radiographic finding
  - ***Chronic Bronchitis*** is mucus hyper secretion

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UPDATE: ACTIVITY VERSUS STATIC

- COPD is a disease with characterized by activity versus static airflow obstruction

- Goal: low activity disease state with a focus on symptom control and minimizing disease progression

- What does disease activity mean?
  - Variable symptoms
  - Ongoing inflammation
  - Exacerbation risk

Azhar, et al., 2026

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PREVALENCE

- COPD is the ***3rd leading cause of death in the United States***
- 90% of deaths occur in low- and middle-income countries
- COPD equates to ***$49.4 billion*** in health care costs annually and is the ***number one*** reason for hospital admissions in the world
- Globally, approximately ***3 million deaths*** annually from COPD
- The number of patients >/= 25 years old will increase by 23% between 2020 and 2050

- ***Seventy percent of patients with COPD remain undiagnosed***

GOLD, 2026

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UPDATE: EARLY DIAGNOSIS

- ***Goal is to slow progression of symptoms and reduce risk***
- ***Identify high risk patients early***
- ***Treat exacerbations early and prevent future exacerbations***

Exacerbations equate to:

- Further debilitation
- Increased cost
- Further decline in lung function
- Increased morbidity and mortality

GOLD, 2026

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DIFFERENTIAL DIAGNOSIS

COPD
- Mid-life
- Slow symptom progression
- Tobacco/exposure history

Asthma
- Early in life
- Variable symptoms
- Other allergic features
- Family history

HF
- PFTs=volume restriction **NOT** limited airflow
- CXR=pulmonary edema
- Bubble echo

TB
- Onset all ages
- CXR=infiltrate
- TB risk exposure
- Microbiological confirmation



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DIFFERENTIAL DIAGNOSIS

Diffuse Pan bronchiolitis
- Asian descent
- Males, non-smokers
- Chronic sinusitis
- CXR/HRCT=diffuse opacities & hyperinflation

Bronchiectasis
- Older age
- Copious amounts of sputum
- Recurrent pseudomonas
- CXR/CT=bronchial dilation and wall thickening

Asthma COPD Overlap
- Mid-life
- Consider when concurrent symptoms and exacerbations

Obliterative Bronchiolitis
- Younger age, non-smoker
- Rheumatoid arthritis
- Post transplant
- CT=exp. hypodensity



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DIFFERENTIAL DIAGNOSIS

The following may be helpful in ruling out alternative diagnosis:

- Full spirometry (VCD, COPD, restrictive process)
- Bronchoprovocation with methacholine, histamine, cold air or exercise
  - ✓Especially useful if spirometry is normal or near normal
- Chest radiography
- Allergy testing
- Biomarkers ***
- GI symptoms
- Sleep disorders

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COPD SIGNS AND SYMPTOMS

- Dyspnea-cardinal symptom
- Cough-often 1st symptom to develop
- Sputum production
- Chest tightness and wheezing

LET'S INTERVENE <u>BEFORE</u> WE GET HERE

- Severe disease-weight loss, fatigue, anorexia, cough syncope rib fractures, ankle swelling

GOLD, 2026

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UPDATE: EARLY DIAGNOSIS

- **Consider a clinical diagnosis and spirometry in any patient aged 40 or older with:**
  - Dyspnea that is progressive
  - Chronic cough intermittent/may be non-productive
  - Chronic sputum production
  - Recurrent lower respiratory infections
  - History risk factor exposure (tobacco smoke, occupational, fumes or air)
  - Family history of COPD

GOLD, 2026

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UPDATE: EARLY DIAGNOSIS

- **Spirometry is the gold standard and is required to make the diagnosis**
  - Post-bronchodilator FEV1/FVC <0.70 confirms the presence of COPD
  - FEV1 measurement pre and post bronchodilator is no longer recommended to make the diagnosis
  - Assessment of severity
  - Follow up assessment to guide treatment
  - SPIROMIC cohort recent analysis shows that the presence of reversible obstruction is associated with an increased incidence of COPD over time
- **Smoking status-assess as a vital sign every time-owe it to our patients to find their disease early**
- **Clinical symptoms and disease progression**

Azhar et al., 2026; GOLD, 2026

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SPIROMETRY

- **Pre-bronchodilator spirometry**
  - If doesn't show obstruction, then post-bronchodilator spirometry is not necessary unless there is a very high clinical suspicion of COPD
- **Fixed FEV1/FVC ratio less than 0.7 may lead to overdiagnosis of COPD in elderly patients and underdiagnosis in 1% of young adults**
  - In this case, compare FEV1/FVC ratio with the LLN

Strong & Strenger, 2024



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COPD ASSESSMENT

- Smoking history ****smoking cessation**
- Family history
- Exposure history
- PMH (co-morbidities)
- Pattern of symptom development
- Impact on quality of life
- Social/family support

GOLD, 2026



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TABLE 1: REVIEW OF GOLD GRADE/SEVERITY

Grade	Severity	FEV1-post bronchodilator
GOLD 1	Mild	>/= 80% predicted
GOLD 2	Moderate	50-79% predicted
GOLD 3	Severe	30-49% predicted
GOLD 4	Very Severe	<30% predicted

Note: Adapted from "Global Initiative for Obstructive Lung Disease (GOLD): Chronic Obstructive Pulmonary Disease Global Strategy for the Diagnosis, Management, and Prevention of Chronic Obstructive Pulmonary Disease". (2026).

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UPDATE: MULTIDIMENSIONAL ASSESSMENT

- Extent of airflow obstruction (Grade/Severity)
- Symptom burden and impact on daily life
- Exacerbation history
- Blood eosinophil count (BEC)
- Co-morbidities

Cazzola et al., 2026; GOLD, 2026

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TOOLS FOR ASSESSMENT

- COPD Assessment Test (CAT) 8 items
  Retrieved from: http://www.catestonline.org

- COPD Control Questionnaire (CCQ) 10 items
  Retrieved from: http://www.ccq.nl



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UPDATE GOLD: ABE ASSESSMENT

- GOLD ABE Assessment
  - Recognizes clinical relevance of exacerbation, independent of level of symptoms
  - Symptoms
    - ✓A or B is unchanged A=CAT <10 OR B=CAT ≥10
    - ✓C and D go away
  - Exacerbation "E" reflects exacerbation prone patients
    - ✓1 exacerbation per year

GOLD, 2026



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UPDATE GOLD: ABE ASSESSMENT

- **Group A**
  - Less symptomatic (CAT score <10), low risk future exacerbations
  - Zero exacerbations in the past year
- **Group B**
  - More symptomatic (CAT score ≥10), low risk future exacerbations
  - Zero exacerbations in the past year
- **Group E**
  - High risk future exacerbations
  - 1 exacerbations per year (outpatient or hospitalization)

GOLD, 2026

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TABLE 2: ABE ASSESSMENT

Step 1	Step 2	Step 3
Spirometry confirmed diagnosis	Assess airflow obstruction	Assess symptoms risk of exacerbations
Post-bronchodilator FVC/FEV1 ratio	Grade FEV1	Exacerbation history CAT score

Note: Adapted from "Global Initiative for Obstructive Lung Disease (GOLD): Chronic Obstructive Pulmonary Disease Global Strategy for the Diagnosis, Management, and Prevention of Chronic Obstructive Pulmonary Disease". (2026).

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PHARMACOLOGIC TREATMENT

- **Bronchodilators**-alter smooth muscle tone in airway
- **Beta2-agonists**-relax smooth muscle by stimulating the beta2-adrenergic receptors>functional antagonist to bronchoconstriction
- **Antimuscarinics**-blockage of acetylcholine's effect on the MU receptors (M2 and M3-short acting) (M1 long acting)
- **Methylxanthines**-unclear non-selective phosphodiesterase inhibitors versus non-bronchodilator actions



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PHARMACOLOGIC TREATMENT

- **Narcotics**-Effective in treating dyspnea with GOLD Stage 4
- **Alpha-1 Antitrypsin Augmentation Therapy-may** slow progression of emphysema
- **Antitussives**-Not recommended in stable COPD
- **Vasodilators**-Do not improve outcomes, may worsen oxygenation
- **Inhaled Corticosteroids**-No longer recommended in less part of triple therapy



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PHARMACOLOGIC TREATMENT

- **Phosphodiestrase-4 inhibitors (PDE4)**
  - Add on therapy
  - GI and depression important clinical symptoms
  - Chronic bronchitis, GOLD Stage 3 or 4 with history of exacerbations
- **Antibiotics**
  - Long-term reduces exacerbations over a year
  - Q-T changes, hearing changes
  - Azithromycin 250mg or 500 mg three/times week OR erythromycin 250 mg BID x 1 year



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PHARMACOLOGIC MANAGEMENT

- **In symptomatic patients (regardless of Grade), LAMA/LABA recommended over monotherapy**
- **Increased recommendations/use for Triple Therapy**
  - Large trials IMPACT and ETHOS reduced all-cause mortality (triple versus dual), particularly those in the Group E
  - Large retrospective analysis (Clinical Practice Research Datalink) provides support for the recommendation
- **ICS/LABA dropped off the recommendations**
  - TORCH and SUMMIT failed to provide efficiency in reducing mortality (primary outcome) of COPD compared to placebo
  - Most used inhaler for COPD
  - Convert to LABA/LAMA as recommended

GOLD, 2026; Rabe, 2020; Lipson, 2018; Vestbo, 2016; Calverley, 2007



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DELIVERY METHOD

Method of administration is key to success!!

- Systematic Review of meter dosed inhaler (MDI) use concluded technique has not improved over the past 40 years

- Dry Powder Inhaler (DPI)
- Soft Mist Inhaler (SMI)
- Breath-actuated (BAIs)



GOLD, 2026; Sanchis, J. et al., 2016

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DELIVERY METHOD

- **Inhaled therapy cornerstone of pharmacologic treatment**
  - Education and training on device can't be over emphasized
  - Individual tailer choice of device based on cost, access, and patient ability and preference
  - Assess at each visit to ensure correct usage of devices
  - Consider technique and adherence to device if not responding to treatment or increased exacerbations

GOLD, 2026

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UPDATE: EOSINOPHILS AND COPD

COPD is an inflammatory disease

- Some patients exhibit raised airway eosinophilic inflammation
  - Increased exacerbations
  - Often challenging to stabilize
  - Response quickly to oral corticosteroids
- Strong correlation between peripheral BEC (absolute) and sputum eosinophils
- Recommend obtaining 2-3 BEC during stable COPD (eosinophilic profile)
- Multiple phase III trials IMPACT, ETHOS, TRINITY, and TRIBUTE collectively demonstrate positive impact on select patient populations

Cazzola et al., 2026; Harries et al., 2020



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INHALED CORTICOSTEROID (ICS) THERAPY

- **Add ICS**
  - History of or concomitant asthma (ACO)
  - >/= 2 moderate COPD exacerbations per year **OR** hospitalization
  - Blood eosinophils >300 cells/uL
- **Consider ICS**
  - 1 moderate COPD exacerbation per year
  - Blood eosinophils 100-300 cells/u/L
- **Don't start ICS**
  - Recurrent pneumonia
  - Blood eosinophils <100 cells/u/L
  - History of mycobacterial infection

GOLD, 2026; Harries et al., 2020

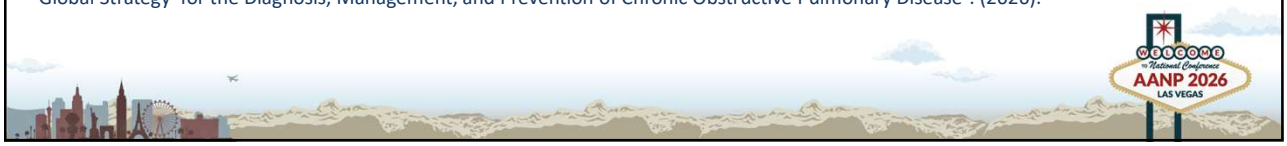


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TABLE 3: STABLE COPD GROUP A

Group	Symptoms	Number of Exacerbations	First Line	Alternative
A-less symptoms low risk	CAT <10	0 moderate/severe exacerbations in the past year	SABA **If using SABA > than 2-3 weeks then LABA OR LAMA	ipratropium

Note: Adapted from "Global Initiative for Obstructive Lung Disease (GOLD): Chronic Obstructive Pulmonary Disease Global Strategy for the Diagnosis, Management, and Prevention of Chronic Obstructive Pulmonary Disease". (2026).

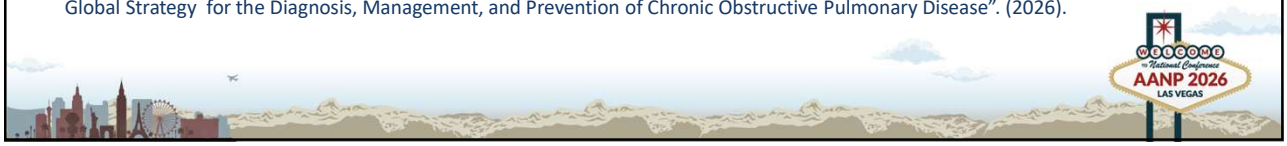


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TABLE 3: STABLE COPD GROUP B

Group	Symptoms	Number of Exacerbations	First Line	Alternative
B-more symptoms low risk	CAT ≥10	0 moderate/severe exacerbations in the past year	LABA/LAMA If ACO, then LABA/LAMA/ICS	LABA or LAMA therapy alone if can't take due to cost or adverse effects

Note: Adapted from "Global Initiative for Obstructive Lung Disease (GOLD): Chronic Obstructive Pulmonary Disease Global Strategy for the Diagnosis, Management, and Prevention of Chronic Obstructive Pulmonary Disease". (2026).



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TABLE 3: STABLE COPD GROUP E

Group	Symptoms	Number of Exacerbations	First Line	Alternative
E-high risk for exacerbations	CAT >10	1 or more moderate or severe exacerbations	LABA/LAMA If eosinophils >100 LABA/LAMA/ICS **avoid LABA/ICS unless asthma features	LABA or LAMA therapy alone if can't take due to cost or adverse effects

Note: Adapted from "Global Initiative for Obstructive Lung Disease (GOLD): Chronic Obstructive Pulmonary Disease Global Strategy for the Diagnosis, Management, and Prevention of Chronic Obstructive Pulmonary Disease". (2026).

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UPDATE: BIOLOGICS

- Level A evidence in patients with type 2 inflammation
  - Eosinophilic phenotype
  - Chronic bronchitis
- Mepolizumab added to GOLD 2026
  - Eosinophilic phenotype
  - With or without chronic bronchitis
  - Noted to decrease exacerbations
- BOREAS and NORUS studies
  - Clear clinical effects of dupilumab select subgroup
  - COPD patients with > 300/ml who despite triple therapy suffer exacerbations and have symptoms of bronchitis
  - Those with dupilumab therapy had decreased exacerbations, increased lung function, increased quality of life, and decreased respiratory symptoms
- The biologic is an add on therapy for patients on triple therapy (LABA/LAMA/ICS)

GOLD, 2026; Bhatt, S. B. et al., 2023

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ACUTE EXACERBATION COPD (AECOPD)

- Acute event-worsening symptoms (dyspnea, sputum, cough) and leads to a change in meds/treatment
- Most common cause viral respiratory tract infection
- Cause for 1/3 of severe exacerbations not identifiable
- Reduce risk-smoking cessation, vaccine, patient self-treatment plan, and compliance

GOLD, 2026



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UPDATE: ACUTE EXACERBATION COPD (AECOPD)

- **Steroids + antibiotics**
  - improve lung function
  - decrease recovery time
  - improve hypoxemia
  - reduce risk of relapse, treatment failure, or prolonged hospitalization
- Consider azithromycin **OR** roflumilast (Daliresp) PDE4 for prevention
- Considered moderate AECOPD if requires steroids and severe if requires hospitalization
- One AECOPD increases risk of recurrent AECOPD and increases all- cause mortality

Cazzola et al., 2026; GOLD, 2026



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GOALS OF TREATMENT

- ***Reduce Symptoms***
  - Relieve symptoms
  - Improve exercise tolerance
  - Improve health status
- ***Reduce Risk***
  - Prevent disease progression
  - Prevent and treat exacerbations
  - Reduce mortality



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UPDATE: NON-PHARMACOLOGIC TREATMENT

- Structured exercise plan
- Self-care
- Exacerbation plan
- Relaxation techniques
- Oxygen and non-invasive ventilator (NIV)-chronic hypercapnia
- Pulmonary Rehab-in-person or virtual
  - Indications: exertional dyspnea, deconditioning or recent AECOPD

GOLD, 2026

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CASE STUDY #1

- 63-year-old patient with COPD has progressive dyspnea and cough despite addition of ICS/LABA.
  - ***What else do you want to know?***
  - ***What patient group?***
  - ***What are your next steps?***



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CASE STUDY #2

- 66-year-old patient with worsening shortness of breath who follows up with multiple providers.
  - Diagnosed with asthma, chronic bronchitis and allergies
  - 40-year pack smoking history and quit about six months ago
  - PFTs show an FEV1/FVC of 45% with a positive bronchodilator response
  - Labs show increased Immunoglobulin E levels



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CHEST CT

Differential Diagnosis	• **Persistent exacerbations** • **Symptoms out of proportion to disease severity on lung function testing**
Lung Volume Reduction	• **Endobronchial valve therapy may be option if post-bronchodilator FEV1 between 15%-45% predicted and evidence of hyperinflation**
Lung Cancer Screening	• **Annual low-dose CT recommended for lung cancer screening in patients with COPD due to smoking according to recommendations for the general population**

GOLD, 2026



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UPDATE: CARDIOVASCULAR DISEASE IN COPD PATIENTS

- After an AECOPD, 20 times greater risk CV event or all-cause death within 7 days
- In stable COPD, assess for CV risk including coronary artery disease, pulmonary artery hypertension, arrythmia, and heart failure
- Increased risk can occur for up 1 year after an AECOPD

Strong & Strenger, 2024



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UPDATE: PULMONARY ARTERY HYPERTENSION

- Follow 2022 European Society of Cardiology/European Respiratory Society Guidelines for patients with pulmonary hypertension-COPD
- For non-severe pulmonary hypertension/COPD PAH medications are not recommended
- For severe pulmonary hypertension-COPD, individualized treatment plan is recommended

Strong & Strenger, 2024



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UDPATE: VACCINATIONS FOR STABLE COPD

- Influenza vaccine
- SARS-Cov-2 (COVID-19) vaccine
- One dose of 20-valent pneumococcal conjugated vaccine (PCV20) **OR**
- One dose of 15-valent conjugated pneumococcal vaccine (PCV15) followed by 23-valent pneumococcal vaccine (PPSV23)
- Pneumococcal vaccination
- Tdap if not vaccinated as adolescent
- Zoster vaccine for patients over the age of 50
- **RSV for patients the age >/= 60 and high risk**

GOLD, 2026



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LONG TERM OXYGEN THERAPY –STABLE COPD

- PaO2 at or below 55 mmHg or SaO2 at or below 88%, with or without hypercapnia confirmed twice over a three-week period

OR

- PaO2 between 55 mmHg and 60 mmHg, or SaO2 of 88%, if there is evidence of pulmonary hypertension, peripheral edema suggesting congestive cardiac failure, or polycythemia (hematocrit > 55%)

- Reassess in 60 to 90 days

GOLD, 2026

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COPD AND OBSTRUCTIVE SLEEP APNEA (OSA)

- The apneic events in patients with combined OSA and COPD have more profound hypoxemia and more cardiac arrhythmias

- Combined COPD and OSA are more likely to:
  - develop daytime pulmonary hypertension
  - continuous positive automatic pressure (CPAP) noted to decrease hospital and emergency room visits and decrease exacerbations

GOLD, 2026

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INTERVENTIONAL AND SURGICAL OPTIONS

Bronchoscopic Lung Volume Reduction (BLVR) with a one-way endobronchial valve (EBV)

- One-way valves most studied treatment option for advanced emphysema
- Improvements noted in FEV1, and 6-minute walk test
- Candidate selection
  - Look for intact fissures or absence of collateral ventilation
  - Post-dilator FEV1/FVC <70% FEV1 15%-50% RV ≥175% of predicted and RV/total lung capacity ≥55%
  - 1 mm cuts HRCT to evaluate
  - Non-smoker, completed pulmonary rehab
  - Nutrition, oxygen and NPPV evaluated and optimized

GOLD, 2026; Klooster, 2021



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UPDATE: SMOKING CESSATION

Ask	• **Identify all tobacco users at every visit**
Advise	• **Strongly urge all tobacco users to quit**
Assess	• **Determine willingness and rationale of desire to make a quit attempt**
Assist	• **Aid the patients in quitting** • **Develop quit plan** • **Provide counseling** • **Provide extra treatment social support** • **Recommend approved pharmacologic treatments** • **Provide supplementary materials**
Arrange	• **Schedule follow up contact**

GOLD, 2026



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PHARMACOTHERAPIES FOR TOBACCO DEPENDENCE

- **First line pharmacotherapies for tobacco dependence should be prescribed in absence of contraindication**
  - varenicline
  - nortriptyline
  - bupropion sustained release
  - nicotine gum, spray, inhaler or patch
- Consider financial incentive programs
- E-cigarettes not recommended as a bridge

GOLD, 2026

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CASE STUDY 3

- 57-year-old patient with COPD (FEV1 30% of predicted RV 239% predicted)
- Previous smoker
- Just completed pulmonary rehab
- CAT Score 15
- Severe dyspnea, limited exercise capacity despite LABA/LAMA/ICS

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COPD MANAGEMENT

- ***Review***
  - Symptoms, dyspnea, exacerbations, smoking
- ***Assess***
  - Inhaler technique and adherence
  - Non-pharmacologic
- ***Adjust***
  - Escalate or de-escalate
  - Switch device or medication

GOLD, 2026



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WHEN TO REFER

- **Not** responding to therapy
- GOLD Stage 3 or 4 COPD
- Complex mixed disease (COPD/Asthma)
- Pulmonary hypertension
- **Unable** to confirm diagnosis



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WELCOME TO National Conference
AANP 2026
LAS VEGAS



ANY QUESTIONS?

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IMAGE REFERENCES

Slide	Image designation/description/position	Attribution
2	Dr. Rodgers with mask/in clinical	Personal photo
5	Lungs	Powerpoint stock photo
29	Provider/patient hands	Powerpoint stock photo
39	Stethoscope in pocket	Powerpoint stock photo
56	Dr. Rodgers as a child with grandpa	Personal photo

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