

COPD 2024 GOLD Guideline Update AAPA 2024 – Houston, Texas

Brian Bizik, MS, PA-C
**Immediate Past-President – American Academy of
Physician Assistants in Allergy, Asthma and Immunology**
Pulmonology Care Coordinator, Terry Reilly Health Centers
208-404-5338
brianbizik@yahoo.com

Disclosures

INDUSTRY AFFILIATIONS

Grifols Pharmaceutical - speaker, consultant

AstraZeneca – advisory board

Regeneron – advisory board

CLINICAL RESEARCH

2017 – Sub-I, Genetech Zenyatta Severe Asthma Study

2016 – Sub-I, Biota Human Rhinovirus Study

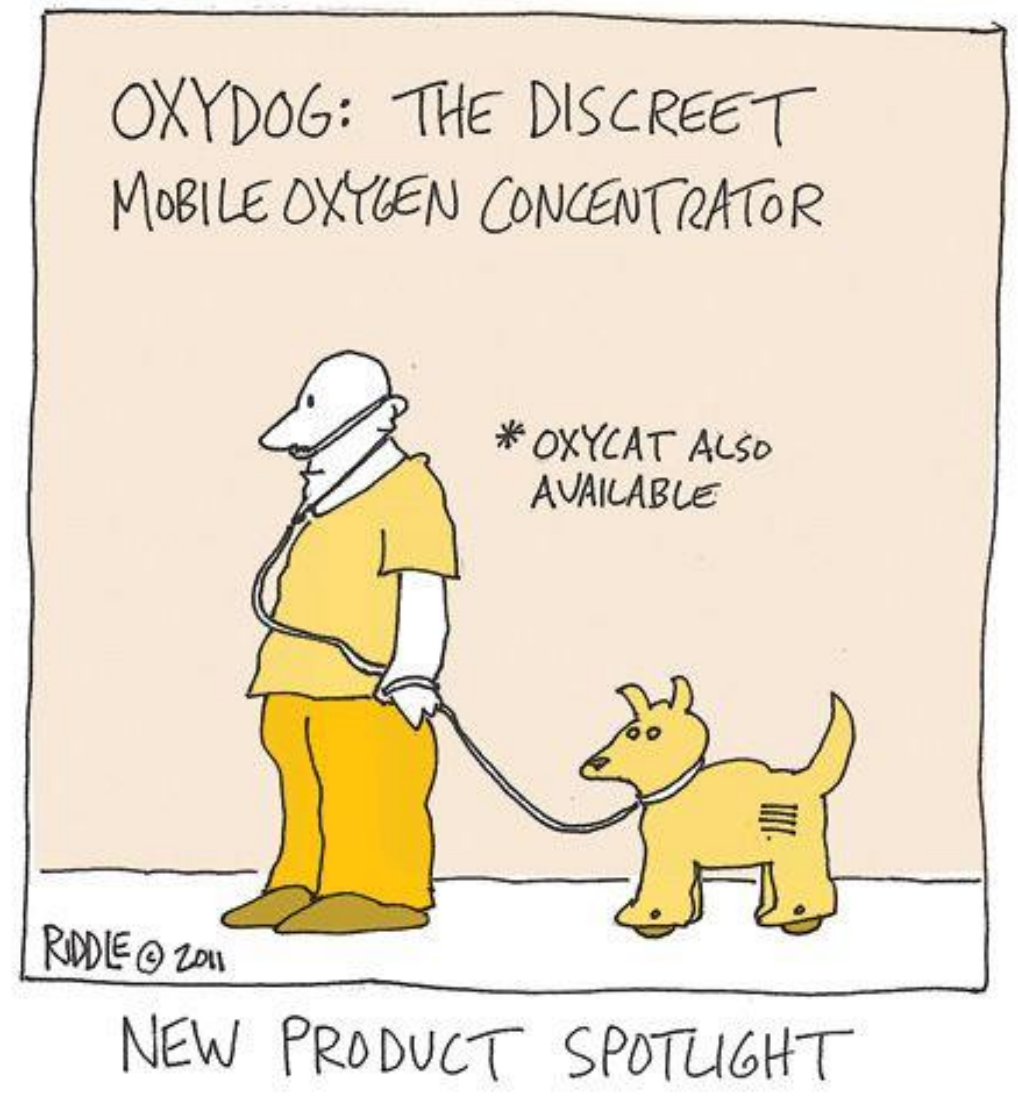
2015 – Sub-I, Sanofi Traverse Severe Asthma Study

2015 – Sub-I, Sanofi Liberty Severe Asthma Study

2013 – Study Coordinator: MediVector Influenza Study

Brian Bizik does not intend to discuss the use of any off-label use/unapproved use of drugs or devices with the exception of NON-APPROVED inhaler recommendations that are Guideline based but not yet FDA approved (asthma only).

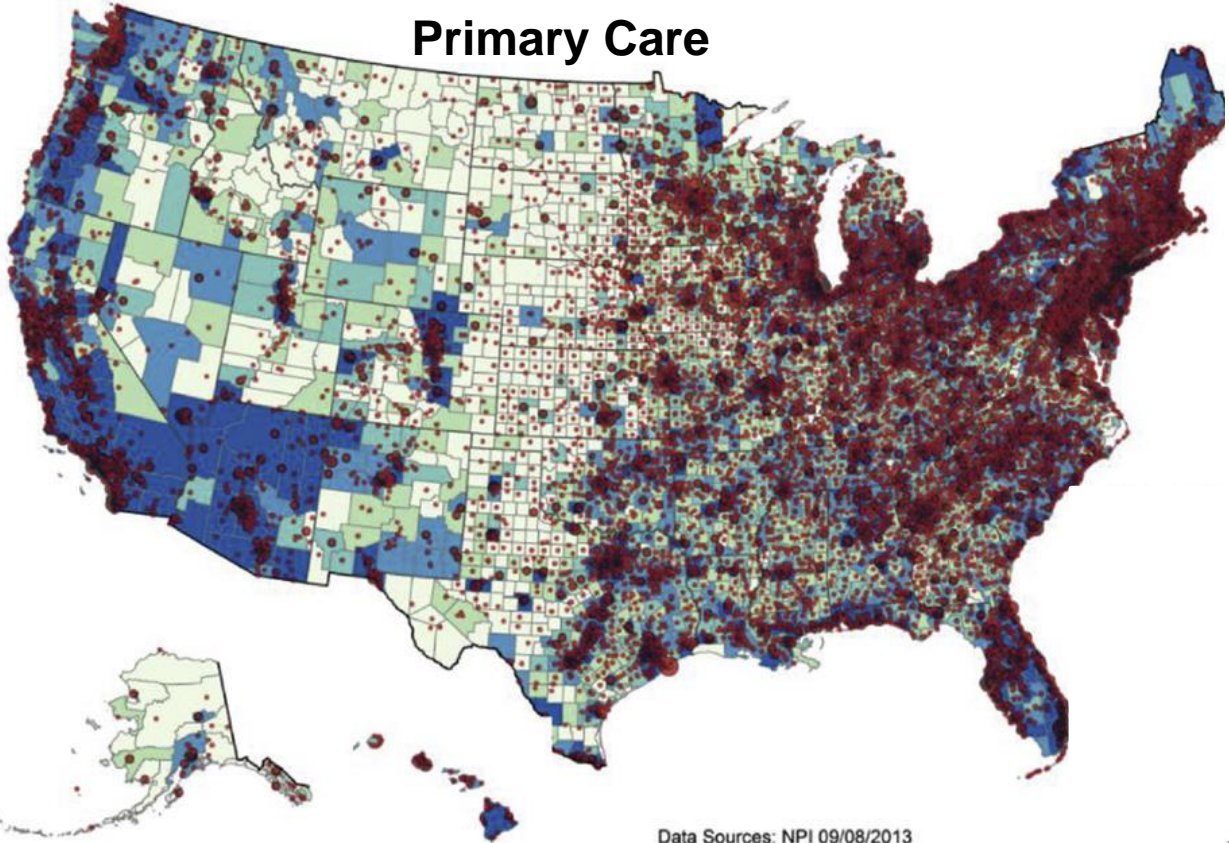
- **Review medication classes for COPD and new inhalers**
- **Talk over the guidelines, focus on the changes that you must know**
- **Some tips for personalized respiratory care/exacerbations and smoking cessation**



Plan For Today

Acc Nearly all PAs/NPs must treat COPD

Primary Care



Data Sources: NPI 09/08/2013
Census 2010, BRFSS 2013

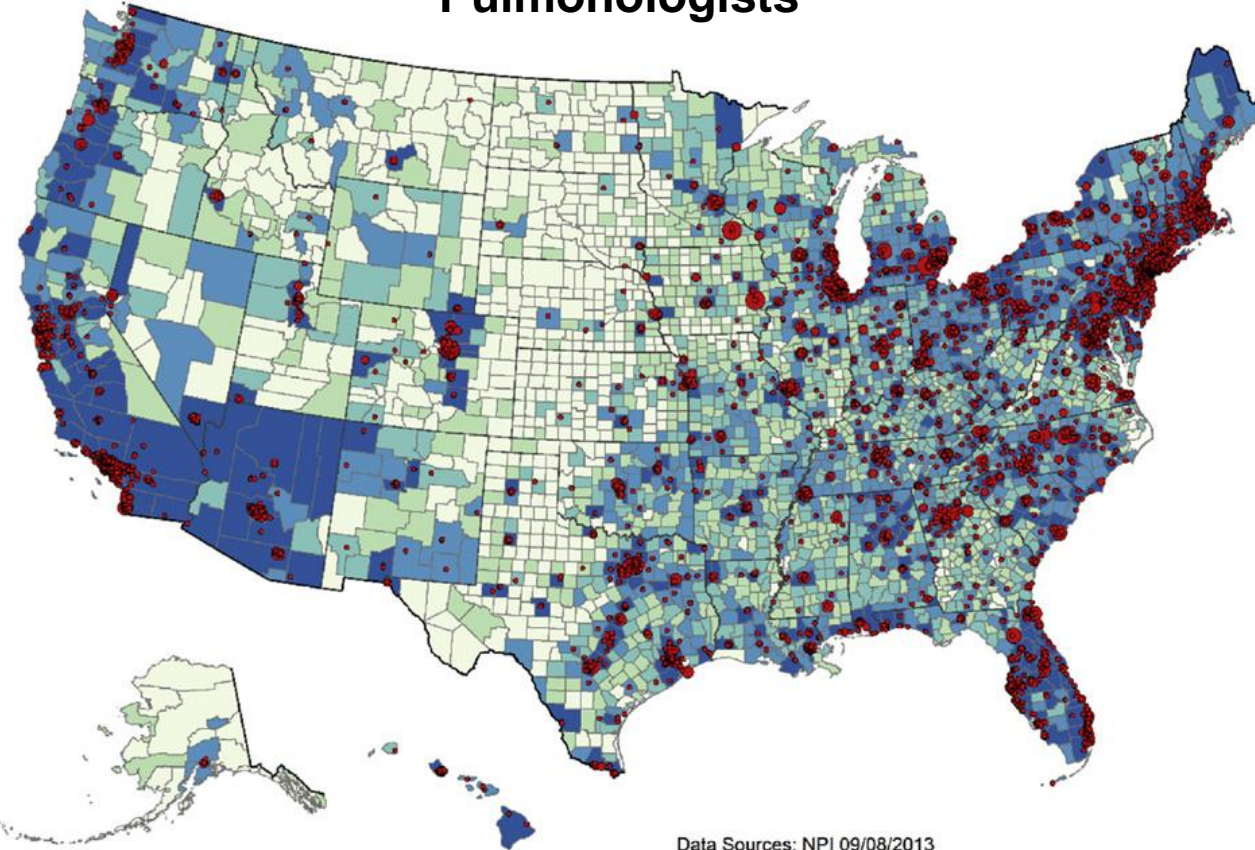
Primary care physicians (Locations)

- 1 - 7 (83,571)
- 8 - 31 (4,341)
- 32 - 93 (520)
- 94 - 228 (93)
- 229 - 588 (22)

County estimates of adults with COPD

- 5 - 674
- 675 - 1,487
- 1,488 - 2,833
- 2,834 - 6,478
- >6,478

Pulmonologists



Data Sources: NPI 09/08/2013
Census 2010, BRFSS 2013

Pulmonologists (locations)

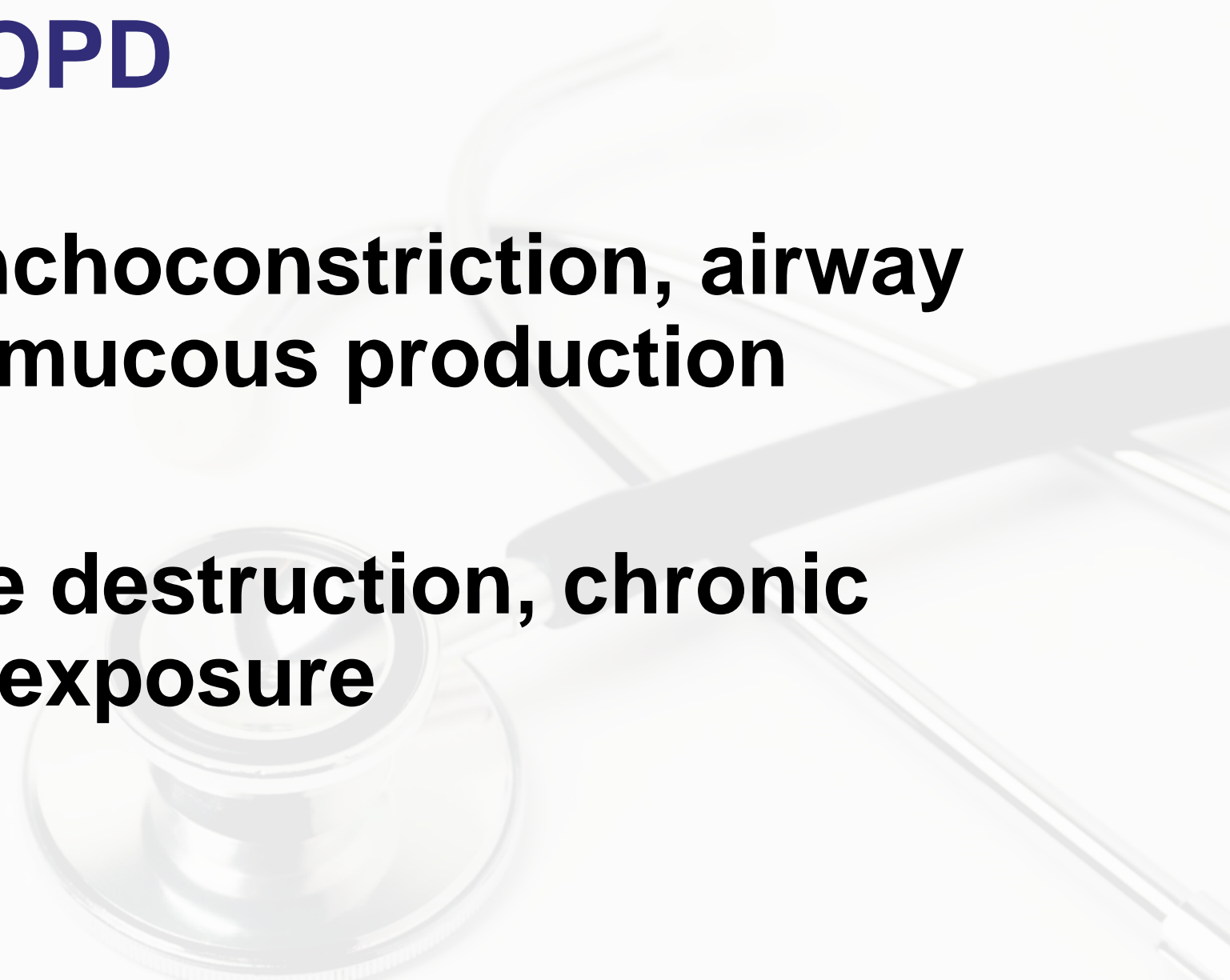
- 1 - 3 (4,223)
- 4 - 8 (674)
- 9 - 17 (163)
- 18 - 35 (38)
- 36 - 82 (7)

County estimates of adults with COPD

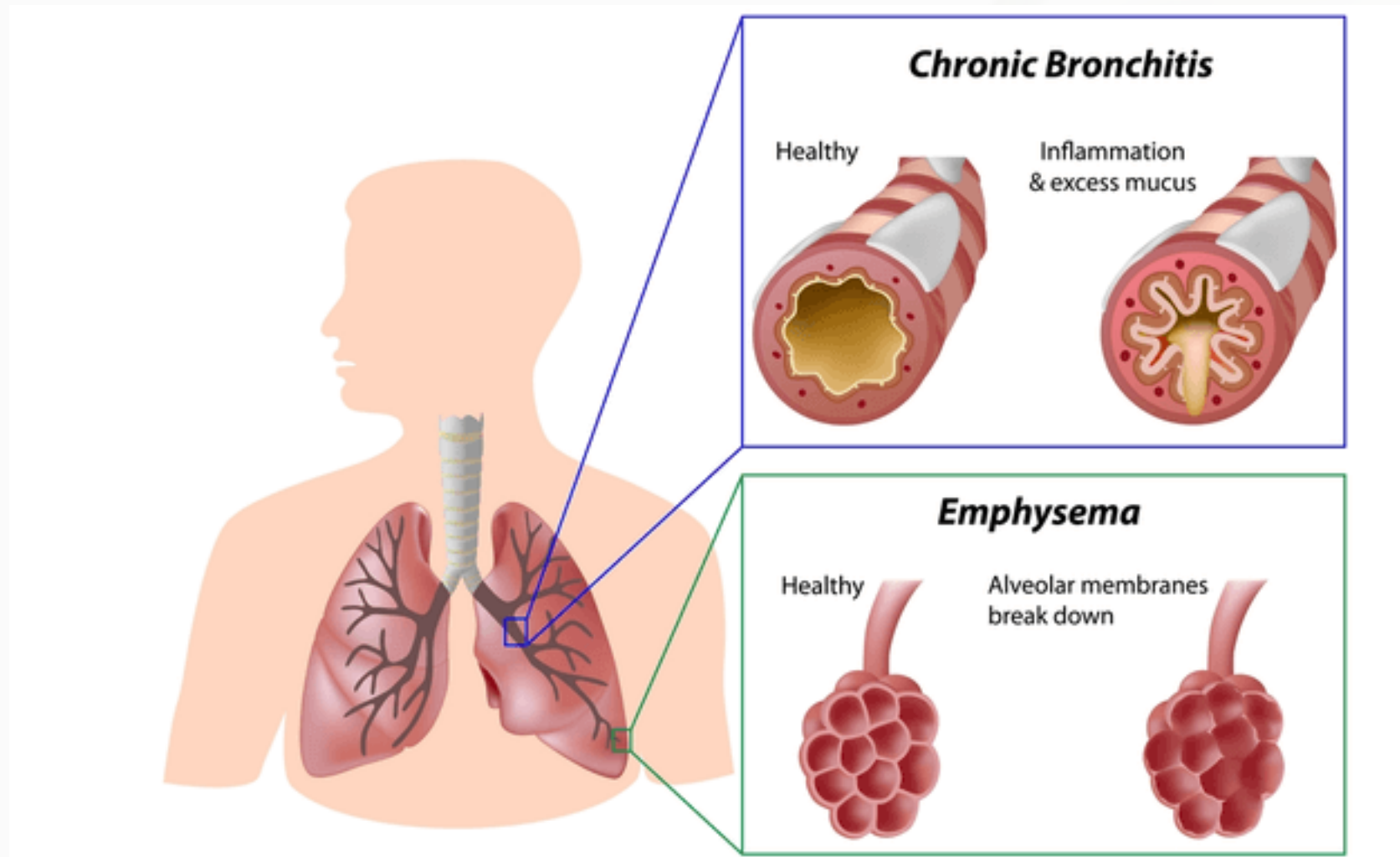
- 5 - 674
- 675 - 1,487
- 1,488 - 2,833
- 2,834 - 6,478
- >6,478

Croft JB, et al. *Chest*. 2016;150(3):544-53.

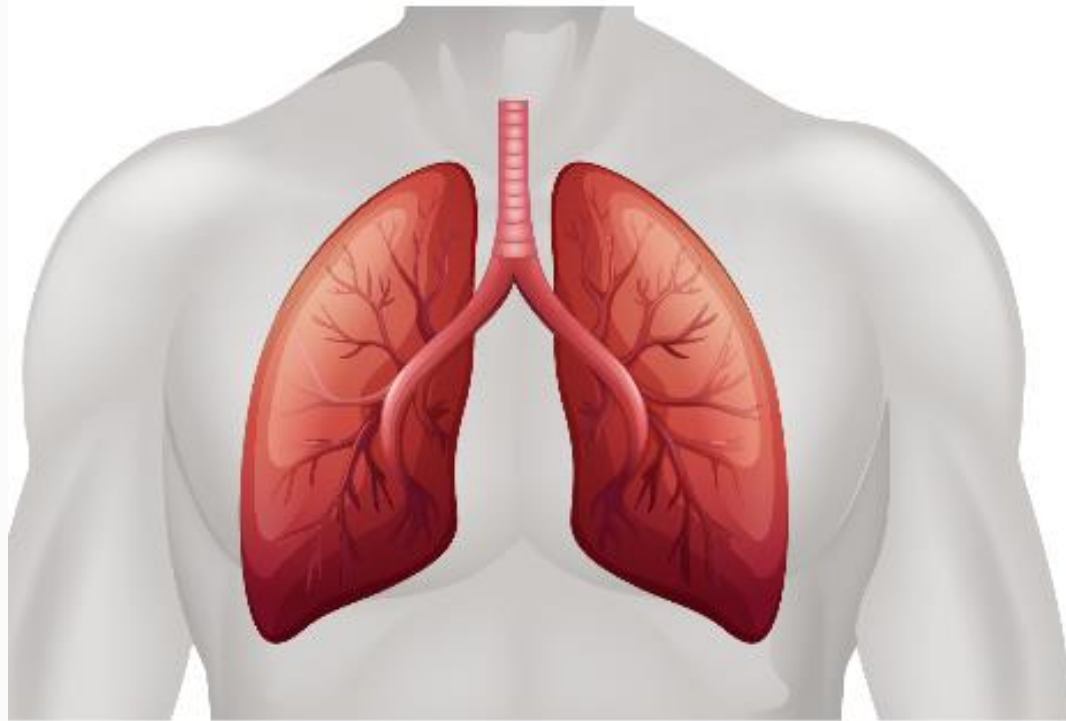
Asthma and COPD

- **Asthma – bronchoconstriction, airway inflammation, mucous production**
 - **COPD – Tissue destruction, chronic cough, due to exposure**
- 

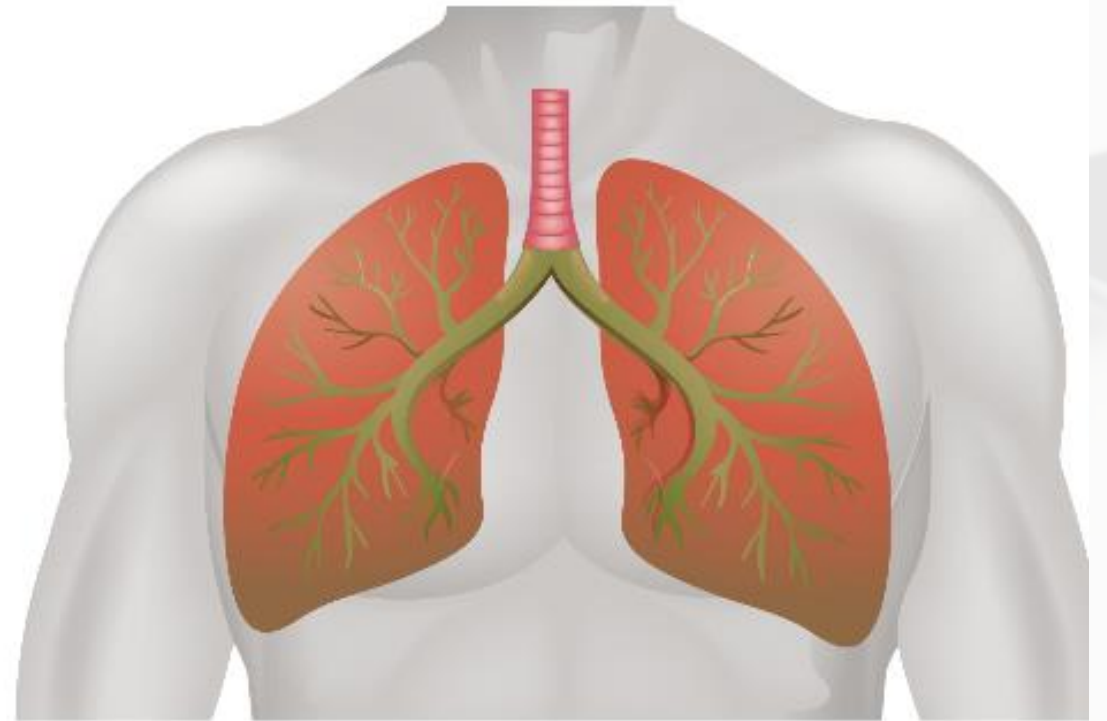
COPD – Chronic (long term, you get this over time), Obstructive (elasticity is gone, things get floppy and weak, alveoli break down)



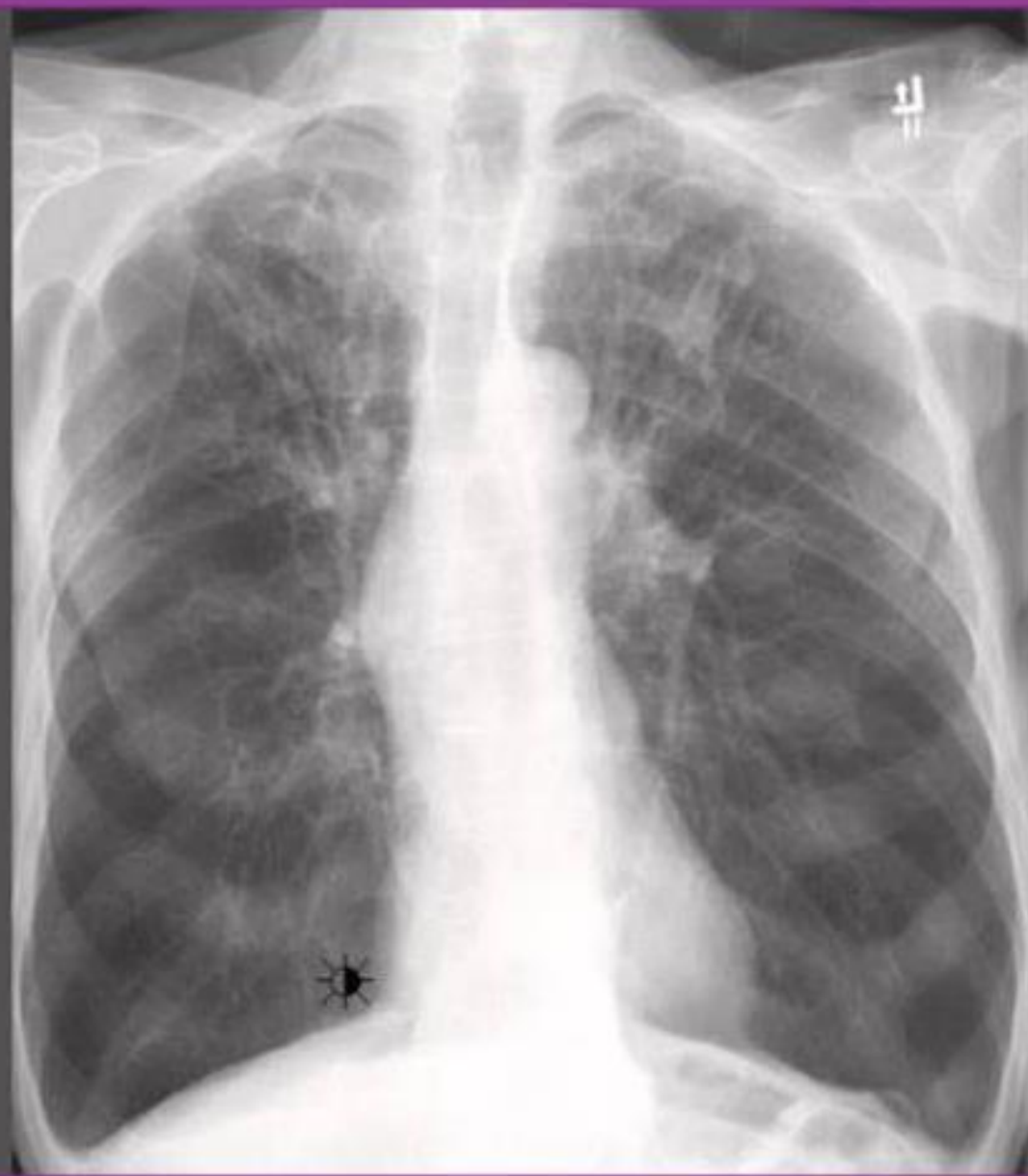
COPD – Big, floppy lungs. Flattened diaphragm. Harder to inhale but MUCH harder to exhale, air is trapped, stale.



Normal Lungs



Hyperinflated Lungs



Respiratory medications:

We have three categories of medications

Albuterol

Short – SABA

Long – LABA

Bronchodilators



Medication Categories

Albuterol – short acting bronchodilator, relaxes smooth muscle. Binds to beta receptors on smooth muscle, causing about a billion things to happen that drop the calcium in the cell and it relaxes.

Salmeterol/formoterol/vilanterol – Same thing as above but lasts 12 or 24 hours

Code for English Inhalers



Code for Spanish Inhalers



SHORT-ACTING BETA₂-AGONIST BRONCHODILATORS

relax tight muscles in airways and offer quick relief of symptoms such as coughing, wheezing and shortness of breath for 3-6 hours

Albuterol Sulfate Inhalation Solution 0.63, 1.5, 2.5 mg; 3 mL [G] [N]	ProAir[®] Digihaler[™] 90 mcg albuterol sulfate inhalant powder [N] [A]	ProAir[®] RespiClick[®] 90 mcg albuterol sulfate inhalant powder [N] [A]	Proventil[®] HFA 90 mcg albuterol sulfate [N] [A] [G]	Ventolin[®] HFA 90 mcg albuterol sulfate [N] [A] [G]	Xopenex[®] 0.31, 0.63, 1.25 mg; 3 mL levosalbutamol hydrochloride inhalant solution [A] [G] [N]	Xopenex HFA[®] 45 mcg levosalbutamol tartrate [A] [G]
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LONG-ACTING BETA₂-AGONIST BRONCHODILATORS

relax tight muscles in airways and offer lasting relief of symptoms such as coughing, wheezing and shortness of breath for at least 12 hours

Brovana[®] 15 mg; 2 mL formoterol tartrate inhalant solution [C] [N]	Perforomist[®] 20 mcg; 2 mL formoterol fumarate inhalant solution [C] [N]	Severent[®] Diskus[®] 50 mcg astemizole/zafirlucast inhalant powder [N] [A] [G]	Striverdi[®] RespiMat[™] 2.5 mcg olodaterol hydrochloride [N] [A] [G]
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INHALED CORTICOSTEROIDS

reduce and prevent swelling of airway tissue; they do not relieve sudden symptoms of coughing, wheezing or shortness of breath

Abresco[®] HFA 80, 160 mcg ciclesonide [N] [A]	ArmonAir[®] Digihaler[™] 55, 113, 232 mcg fluticasone propionate inhalant powder [N] [A]	Arnuity[®] EUlпта[™] 50, 100, 200 mcg mometasone furoate inhalant powder [N] [A]	Asmanex[®] HFA 50, 100, 200 mcg mometasone furoate [N] [A]	Asmanex[®] Twisthaler[™] 110, 220 mcg mometasone furoate inhalant powder [N] [A]	Fluticasone Propionate Diskus Inhalation Powder 50, 100, 250 mcg Approved generic of Flonid Diskus [N] [A]	Fluticasone Propionate HFA 44, 110, 220 mcg Approved generic of Flonid HFA [N] [A]	Pulmicort Flexhaler[®] 90, 180 mcg budesonide inhalant powder [N] [A]	Pulmicort Respules[®] 0.25, 0.50, 1.0 mg; 2 mL budesonide inhalant suspension [A] [G] [N]	QVAR[®] RediHaler[™] 40, 80 mcg beclomethasone dipropionate [N] [A]
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MUSCARINIC ANTAGONISTS (ANTICHOLINERGIC)

relieve cough, sputum production, wheeze and chest tightness associated with chronic lung diseases

SHORT-ACTING Atrovent[®] HFA 17 mcg ipratropium bromide [N] [A] [G]	LONG-ACTING Incruse[®] EUlпта[™] 62.5 mcg umedidinium inhalant powder [N] [A] [G]	Ipratropium Bromide Inhalation Solution 0.5, 2.5 mg; 2.5 mL [C] [G] [N]	Spiriva[®] HandiHaler[™] 18 mcg tiotropium bromide inhalant powder [G]	Spiriva[®] RespiMat[™] 1.25, 2.5 mcg tiotropium bromide [N] [A] [C]	Tedorza[™] Pressair[™] 400 mcg aclidinium bromide inhalant powder [N] [A] [G]	Yupetri[®] 17.5 mcg; 3 mL ravelizumab inhalant solution [C] [N]
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PDE4 INHIBITORS

target lung inflammation and reduce exacerbations

Dakresp[®] 250, 500 mcg roflumilast [C]

COMBINATION MEDICATIONS

contain both inhaled corticosteroid and long-acting beta₂-agonist (LABA)

Advair Diskus[®] 100/50, 250/50, 500/50 mcg fluticasone propionate and salmeterol inhalant powder [N] [A] [G]	Advair[®] HFA 45/21, 113/21, 230/21 mcg fluticasone propionate and salmeterol xinafoate [N] [A] [G]	AirDuo[®] Digihaler[™] 55/14, 113/14, 232/14 mcg fluticasone propionate and salmeterol inhalant powder [N] [A]	AirDuo[®] RespiClick[®] 55/14, 113/14, 232/14 mcg fluticasone propionate and salmeterol inhalant powder [N] [A] [G]	Breo[®] EUlпта[™] 50/25, 100/25, 200/25 mcg fluticasone furoate and vilanterol inhalant powder [N] [A] [G]	Breyna[®] 80/4.5, 160/4.5 mcg budesonide and formoterol fumarate dihydrate (approved generic of Symbicort) [N] [A] [G]	Dulera[®] 50/5, 100/5, 200/5 mcg mometasone furoate and formoterol fumarate dihydrate [N] [A]	Symbicort[®] 80/4.5, 160/4.5 mcg budesonide and formoterol fumarate dihydrate [N] [A] [C] [G]	Wixela[™] Inhub[™] 100/50, 250/50, 500/50 mcg fluticasone propionate and salmeterol xinafoate (approved generic of Advair Diskus) [N] [A] [C]
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COMBINATION MEDICATIONS (LABA)

contain both long-acting beta₂-agonist (LABA) and long-acting muscarinic antagonist (LAMA)

Anoro[®] EUlпта[™] 62.5/25 mcg umedidinium and vilanterol inhalant powder [N] [A] [G]	Bevspi[®] Aerosphere[™] 9/4.8 mcg glycopyrrolate and formoterol fumarate [N] [A] [G]	Duakir[®] Pressair[™] 400, 12 mcg aclidinium bromide and formoterol fumarate [N] [A] [G]	Stiolto[™] RespiMat[™] 2.5/2.5 mcg tiotropium bromide and olodaterol [N] [A] [G]
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COMBINATION MEDICATIONS (LABA) AND SHORT-ACTING BETA₂-AGONIST (SABA)

contain both long-acting beta₂-agonist (LABA) and short-acting beta₂-agonist (SABA)

Trelegy[®] EUlпта[™] 200/62.5/25 mcg, 100/62.5/25 mcg fluticasone furoate, umedidinium and vilanterol inhalant powder [N] [A] [C]	Breztri[®] Aerosphere[™] 160/9/4.8 mcg budesonide, glycopyrrolate and formoterol fumarate [N] [A] [G]	Combivent[®] RespiMat[™] 20/100 mcg ipratropium bromide and albuterol [N] [A] [G]
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COMBINATION MEDICATIONS (LABA) AND SHORT-ACTING BETA₂-AGONIST (SABA)

contain both long-acting beta₂-agonist (LABA) and short-acting beta₂-agonist (SABA)

Ipratropium Bromide and Albuterol Sulfate Inhalation Solution 2.5 mg; 3 mL [C] [G]	AirSupra[®] 80, 90 mcg budesonide and albuterol [N] [A]
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BIOLOGICS

target cells and pathways that cause airway inflammation; delivered by injection or IV

Cinqair[®] 62.5/25 mg reslizumab [A]	Dupixent[®] 100, 200, 300 mg dupilumab [A]	Fasenra[®] 30 mg benralizumab [A]	Nucala[®] 100 mg mepolizumab [A]	Tezspire[™] 210 mg tezepelumab-efto [A]	Xolair[®] 75 to 375 mg omalizumab [A]
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LEUKOTRIENE MODIFIERS

block chemicals called leukotrienes that cause airway inflammation; available as tablet or granules

Singulair[®] 4, 5, 10 mg montelukast [A]	Zafirlucast 10, 20 mg zafirlucast [A]	Zyflo CR[®] 600 mg zileuton [A]
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Respiratory medications:

We have three categories of medications



Steroids
All long acting

Reduce most
every aspect of
inflammation

Medication Categories: Steroids

- **Corticosteroids bind to the glucocorticoid receptor and mediate changes in gene expression that lead to multiple downstream effects over hours to days.**
- **Almost every inflammation mediator is reduced**
- **Many actions, all with a central goal of reducing inflammation at the source**
- **Most aspects of inflammation are affected**

SHORT-ACTING BETA₂-AGONIST BRONCHODILATORS

relax tight muscles in airways and offer quick relief of symptoms such as coughing, wheezing and shortness of breath for 3-6 hours

Albuterol Sulfate Inhalation Solution
 0.63, 1.5, 2.5 mg;
 3 mL
 G N



ProAir[®] Digihaler[™]
 90 mcg albuterol sulfate inhalant on powder
 N A



ProAir RespiClick[®]
 90 mcg albuterol sulfate inhalant powder
 N A



Proventil[®] HFA
 90 mcg albuterol sulfate
 N A G



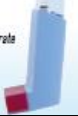
Ventolin[®] HFA
 90 mcg albuterol sulfate
 N A G



Xopenex[®]
 0.31, 0.63, 1.25 mg;
 3 mL levosalbutamol hydrochloride inhalant solution
 A G N



Xopenex HFA[®]
 45 mcg levosalbutamol tartrate
 A G



LONG-ACTING BETA₂-AGONIST BRONCHODILATORS

relax tight muscles in airways and offer lasting relief of symptoms such as coughing, wheezing and shortness of breath for at least 12 hours

Brovana[®]
 15 mg; 2 mL formoterol fumarate inhalation solution
 C N



Perforomist[®]
 20 mcg; 2 mL formoterol fumarate inhalation solution
 G N



Serevent[®] Diskus[®]
 50 mcg salmeterol xinafoate inhalant powder
 N A C



Striverdi[®] RespiMat[®]
 2.5 mcg olodaterol hydrochloride
 N B C



INHALED CORTICOSTEROIDS

reduce and prevent swelling of airway tissues; they do not relieve sudden symptoms of coughing, wheezing or shortness of breath

Abresco[®] HFA
 80, 160 mcg adalsonide
 N A



ArmonAir[®] Digihaler[™]
 55, 113, 232 mcg fluticasone propionate inhalant on powder
 N B A



Amulya[®] EUlpta[®]
 50, 100, 200 mcg fluticasone furoate inhalation powder
 N A



Asmanex[®] HFA
 50, 100, 200 mcg mometasone furoate
 N B A



Asmanex[®] Twisthaler[™]
 110, 220 mcg mometasone furoate inhalant powder
 N B A



Fluticasone Propionate Diskus Inhalation Powder
 50, 100, 250 mcg
 Approved generic of Flovent HFA
 N B A



Fluticasone Propionate HFA
 44, 110, 220 mcg
 Approved generic of Flovent HFA
 N B A



Pulmicort Flexhaler[®]
 90, 180 mcg budesonide inhalant powder
 N B A



Pulmicort Respules[®]
 0.25, 0.50, 1.0 mg; 2 mL budesonide inhalation suspension
 A G N



QVAR[®] Redihaler[™]
 40, 80 mcg beclomethasone dipropionate
 N B A



MUSCARINIC ANTAGONISTS (ANTICHOLINERGIC)

relieve cough, sputum production, wheeze and chest tightness associated with chronic lung diseases

Atrovent[®] HFA
 17 mcg ipratropium bromide
 N B C



Incruse[®] EUlpta[®]
 62.5 mcg umecidivium inhalation powder
 N B C



Ipratropium Bromide Inhalation Solution
 0.5, 2.5 mg; 2.5 mL
 C G N



Spiriva[®] HandiHaler[®]
 18 mcg tiotropium bromide inhalation powder
 C



Spiriva[®] RespiMat[®]
 1.25, 2.5 mcg tiotropium bromide
 N B A C



Tadorza[®] Pressair[™]
 400 mcg acclidium bromide inhalation powder
 N B C



Yupelri[®]
 17.5 mcg; 3 mL roflumetinol inhalation solution
 C N



PDE4 INHIBITORS

target lung inflammation and reduce exacerbations

Dalresp[®]
 250, 500 mcg roflumetinol
 C



COMBINATION MEDICATIONS

contain both inhaled corticosteroid and long-acting beta₂-agonist (LABA)

Advair Diskus[®]
 100/50, 250/50, 500/50 mcg
 Fluticasone propionate and salmeterol inhalation powder
 N B A C G



Advair[®] HFA
 45/21, 113/21, 230/21 mcg
 Fluticasone propionate and salmeterol xinafoate
 N B A G



AirDuo[®] Digihaler[™]
 55/14, 113/14, 232/14 mcg
 Fluticasone propionate and formoterol fumarate inhalant on powder
 N B A



AirDuo[®] RespiClick[®]
 55/14, 113/14, 232/14 mcg
 Fluticasone propionate and formoterol fumarate inhalant powder
 N B A G



Breo[®] EUlpta[®]
 50/25, 100/25, 200/25 mcg
 Fluticasone furoate and vilanterol inhalation powder
 N B A C G



Breyna[™]
 80/4.5, 160/4.5 mcg
 Budesonide and formoterol fumarate dihydrate (approved generic of Symbicort)
 N B A C



Dulera[®]
 50/5, 100/5, 200/5 mcg
 mometasone furoate and formoterol fumarate dihydrate
 N B A



Symbicort[®]
 80/4.5, 160/4.5 mcg
 budesonide and formoterol fumarate dihydrate
 N B A C G



Wixela[™] Inhub[™]
 100/50, 250/50, 500/50 mcg
 Fluticasone propionate and salmeterol xinafoate (approved generic of Advair Diskus)
 N B A G



contain both long-acting beta₂-agonist (LABA) and long-acting muscarinic antagonist (LAMA)

Anoro[®] EUlpta[®]
 62.5/25 mcg umecidivium and vilanterol inhalant powder
 N B C



Bevespi Aerosphere[®]
 9/4.8 mcg glycopyrrate and formoterol fumarate
 N B C



Duaklir[®] Pressair[™]
 400, 12 mcg solivium bromide and formoterol fumarate
 N B C



Stiolto[®] RespiMat[®]
 2.5/2.5 mcg tiotropium bromide and olodaterol
 N B C



contain inhaled corticosteroid, long-acting beta₂-agonist (LABA) and long-acting muscarinic antagonist (LAMA)

Trelegy[®] EUlpta[®]
 200/62.5/25 mcg, 100/62.5/25 mcg
 Fluticasone furoate, umecidivium and vilanterol inhalation powder
 N B A C



Breztri Aerosphere[™]
 160/9/4.8 mcg budesonide, glycopyrrate and formoterol fumarate
 N B C



contain both short-acting beta₂-agonist and short-acting muscarinic antagonist

Combivent[®] RespiMat[®]
 20/100 mcg ipratropium bromide and albuterol
 N B C



Ipratropium Bromide and Albuterol Sulfate Inhalation Solution
 2.5 mg; 3 mL
 C G



AirSupra[®]
 80, 90 mcg budesonide and albuterol
 N B A



BIOLOGICS

target cells and pathways that cause airway inflammation; delivered by injection or IV

Cinqair[®]
 62.5/25 mg reslizumab
 A



Dupixent[®]
 100, 200, 300 mg dupilumab
 A



Fasenra[™]
 30 mg benralizumab
 A



Nucala[®]
 100 mg mepolizumab
 A



Tezspire[™]
 210 mg fezolinetant
 A



Xolair[®]
 75 to 375 mg omalizumab
 A



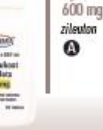
LEUKOTRIENE MODIFIERS

block chemicals called leukotrienes that cause airway inflammation; available as tablet or granules

Singulair[®]
 4, 5, 10 mg montelukast
 A



Zafirlukast
 10, 20 mg zafirlukast
 A



Zyflo CR[®]
 600 mg zileuton
 A



Respiratory medications: We have three categories of medications



SAMA/LAMA

Short – SAMA

Long – LAMA

**Anticholinergic and
constriction
prevention**

Medication Categories: SAMA/LAMA

- **Ipratropium bromide is our only short acting muscarinic, and there are several long acting**
- **These are anti-cholinergic medications that dry up secretions and help prevent constriction**

SHORT-ACTING BETA₂-AGONIST BRONCHODILATORS

relax tight muscles in airways and offer quick relief of symptoms such as coughing, wheezing and shortness of breath for 3-6 hours

Albuterol Sulfate Inhalation Solution
0.63, 1.5, 2.5 mg; 3 mL
DI



ProAir[®] Digihaler[™]
90 mcg albuterol sulfate inhaler on powder
DI **A**



ProAir[®] RespiClick[®]
90 mcg albuterol sulfate inhalation powder
DI **A**



Proventil[®] HFA
90 mcg albuterol sulfate
DI **A** **C**



Ventolin[®] HFA
90 mcg albuterol sulfate
DI **A** **C**



Xopenex[®]
0.31, 0.63, 1.25 mg; 3 mL levosalbutamol hydrochloride inhaler on solution
A **C** **N**



Xopenex HFA[®]
45 mcg levalbuterol tartrate
A **C**



LONG-ACTING BETA₂-AGONIST BRONCHODILATORS

relax tight muscles in airways and offer lasting relief of symptoms such as coughing, wheezing and shortness of breath for at least 12 hours

Brovana[®]
15 mg; 2 mL arformoterol tartrate inhalation solution
C **N**



Perforomist[®]
20 mcg; 2 mL formoterol fumarate inhalation solution
C **N**



Severent[®] Diskus[®]
50 mcg astemizole zafirlucast inhalation powder
DI **A** **C**



Striverdi[®] Respimat[®]
2.5 mcg olodaterol hydrochloride
DI **C**



INHALED CORTICOSTEROIDS

reduce and prevent swelling of airway tissue; they do not relieve sudden symptoms of coughing, wheezing or shortness of breath

Abvesco[®] HFA
80, 160 mcg ciclesonide
DI **A**



ArmonAir[®] Digihaler[™]
55, 113, 232 mcg fluticasone propionate inhaler on powder
DI **A**



Arnuly[®] EUпта[®]
50, 100, 200 mcg mometasone furoate inhalation powder
DI **A**



Asmanex[®] HFA
50, 100, 200 mcg mometasone furoate
DI **A**



Asmanex[®] Twisthaler[®]
110, 220 mcg mometasone furoate inhaler on powder
DI **A**



Fluticasone Propionate Diskus Inhalation Powder
50, 100, 250 mcg approved generic of Flonid Diskus
DI **A**



Fluticasone Propionate HFA
44, 110, 220 mcg approved generic of Flovent HFA
DI **A**



Pulmicort Flexhaler[®]
90, 180 mcg budesonide inhaler on powder
DI **A**



Pulmicort Respules[®]
0.25, 0.50, 1.0 mg; 2 mL budesonide inhalation suspension
A **C** **N**



QVAR[®] Redihaler[™]
40, 80 mcg beclomethasone dipropionate
DI **A**



MUSCARINIC ANTAGONISTS (ANTICHOLINERGIC)

relieve cough, sputum production, wheeze and chest tightness associated with chronic lung diseases

SHORT-ACTING

Atrovent[®] HFA
17 mcg ipratropium bromide
DI **C**



LONG-ACTING

Incruse[®] EUпта[®]
62.5 mcg umecidivium inhalation powder
DI **C**



Ipratropium Bromide Inhalation Solution
0.5, 2.5 mg; 2.5 mL
C **C** **N**



Spiriva[®] HandiHaler[®]
18 mcg tiotropium bromide inhalation powder
C



Spiriva[®] Respimat[®]
1.25, 2.5 mg tiotropium bromide
DI **A** **C**



Tedorza[™] Pressair[™]
400 mcg aclidinium bromide inhalation powder
DI **C**



Yupelri[®]
17.5 mcg; 3 mL rarefensacin inhalation solution
C **N**



PDE4 INHIBITORS

target lung inflammation and reduce exacerbations

Daliresp[®]
250, 500 mcg roflumilast
C



COMBINATION MEDICATIONS

contain both inhaled corticosteroid and long-acting beta₂-agonist (LABA)

Advair Diskus[®]
100/50, 250/50, 500/50 mcg fluticasone propionate and salmeterol inhalation powder
DI **A** **C** **G**



Advair[®] HFA
45/21, 115/21, 230/21 mcg fluticasone propionate and salmeterol xinafoate
DI **A** **C**



AirDuo[®] Digihaler[™]
55/14, 113/14, 232/14 mcg fluticasone propionate and salmeterol inhaler on powder
DI **A**



AirDuo[®] RespiClick[®]
55/14, 113/14, 232/14 mcg fluticasone propionate and salmeterol inhalation powder
DI **A** **C**



Breo[®] EUпта[®]
50/25, 100/25, 200/25 mcg fluticasone furoate and vilanterol inhalation powder
DI **A** **C** **G**



Breyna[™]
80/4.5, 160/4.5 mcg budesonide and formoterol fumarate dihydrate (approved generic of Symbicort)
DI **A** **C**



Dulera[®]
50/5, 100/5, 200/5 mcg mometasone furoate and formoterol fumarate dihydrate
DI **A**



Symbicort[®]
80/4.5, 160/4.5 mcg budesonide and formoterol fumarate dihydrate
DI **A** **C** **G**



Wixela[™] Inhub[™]
100/50, 250/50, 500/50 mcg fluticasone propionate and salmeterol xinafoate (approved generic of Advair Diskus)
DI **A** **C**



contain both long-acting beta₂-agonist (LABA) and long-acting muscarinic antagonist (LAMA)

Anoro[®] EUпта[®]
62.5/25 mcg umecidivium and vilanterol inhaler on powder
DI **C**



Bevespi Aerosphere[®]
9/4.8 mcg glycopyrrate and formoterol fumarate
DI **C**



Duakir[®] Pressair[®]
400, 12 mcg aclidinium bromide and formoterol fumarate
DI **C**



Stiolto[™] Respimat[®]
2.5/2.5 mcg tiotropium bromide and olodaterol
DI **C**



Trelegy[®] EUпта[®]
200/62.5/25 mcg, 100/62.5/25 mcg fluticasone furoate, umecidivium and vilanterol inhalation powder
DI **A** **C**



Breztri Aerosphere[™]
160/9/4.8 mcg budesonide, glycopyrrate and formoterol fumarate
DI **C**



Combivent[®] Respimat[®]
20/100 mcg ipratropium bromide and albuterol
DI **C**



Ipratropium Bromide and Albuterol Sulfate Inhalation Solution
2.5 mg; 3 mL
C **C**



AirSupra[®]
80, 90 mcg budesonide and albuterol
DI **A**



BIOLOGICS

target cells and pathways that cause airway inflammation; delivered by injection or IV

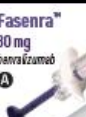
Cinqair[®]
62.5/25 mg reslizumab
A



Dupixent[®]
100, 200, 300 mg dupilumab
A



Fasenra[™]
30 mg benralizumab
A



Nucala[®]
100 mg mepolizumab
A



Tezspire[™]
100 mg tezepelumab-ekko
A



Xolair[®]
75 to 375 mg omalizumab
A



LEUKOTRIENE MODIFIERS

block chemicals that cause airway inflammation

Singulair[®]
4, 5, 10 mg montelukast
A



Zafirlucast
10, 20 mg zafirlucast
A

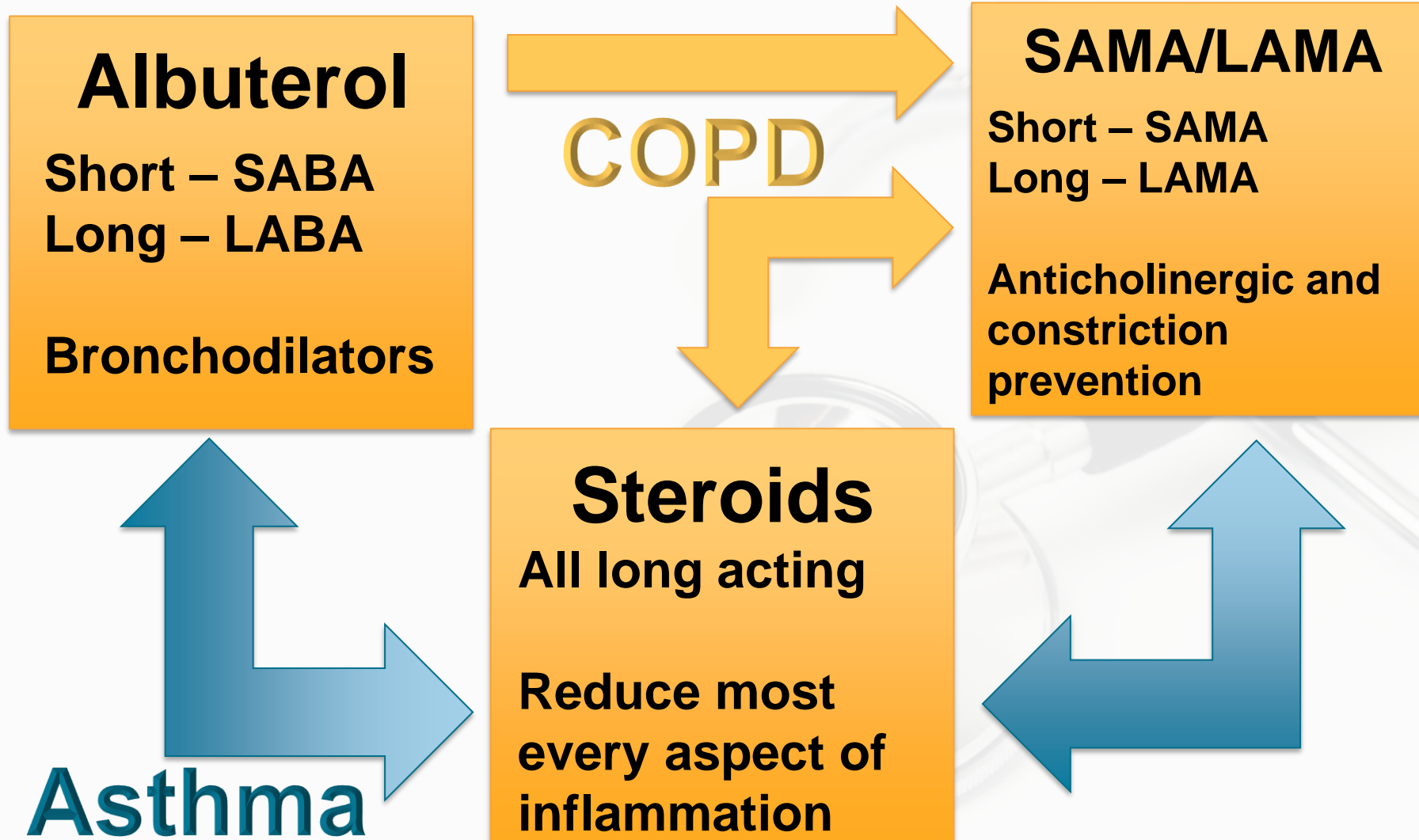


Zyflo CR[®]
600 mg zileuton
A



Respiratory medications:

We have three categories of medications

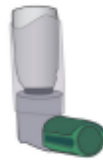


**FOR
REFERENCE**

Short-Acting Bronchodilators

SAMA

(Short-Acting Muscarinic Antagonist)
USE REGULARLY or PRN



Atrovent® MDI
(ipratropium sulphate)
20 mcg/dose

Duration: 4-6h
Company: BI
*nebulas also available

SABA

(Short-Acting Beta2-Agonist)
USE REGULARLY or PRN



Airomir™ MDI
(salbutamol sulphate)
100 mcg/dose

Duration: 4-6h
Company: Valeant



Bricanyl® Turbuhaler®
(terbutaline sulphate)
0.5 mg/dose

Duration: 4-6h
Company: AZ



Ventolin® Diskus®
(salbutamol sulphate)
200 mcg/dose

Duration: 4-6h
Company: GSK



Ventolin® MDI
(salbutamol sulphate)
100 mcg/dose

Duration: 4-6h
Company: GSK
*nebulas and generic brands available

Company Key

AZ – AstraZeneca Canada Inc.
BI – Boehringer Ingelheim Canada Ltd.
GSK – GlaxoSmithKline Inc.
Novartis – Novartis Pharmaceuticals Canada Inc.
Valeant – Valeant Canada
Viatrix – Viatrix

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Long-Acting Bronchodilators

LAMA

(Long-Acting Muscarinic Antagonist)
USE REGULARLY



Incruse™ Ellipta®
(umeclidinium bromide)
62.5 mcg/dose

Duration: 24h
Company: GSK



Seebri® Breezhaler®
(glycopyrronium bromide)
50 mcg/dose

Duration: 24h
Company: Novartis



Spiriva® Handihaler®
(tiotropium bromide monohydrate)
18 mcg/dose

Duration: 24h
Company: BI



Spiriva® Respimat®
(tiotropium bromide monohydrate)
2.5 mcg/dose

Duration: 24h
Company: BI



Tudorza® Genuair®
(aclidinium bromide)
400 mcg/dose

Duration: 12h
Company: AZ

LABA

(Long-Acting Beta2-Agonist)
USE REGULARLY



Foradil® Aerolizer®
(formoterol fumarate)
12 mcg/dose

Duration: 12h
Company: Novartis



Onbrez® Breezhaler®
(indacaterol maleate)
75 mcg/dose

Duration: 24h
Company: Novartis



Serevent® Diskus®
(salmeterol xinafoate)
50 mcg/dose

Duration: 12h
Company: GSK



Striverdi® Respimat®
(olodaterol hydrochloride)
2.5 mcg/dose

Duration: 24h
Company: BI
*Approved by Health Canada but may not be available yet



Breztri™ Aerosphere®
(budesonide/glycopyrronium/formoterol fumarate)
182/8.2/5.8 mcg/dose

Duration: 12h
Company: AZ

Combination Inhalers

ICS/LABA

(Inhaled Corticosteroid/Long-Acting Beta2-Agonist)
USE REGULARLY



Advair® Diskus®
(fluticasone propionate/salmeterol xinafoate)
100/50; 250/50;
500/50 mcg doses

Duration: 12h
Company: GSK



Breo™ Ellipta®
(fluticasone furoate/vilanterol trifenate)
100/25 mcg/dose

Duration: 24h
Company: GSK



Symbicort® Turbuhaler®
(budesonide/formoterol fumarate)
100/6; 200/6; 400/12 FORTE mcg doses

Duration: 12h
Company: AZ



Wixela® Inhub®
(fluticasone propionate/salmeterol xinafoate)
100/50; 250/50;
500/50 mcg doses

Duration: 12h
Company: Viatrix

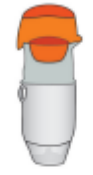


Treligy™ Ellipta®
(fluticasone furoate/umeclidinium bromide/vilanterol trifenate)
100/62.5/25 mcg/dose

Duration: 24h
Company: GSK

SAMA and SABA

USE REGULARLY



Combivent® Respimat®
(ipratropium bromide/salbutamol sulphate)
20/100 mcg/dose

Duration: 4-6h
Company: BI
*nebulas also available

LAMA and LABA

USE REGULARLY



Anoro™ Ellipta®
(umeclidinium bromide/vilanterol trifenate)
62.5/25 mcg/dose

Duration: 24h
Company: GSK



Duaklir® Genuair®
(aclidinium bromide/formoterol fumarate dehydrate)
400/12 mcg/dose

Duration: 12h
Company: AZ



Inspiralto® Respimat®
(tiotropium bromide monohydrate/olodaterol hydrochloride)
2.5/2.5 mcg dose

Duration: 24h
Company: BI



Ultibro® Breezhaler®
(glycopyrronium bromide/indacaterol maleate)
50/110 mcg/dose

Duration: 24h
Company: Novartis

ICS/LAMA/LABA USE REGULARLY



GLOBAL INITIATIVE FOR CHRONIC OBSTRUCTIVE LUNG DISEASE (GOLD):





www.goldcopd.org

Global Initiative for
Chronic Obstructive
Lung Disease

2024
REPORT

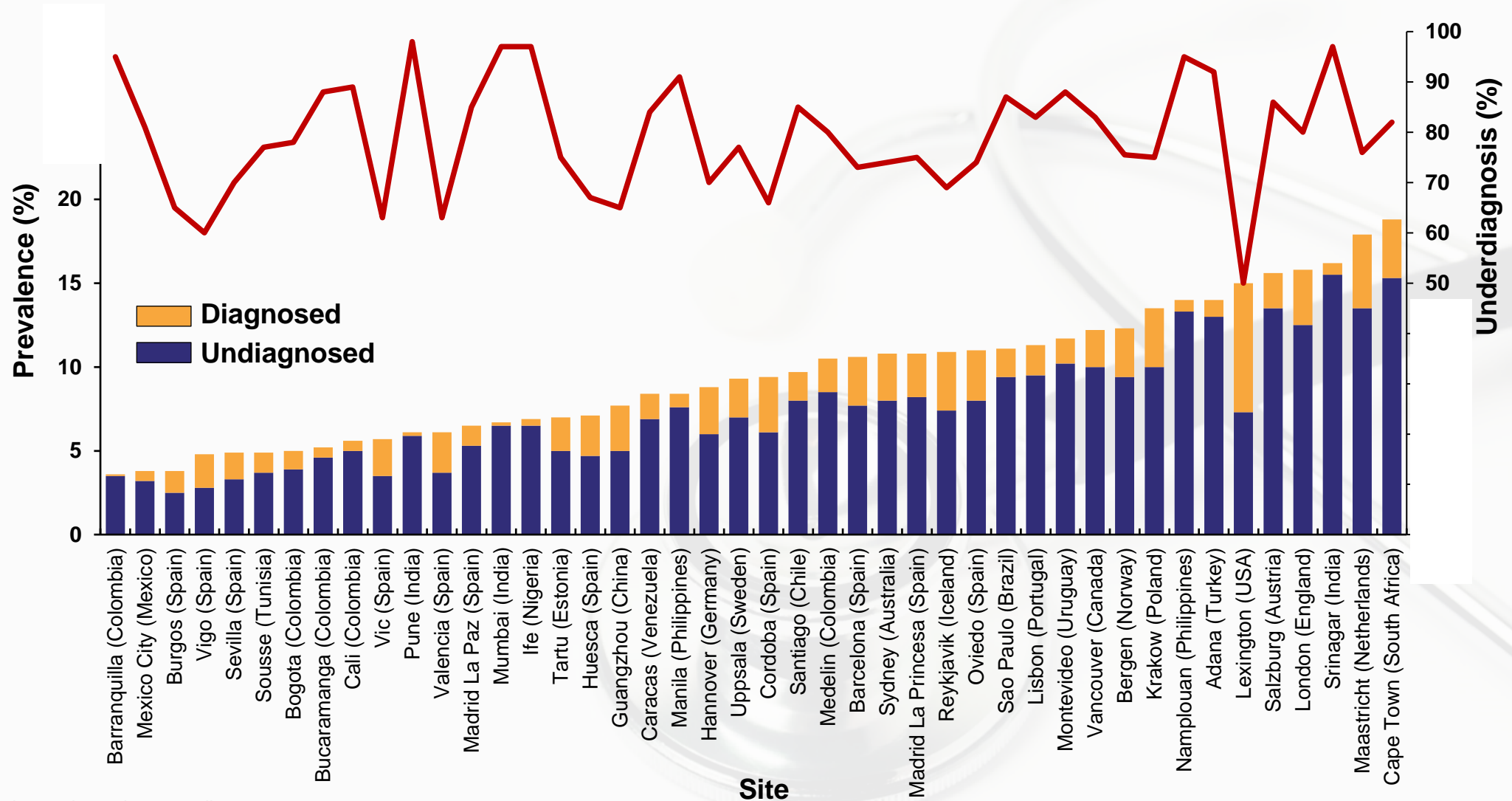


https://goldcopd.org/wp-content/uploads/2023/12/GOLD-2024_v1.1-1Dec2023_WMV.pdf

COPD Defined

‘A common preventable and treatable disease, is characterized by persistent airflow limitation that is usually progressive and associated with an enhanced chronic inflammatory response in the airways and the lung to noxious particles or gases. Exacerbations and comorbidities contribute to the overall severity in individual patients.’

COPD is Underdiagnosed



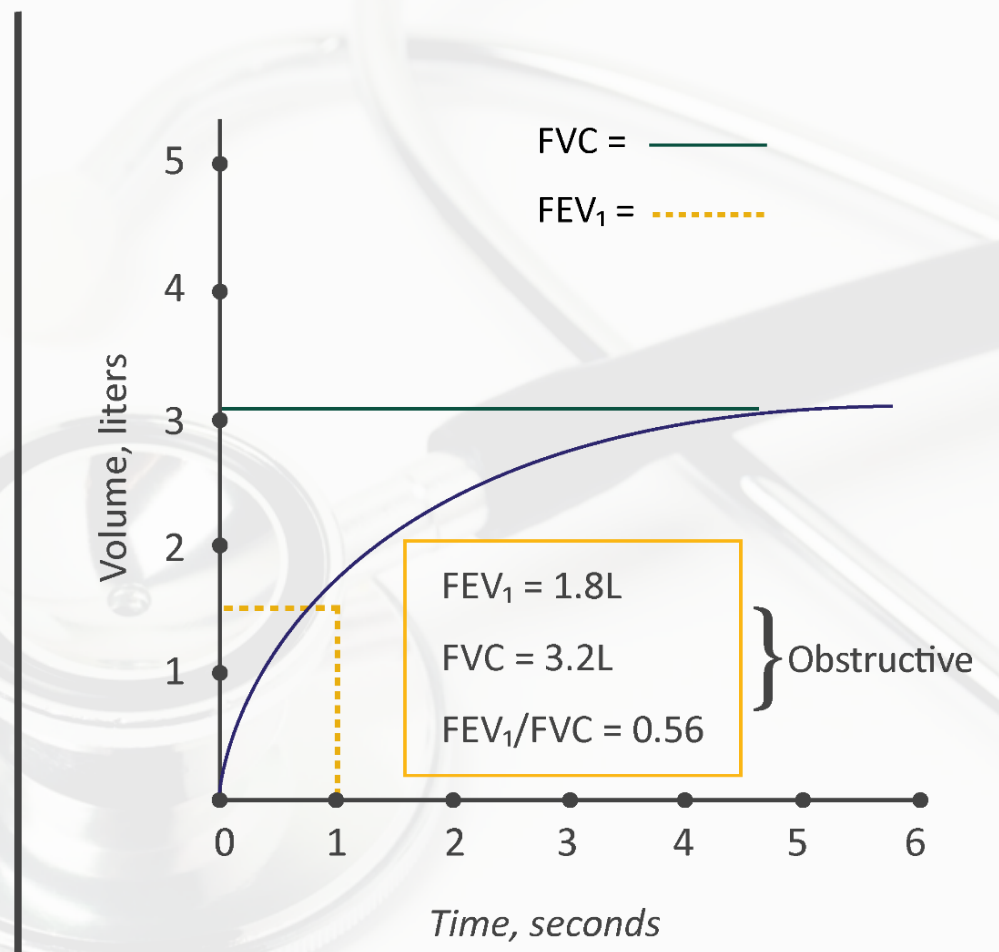
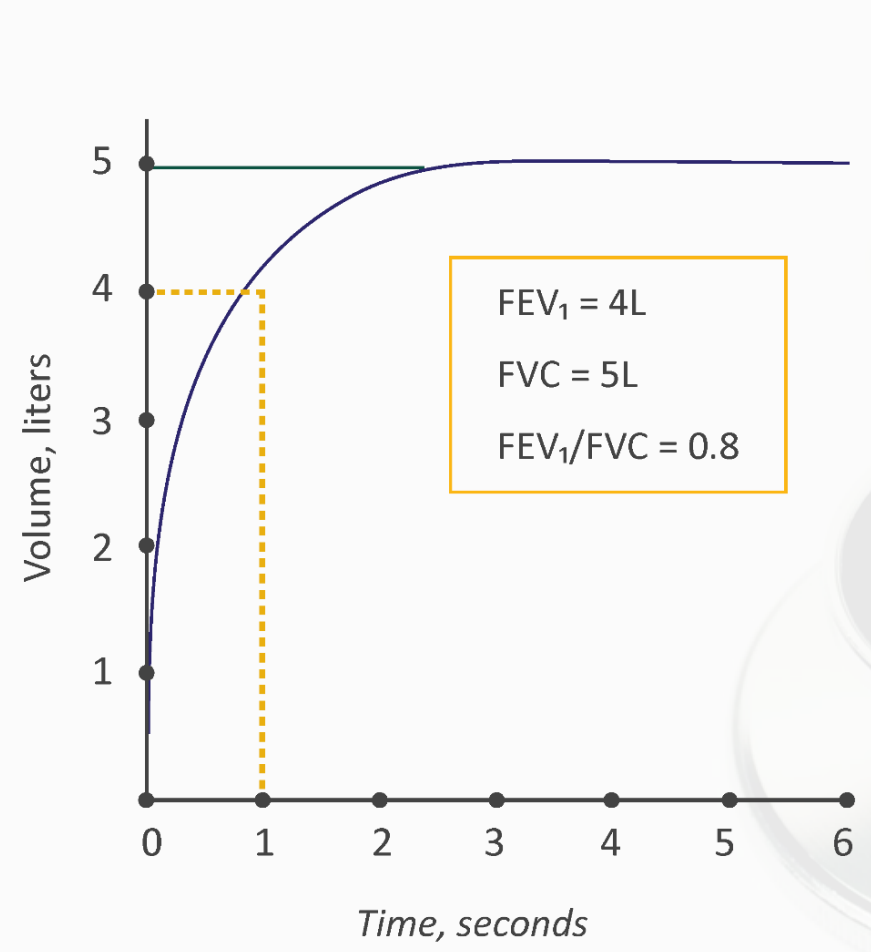
COPD Diagnosis Considerations

Consider COPD and perform spirometry if any of these indicators are present in a patient over 40 years of age:

Symptom	Detail
Dyspnea that is:	<ul style="list-style-type: none"> • Progressive over time • Characteristically worse with exercise • Persistent
Chronic cough	<ul style="list-style-type: none"> • May be intermittent and unproductive • Recurrent wheeze
Chronic sputum production	<ul style="list-style-type: none"> • Any pattern of chronic sputum production may indicate COPD
Recurrent LRTIs	
History of risk factors	<ul style="list-style-type: none"> • Host factors (eg, genetic factors, congenital/developmental abnormalities) • Tobacco smoke • Smoke from home cooking and heating fuels • Occupational dusts, vapors, fumes, gases and other chemicals
Family history of COPD and/or childhood factors	<ul style="list-style-type: none"> • Examples include: low birthweight, childhood respiratory infections, Hx of Alpha-1 Antitrypsin Deficiency or unexplained pulmonary disease

Spirometry or PFTs are Required

▶ SPIROMETRY - NORMAL TRACE ▶ SPIROMETRY - OBSTRUCTIVE DISEASE



COPD Diagnosis Considerations

CLASSIFICATION OF AIRFLOW LIMITATION SEVERITY IN COPD (BASED ON POST-BRONCHODILATOR FEV₁)

In patients with FEV₁/FVC < 0.70:

GOLD 1:	Mild	FEV ₁ ≥ 80% predicted
GOLD 2:	Moderate	50% ≤ FEV ₁ < 80% predicted
GOLD 3:	Severe	30% ≤ FEV ₁ < 50% predicted
GOLD 4:	Very Severe	FEV ₁ < 30% predicted

In patients with $FEV_1/FVC < 0.70$:

This is comparing the patient to themselves



▶ CLASSIFICATION OF AIRFLOW LIMITATION SEVERITY IN COPD (BASED ON POST-BRONCHODILATOR FEV₁)

In patients with FEV₁/FVC < 0.70:

GOLD 1:	Mild	FEV ₁ ≥ 80% predicted
GOLD 2:	Moderate	50% ≤ FEV ₁ < 80% predicted
GOLD 3:	Severe	30% ≤ FEV ₁ < 50% predicted
GOLD 4:	Very Severe	FEV ₁ < 30% predicted

This is comparing the patient to a peer based on height, weight, age, gender and ethnicity.

COPD Diagnosis and Treatment



So do this once,
then, the good news . . .

COPD Diagnosis and Treatment



COPD Diagnosis and Treatment

Spirometry
or
PFT



Category
or
Treatment

Set this aside and ask them how they are doing

▶ CLASSIFICATION OF AIRFLOW LIMITATION SEVERITY IN COPD (BASED ON POST-BRONCHODILATOR FEV₁)

In patients with FEV₁/FVC < 0.70:

GOLD 1:	Mild	FEV ₁ ≥ 80% predicted
GOLD 2:	Moderate	50% ≤ FEV ₁ < 80% predicted
GOLD 3:	Severe	30% ≤ FEV ₁ < 50% predicted
GOLD 4:	Very Severe	FEV ₁ < 30% predicted

CLASSIFICATION OF AIRFLOW LIMITATION SEVERITY IN COPD (BASED ON POST-BRONCHODILATOR FEV ₁)		
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GOLD 1:	Mild	FEV ₁ ≥ 80% predicted
GOLD 2:	Moderate	50% ≤ FEV ₁ < 80% predicted
GOLD 3:	Severe	30% ≤ FEV ₁ < 50% predicted
GOLD 4:	Very Severe	FEV ₁ < 30% predicted

Just like with asthma, every visit needs to start with an assessment of symptoms, exacerbations and overall condition

CAT™ ASSESSMENT

For each item below, place a mark (x) in the box that best describes you currently.
Be sure to only select one response for each question.

EXAMPLE: I am very happy	<input type="radio"/> 0 <input checked="" type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5	I am very sad	SCORE
I never cough	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5	I cough all the time	_____
I have no phlegm (mucus) in my chest at all	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5	My chest is completely full of phlegm (mucus)	_____
My chest does not feel tight at all	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5	My chest feels very tight	_____
When I walk up a hill or one flight of stairs I am not breathless	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5	When I walk up a hill or one flight of stairs I am very breathless	_____
I am not limited doing any activities at home	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5	I am very limited doing activities at home	_____
I am confident leaving my home despite my lung condition	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5	I am not at all confident leaving my home because of my lung condition	_____
I sleep soundly	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5	I don't sleep soundly because of my lung condition	_____
I have lots of energy	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5	I have no energy at all	_____

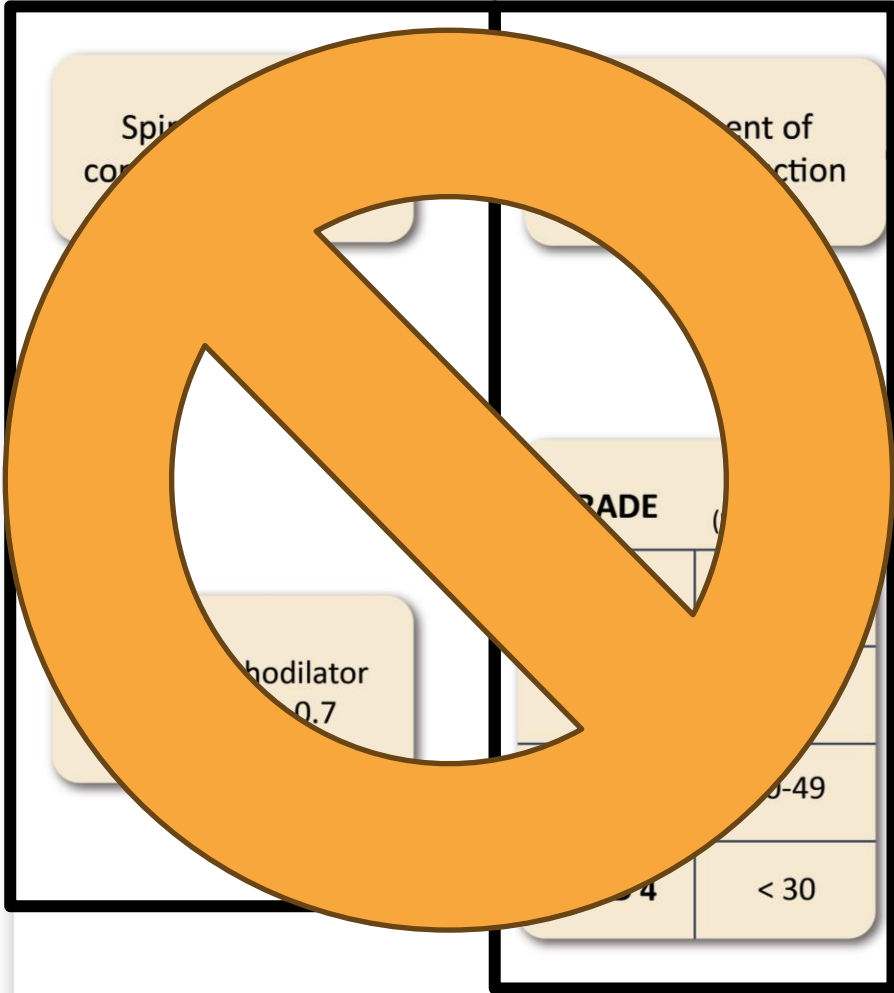
Reference: Jones et al. ERJ 2009; 34 (3); 648-54.

TOTAL SCORE:

Quick Review

- **COPD is widespread and largely underdiagnosed**
- **Most are tobacco related but there are others**
- **Consider this in patients with chronic issues**
- **You need spirometry to get the diagnosis and stage of COPD**
- **But the stage DOES NOT equal quality of life, life expectancy and does not effect treatment decisions**
- **Once this is done, you don't need to repeat it, now we just want to know –**
 - **How are you?**
 - **How often are you sick?**

GOLD ABE Assessment Tool

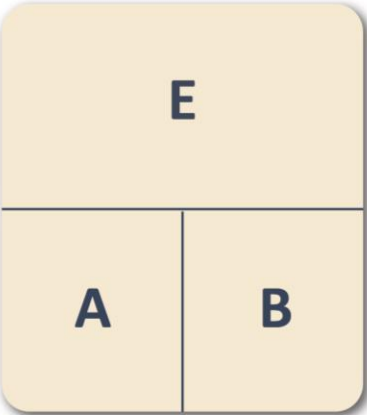


Assessment of symptoms/risk of exacerbations

EXACERBATION HISTORY

≥ 2 moderate exacerbations or ≥ 1 leading to hospitalization

0 or 1 moderate exacerbations (not leading to hospitalization)



mMRC 0-1
CAT < 10

mMRC ≥ 2
CAT ≥ 10

SYMPTOMS

EXACERBATION HISTORY

≥ 2 moderate exacerbations or
≥ 1 leading to hospitalization

0 or 1 moderate exacerbations
(not leading to hospitalization)

E

A

B

mMRC 0-1
CAT < 10

mMRC ≥ 2
CAT ≥ 10

SYMPTOMS

0 or 1 moderate
exacerbations
(not leading to
hospital admission)

GROUP A

A bronchodilator

mMRC 0-1, CAT < 10

0 or 1 moderate
exacerbations
(not leading to
hospital admission)

GROUP B

LABA + LAMA*

mMRC \geq 2, CAT \geq 10

≥ 2 moderate
exacerbations or
≥ 1 leading to
hospitalization

GROUP E

LABA + LAMA*

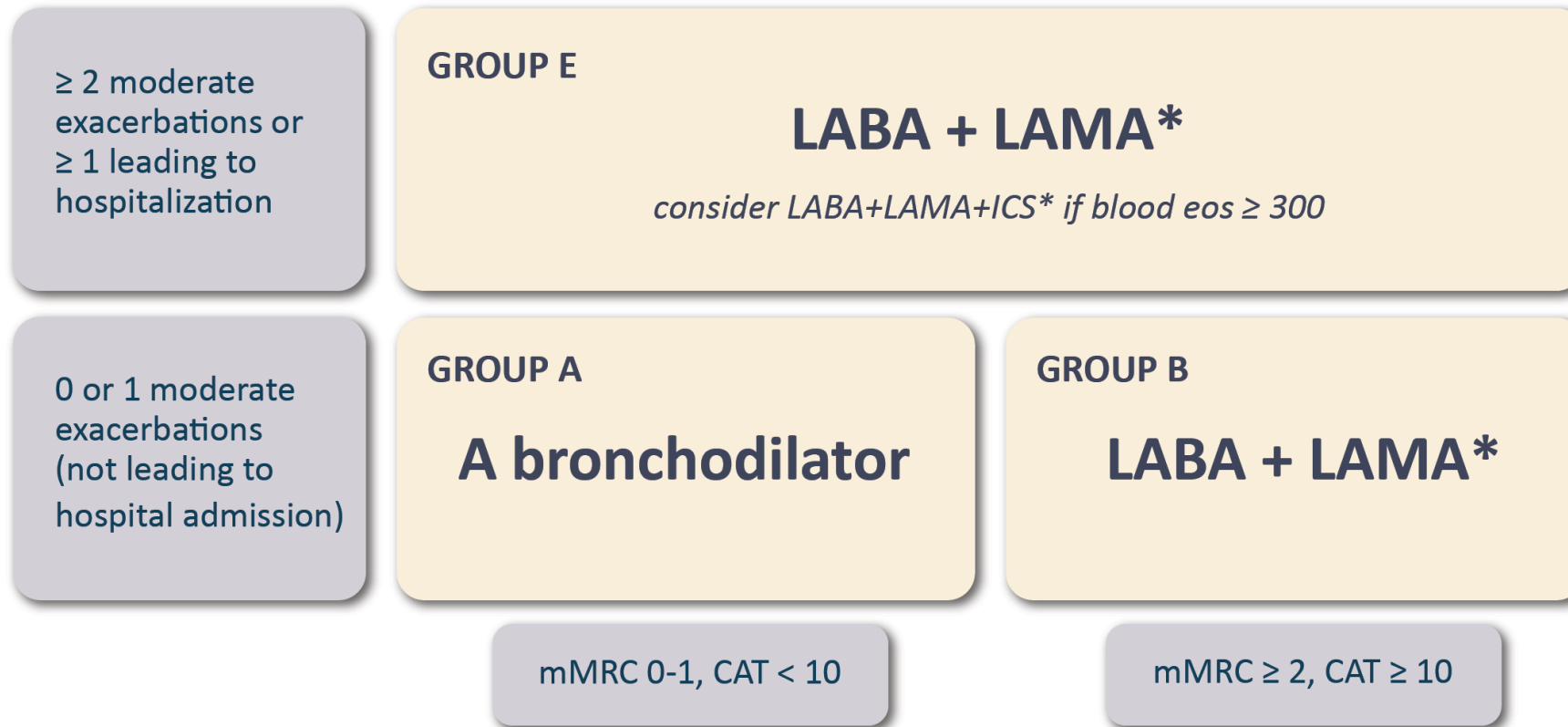
consider LABA+LAMA+ICS if blood eos ≥ 300*

mMRC 0-1, CAT < 10

mMRC ≥ 2, CAT ≥ 10

Initial Pharmacological Treatment

Figure 4.2



*single inhaler therapy may be more convenient and effective than multiple inhalers

Inhaled Steroids (ICS)

If not needed don't
use them!

Increased risk of all
URIs and increased
risk of pneumonia
and exacerbations

Fluticasone is the
worst

GROUP E

LABA + LAMA*

consider LABA+LAMA+ICS if blood eos \geq 300*

Meta-Analysis > Int Immunopharmacol. 2019 Dec;77:105950. doi: 10.1016/j.intimp.2019.105950.
Epub 2019 Oct 17.

Inhaled corticosteroids and risk of pneumonia in patients with chronic obstructive pulmonary disease: A meta-analysis of randomized controlled trials

Mingjin Yang¹, Yuejun Du¹, Hong Chen¹, Depeng Jiang², Zhibo Xu³

Affiliations + expand

PMID: 31629940 DOI: 10.1016/j.intimp.2019.105950

Abstract

Objective: Inhaled corticosteroids (ICS) are generally used to treat patients with chronic obstructive pulmonary disease (COPD) who suffer from repeated exacerbations. Recently, it was reported that ICS treatment increased the risk of pneumonia in COPD patients. But it is controversial. The objective of this paper is to clarify the associations between ICS treatment and the risk of pneumonia in COPD patients.

Methods: PubMed, Cochrane Library, Clinical Trials.gov, and Embase were searched from February 2019 to June 2019. Randomized clinical trials (RCTs) were incorporated that compared ICS with non-ICS treatment on the risk of pneumonia in COPD patients. Meta-analyses were conducted by the Peto and Mantel-Haenszel approaches with corresponding 95% CIs.

Results: Twenty-five trials (N = 49,982 subjects) were included. Pooled results demonstrated a significantly increased risk of pneumonia with ICS use in COPD patients (RR, 1.59, 95% CI, 1.33-1.90; $I^2 = 51\%$). ICS treatment also increased the risk of severe pneumonia (RR, 2.17, 95% CI, 1.47-3.22; $I^2 = 29\%$). The results of subgroup analysis based on doses of ICS were consistent with the above. However, subgroup analyses based on types of ICS revealed that fluticasone therapy was associated with an increased risk of pneumonia but not budesonide. In addition, medium- and low-doses of budesonide treatment also did not increase the risk of pneumonia.

Conclusions: Use of ICS increases the risk of pneumonia in patients with COPD. The above is prominent for fluticasone-containing ICSs but not for budesonide-containing ICSs.

Factors to Consider when Initiating ICS Treatment

Figure 3.1

Factors to consider when adding ICS to long-acting bronchodilators:

(note the scenario is different when considering ICS withdrawal)

STRONGLY FAVORS USE

History of hospitalization(s) for exacerbations of COPD[#]

≥ 2 moderate exacerbations of COPD per year[#]

Blood eosinophils ≥ 300 cells/μL

History of, or concomitant asthma

FAVORS USE

1 moderate exacerbation of COPD per year[#]

Blood eosinophils 100 to < 300 cells/μL

AGAINST USE

Repeated pneumonia events

Blood eosinophils < 100 cells/μL

History of mycobacterial infection

[#]despite appropriate long-acting bronchodilator maintenance therapy (see Table 3.4 and Figure 4.3 for recommendations);

*note that blood eosinophils should be seen as a continuum; quoted values represent approximate cut-points; eosinophil counts are likely to fluctuate.

Adapted from & reproduced with permission of the © ERS 2019: *European Respiratory Journal* 52 (6) 1801219; DOI: 10.1183/13993003.01219-2018 Published 13 December 2018

Three Keys to COPD care/future focus

- Diagnose
- How are you? How often are you sick?
- Decide on what inhaler(s) to use (hint: not a steroid)
- Then become a superstar!

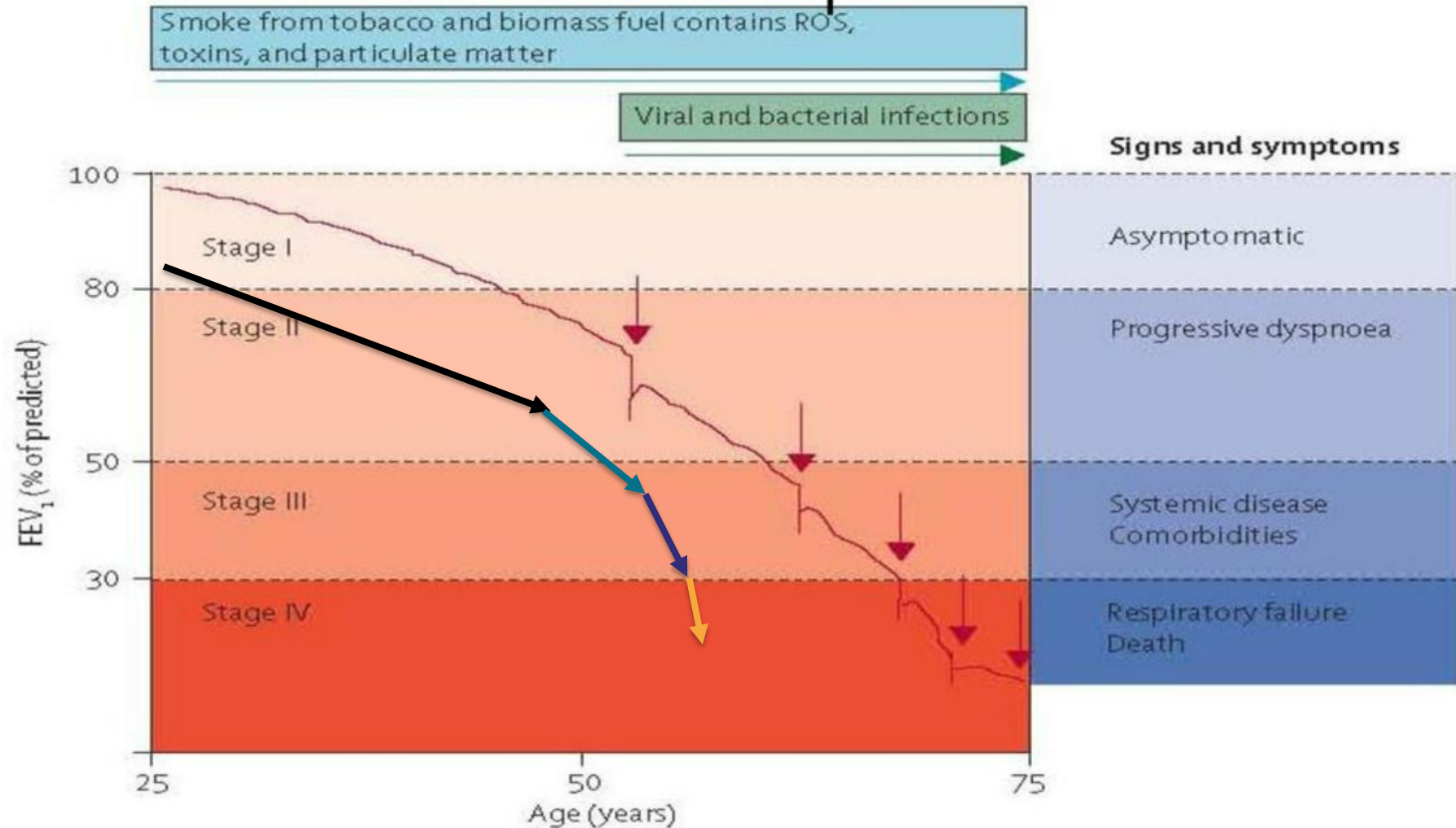


Three Keys to COPD care/future focus

Key #1 - Exacerbations

- **Exacerbations are not “bumps” in the road like they are for asthma**
- **Moderate to severe exacerbations are life altering, patients never recover fully.**
- **An exacerbation is an acute change in a patient's baseline dyspnea, cough, or sputum that is beyond normal variability, and that is sufficient to warrant a change in therapy.**

COPD exacerbations & Effect on FEV₁



Three Keys to COPD care/future focus

Key #1 - Exacerbations

- Causes – viral make up about 80% of flares in a standard COPD population.**
- Bacterial infections, wildfire smoke, cooking fuels or toxin exposure**
- Ran out of meds/noncompliance**

Three Keys to COPD care/future focus

Key #1 - Exacerbations

- **Generally, PO steroids are used:**
 - **Consider shorter and lower**
 - **40 mg for 3 days and 20 mg for 3 days (Medrol dose packs are \$\$)**
- **Patient controlled taper - 40 mg till they are 50% better then 20 mg till they are close to normal**
- **Macrolides (or doxycycline) should be used for most flares, may use without prednisone in the right patient. Consider a longer duration.**
- **Have them do their rescue medication Q4H or Q6H for a couple days then move back to PRN.**
- **OK to help them control cough (anyone know what benzonatate does?)**

Three Keys to COPD care/future focus

Key #2 – Switch to nebulized therapy

Respiratory Medicine 161 (2020) 105857



Contents lists available at [ScienceDirect](#)

Respiratory Medicine

journal homepage: <http://www.elsevier.com/locate/rmed>



Review article

The role of inspiratory flow in selection and use of inhaled therapy for patients with chronic obstructive pulmonary disease

Donald A. Mahler ^{a,b}

^a Emeritus Professor of Medicine, Geisel School of Medicine at Dartmouth, One Rope Ferry Road, Hanover, NH, 03755, USA

^b Valley Regional Hospital, Kane Center, 243 Elm Street, Claremont, NH, 03743, USA



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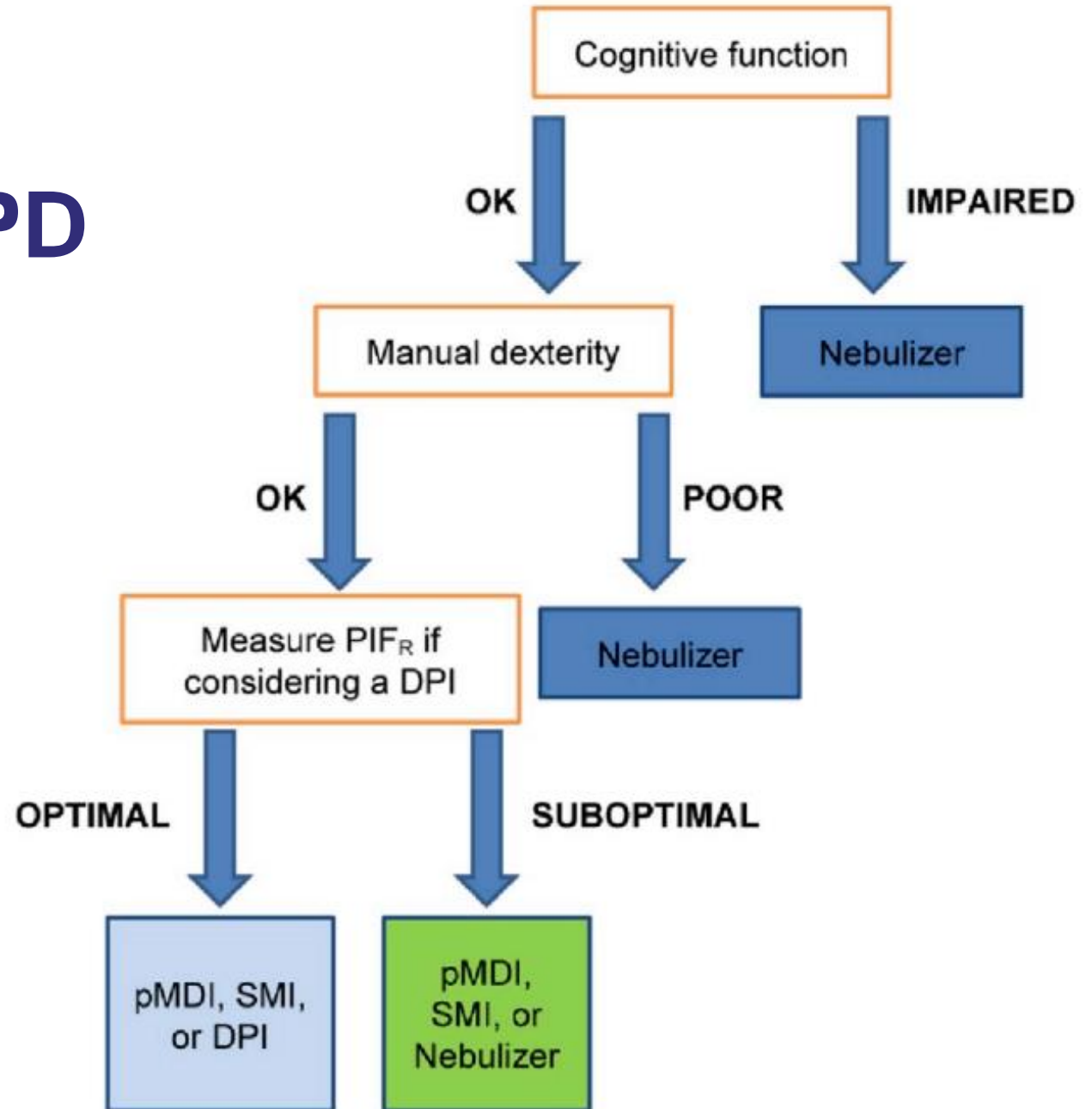
Chronic obstructive pulmonary disease
Hand-held inhalers
Inhalation technique
Inspiratory flow
Peak inspiratory flow

ABSTRACT

Inhalation therapy is the mainstay of chronic obstructive pulmonary disease management, and inhaler selection can have a profound impact on drug delivery and medication adherence, as well as on treatment outcomes. Although multiple delivery systems, such as pressurized metered-dose inhalers, dry powder inhalers, slow-mist inhalers, and nebulizers, are available, clinical benefits achieved by patients rely on effective delivery of the inhaled medication to the airways. Among several factors influencing drug deposition, inspiratory flow is one of the most important. Inspiratory flow impacts drug delivery and subsequent clinical efficacy, making it necessary to adequately train patients to ensure correct inhaler use. Peak inspiratory flow is the maximal airflow generated during a forced inspiratory maneuver. Health care professionals need to select the appropriate delivery system after carefully considering patient characteristics, including lung function, optimal inspiratory flow, manual dexterity, and cognitive function. Herein, the role of inspiratory flow in the selection and use of inhaled therapy in patients with COPD is reviewed.

Three Keys to COPD care/future focus

Key #2 – Switch to nebulized therapy



Three Keys to COPD care/future focus

Key #2 – Switch to nebulized therapy

- **Measure this with an In-Check Device**
- **Can also see if they can “make noise” with their inhaler**
- **Can they hold a Post-it note to their lips?**
- **Do they feel nebulized medication is sig better?**



Commonly Used Maintenance Medications in COPD*

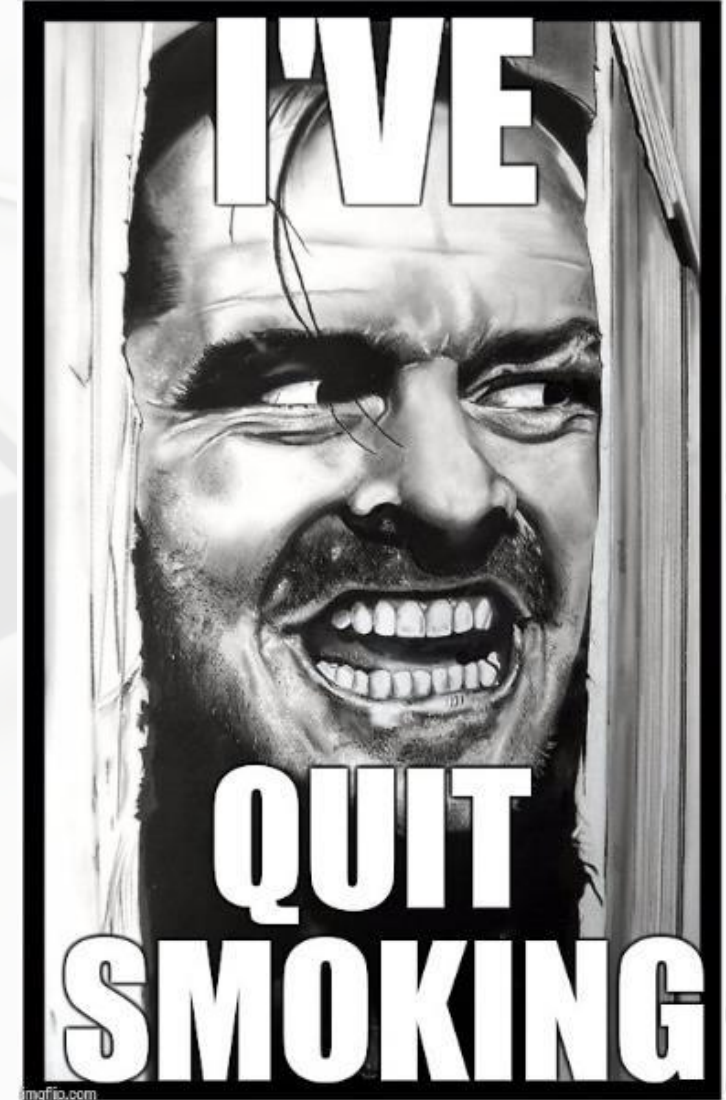
Generic Drug Name	Inhaler Type	DELIVERY OPTIONS			Duration of Action
		Nebulizer	Oral	Injection	
BETA₂-Agonists					
Short-acting (SABA)					
Fenoterol	MDI	✓	pill, syrup		4-6 hours
Levalbuterol	MDI	✓			6-8 hours
Salbutamol (albuterol)	MDI & DPI	✓	pill, syrup, extended release tablet	✓	4-6 hours 12 hours (ext. release)
Terbutaline	DPI		pill	✓	4-6 hours
Long-acting (LABA)					
Arformoterol		✓			12 hours
Formoterol	DPI	✓			12 hours
Indacaterol	DPI				24 hours
Olodaterol	SMI				24 hours
Salmeterol	MDI & DPI				12 hours
Anticholinergics					
Short-acting (SAMA)					
Ipratropium bromide	MDI	✓			6-8 hours
Oxitropium bromide	MDI				7-9 hours
Long-acting (LAMA)					
Acclidinium bromide	DPI,				MDI 12 hours
Glycopyrronium bromide	DPI		solution	✓	12-24 hours
Tiotropium	DPI, SMI, MDI				24 hours
Umeclidinium	DPI				24 hours
Glycopyrrolate		✓			12 hours
Revefenacin		✓			24 hours
Combination Short-Acting Beta₂-Agonist Plus Anticholinergic in One Device (SABA+SAMA)					
Fenoterol/ipratropium	SMI	✓			6-8 hours
Salbutamol/ipratropium	SMI, MDI	✓			6-8 hours
Combination Long-Acting Beta₂-Agonist Plus Anticholinergic in One Device (LABA+LAMA)					
Formoterol/aclidinium	DPI				12 hours
Formoterol/glycopyrronium	MDI				12 hours
Indacaterol/glycopyrronium	DPI				12-24 hours
Vilanterol/umeclidinium	DPI				24 hours
Olodaterol/tiotropium	SMI				24 hours
Methylxanthines					
Aminophylline			solution	✓	Variable, up to 24 hours
Theophylline (SR)			pill	✓	Variable, up to 24 hours
Combination of Long-Acting Beta₂-Agonist Plus Corticosteroid in One Device (LABA+ICS)					
Formoterol/beclometasone	MDI, DPI				12 hours
Formoterol/budesonide	MDI, DPI				12 hours
Formoterol/mometasone	MDI				12 hours
Salmeterol/fluticasone propionate	MDI, DPI				12 hours
Vilanterol/fluticasone furoate	DPI				24 hours
Triple Combination in One Device (LABA+LAMA+ICS)					
Fluticasone/umeclidinium/vilanterol	DPI				24 hours
Beclometasone/formoterol/glycopyrronium	MDI, DPI				12 hours
Budesonide/formoterol/glycopyrrolate	MDI				12 hours
Phosphodiesterase-4 Inhibitors					
Roflumilast			pill		24 hours
Mucolytic Agents					
Erdosteine			pill		12 hours
Carbocysteine†			pill		
N-acetylcysteine†			pill		

*Not all formulations are available in all countries. In some countries other formulations and dosages may be available. †Dosing regimens are under discussion. MDI = metered dose inhaler; DPI = dry powder inhaler; SMI = soft mist inhaler. Note that glycopyrrolate & glycopyrronium are the same compound.

Three Keys to COPD care/future focus

Key #3 – Smoking Cessation

- Motivational interviewing is great, stages of change is great. . .
- When this is ineffective I scare them
- Show them their chest xray
- Shot them their CBC if it's off – elevated RBC or HCT is a LATE sign



Three Keys to COPD care/future focus

Key #3 – Smoking Cessation

- Tell them their lung “age”

MEN

Lung age = $(2.87 \times \text{height [inches]}) - (31.25 \times \text{observed FEV}_1 \text{ [liters]}) - 39.375$

WOMEN

Lung age = $(3.56 \times \text{height [inches]}) - (40 \times \text{observed FEV}_1 \text{ [liters]}) - 77.28$

- This works! You can estimate: **Age + ½ their pack years.**
- 50 year old who has 40 pack year history has a lung age of 70.
- “Well Mr. Jones, most will need oxygen around (pick an age about 3-5 years older than the lung age)”

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[J Fam Pract](#). 2008 Sep; 57(9): 584-586.

Help smokers quit: Tell them their “lung age”

[Kristen Deane](#), MD^{MS} and [James J. Stevermer](#), MD, MSPH

John Hickner, MD, MSc, PURLS Editor

John Hickner, Department of Family Medicine, The University of Chicago ;

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Three Keys to COPD care/future focus

Key #3 – Smoking Cessation

- Then the payoff – “Mr. Jones do you think you would prefer the kind of oxygen tank you carry or one that you pull? We could start looking at tank set ups now if you’d like?”



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Practice Guidelines

Medications for Smoking Cessation: Guidelines from the American Thoracic Society



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COMMENTS

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Key Points for Practice

- Varenicline is more effective than nicotine patches and bupropion with similar or fewer adverse events, even with comorbid psychiatric or substance abuse conditions.
- Combining varenicline with nicotine patches appears to be more effective than using varenicline alone based on limited evidence.
- For people who smoke and are not ready to quit, prescribing varenicline increases six-month abstinence with an NNT of 6 compared with waiting for readiness.
- Extending treatment beyond 12 weeks increases abstinence, with an NNT of 19 compared with shorter treatment durations.

From the *AFP* Editors

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Brian Bizik, MS, PA-C

**Immediate Past-President – American Academy of
Physician Assistants in Allergy, Asthma and Immunology
Pulmonology Care Coordinator, Terry Reilly Health Centers**

208-404-5338

brianbizik@yahoo.com