COPD and GOLD Treatment Guidelines

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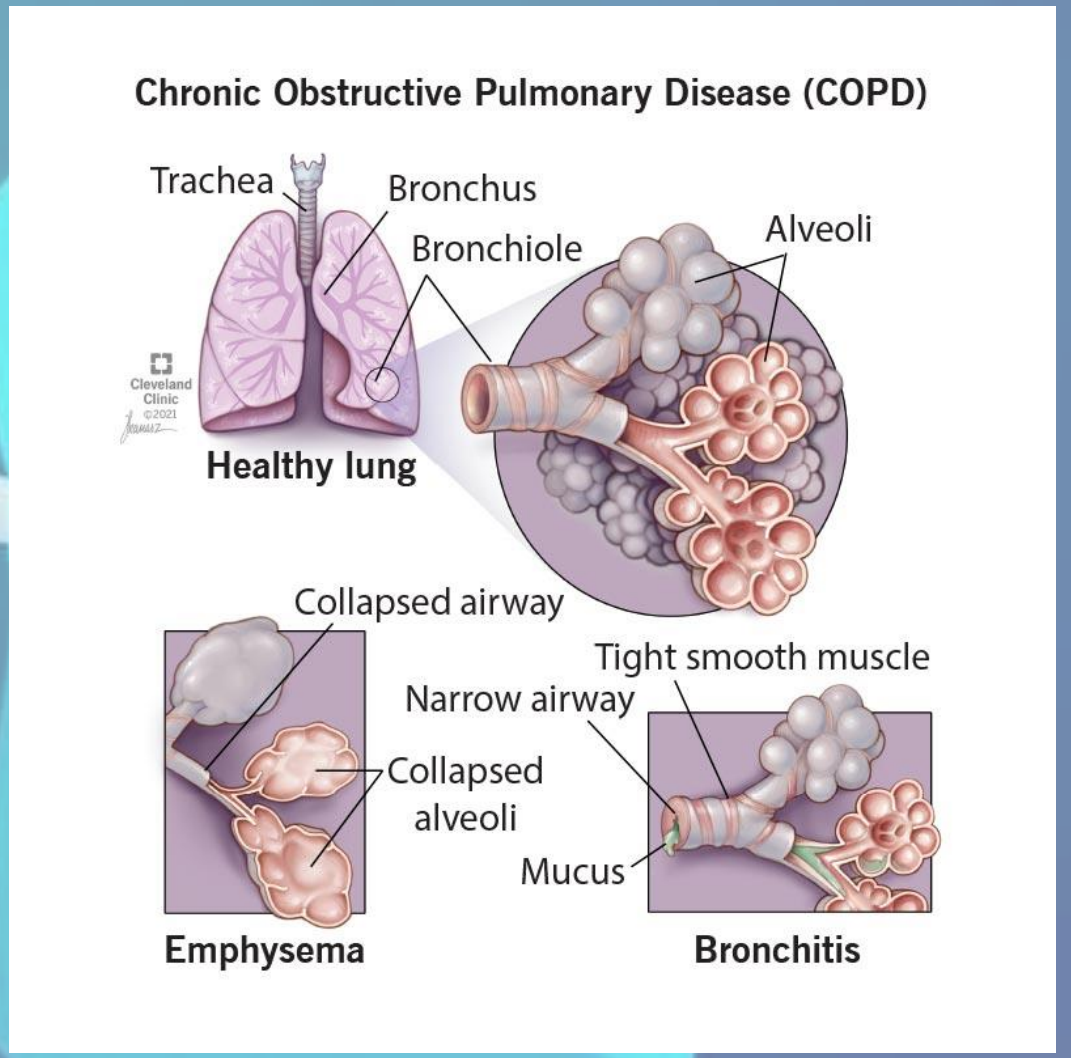
Chronic Obstructive Pulmonary Disease (Big Picture)

- Chronic Inflammation
- Two Core Pathologic Processes
- Parenchymal destruction(emphysema)
- Protease-Antiprotease imbalance
- Oxidative Stress
- Mucous Hypersecretion
- Airflow limitation
- Gas exchange abnormalities
- Systemic effects



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Diagnosis is KEY!

- **Post bronchodilator-Spirometry**
  FEV1/FVC <0.70-Confirms persistent Airflow limitation
- **CAAT Assessment**
- **Symptoms-exacerbation history**
- **Risk Factors**
  - **Smoking status**
  - **Blood eosinophil count**
  - **comorbidities**

CAAT™ Assessment

Figure 2.12

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	0 X 2 3 4 5	I am very sad	Score
I never cough	0 1 2 3 4 5	I cough all the time	
I have no phlegm (mucus) in my chest at all	0 1 2 3 4 5	My chest is completely full of phlegm (mucus)	
My chest does not feel tight at all	0 1 2 3 4 5	My chest feels very tight	
When I walk up a hill or one flight of stairs I am not breathless	0 1 2 3 4 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	0 1 2 3 4 5	I am very limited doing activities at home	
I am confident leaving my home despite my lung condition	0 1 2 3 4 5	I am not at all confident leaving my home because of my lung condition	
I sleep soundly	0 1 2 3 4 5	I don't sleep soundly because of my lung condition	
I have lots of energy	0 1 2 3 4 5	I have no energy at all	

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

TOTAL SCORE: ☐

CAT™ has been renamed as the Chronic Airways Assessment Test CAAT™; CAT™ and CAAT™ are equivalent and the scores are interchangeable.

MMRC

Modified Medical Research Council Scale- Dyspnea Scale

Grade – 0

Grade- 1

Grade- 2

Grade- 3

Grade- 4

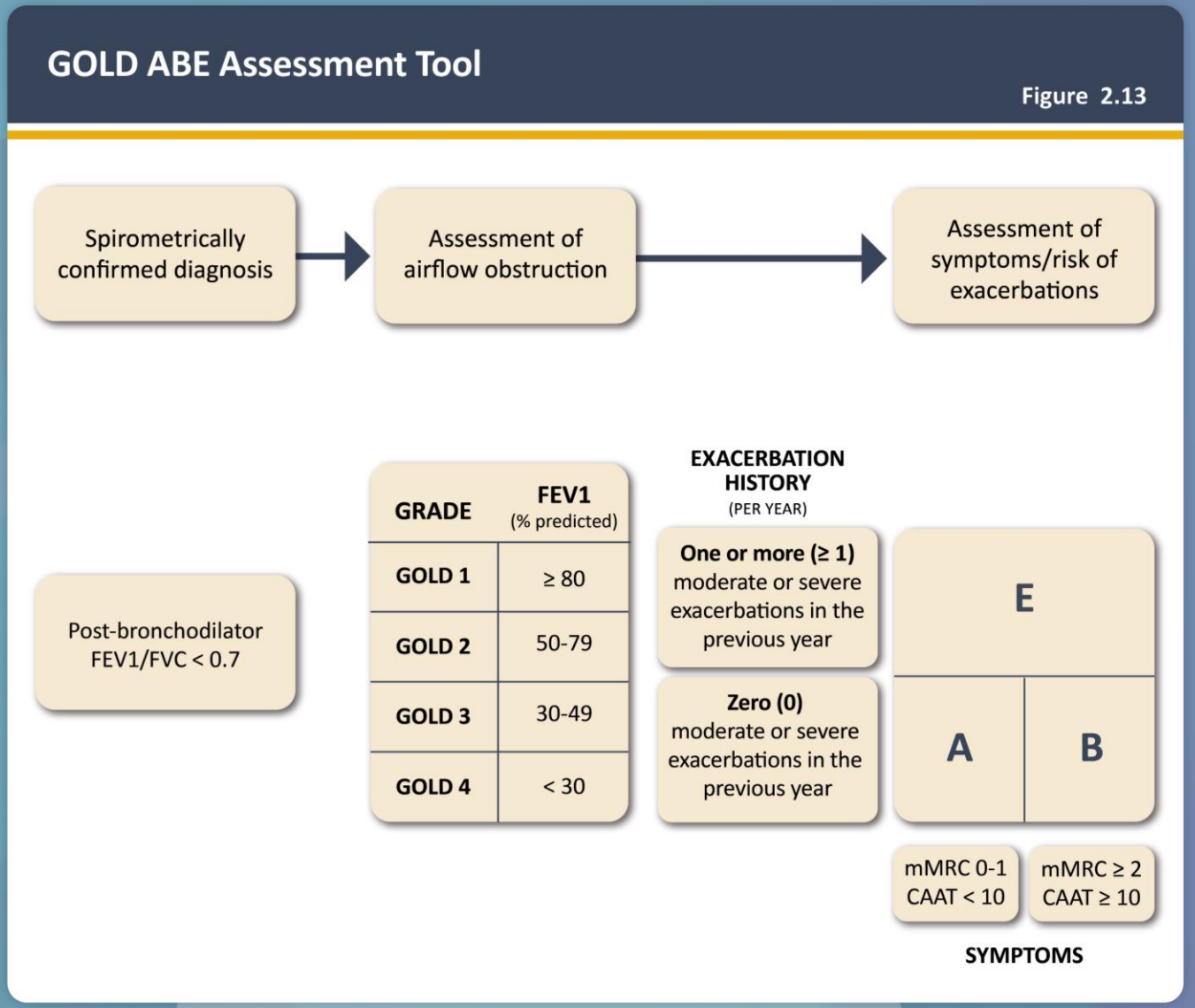
Combine MMRC with CAAT, easy to score and get an idea of risk stratification.

Modified Medical Research Council scale (MMRC)

Description of Breathlessness	Grade	Score
I only get breathless with strenous exercise	0	None
I get short of breath when hurrying on level ground or walking up a slight hill	1	Slight
On level ground, I walk slower than people of the same age because of breathlessness, or have to stop for breath when walking at my own pace.	2	Moderate
I stop for breath after walking about100 yards or after a few minutes on level ground	3	Severe
I am too breathless to leave the house or I am breathless when dressing.	4	Very severe

GOLD ABE Assessment

- **Spirometry confirmed diagnosis**
- **Assessment of Airway flow obstruction**
- **Assessment of symptoms/risk of exacerbations**
- **Post bronchodilator FEV1/FEV< 0.7**



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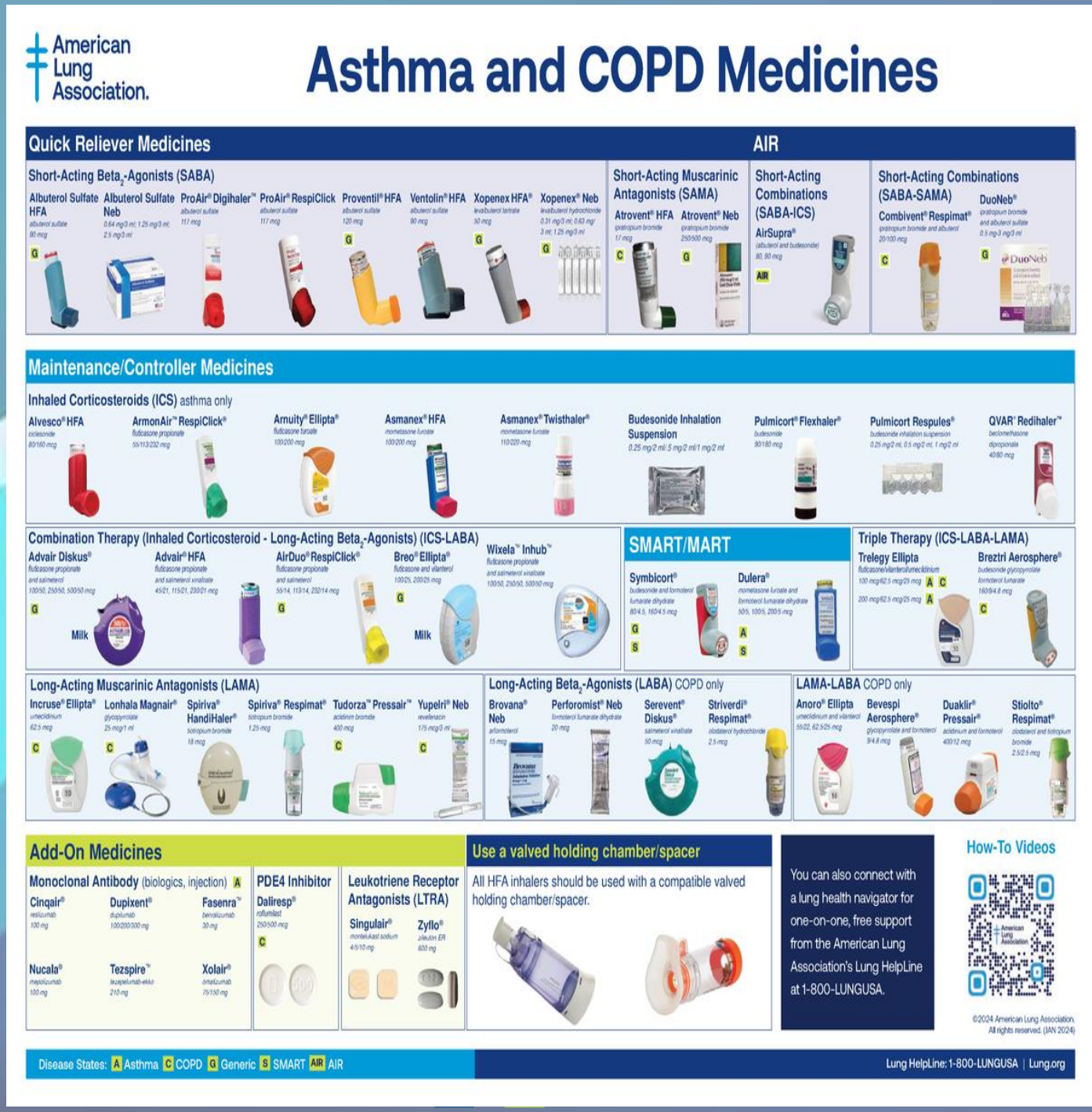
Medications for COPD

- **Bronchodilators short acting- SABA**
- **Long acting bronchodilator-LABA**
- **Long acting muscarinic antagonists-LAMA**
- **Inhaled Corticosteroids-ICS**
- **Combo medications-LABA/LAMA, LABA/ICS**

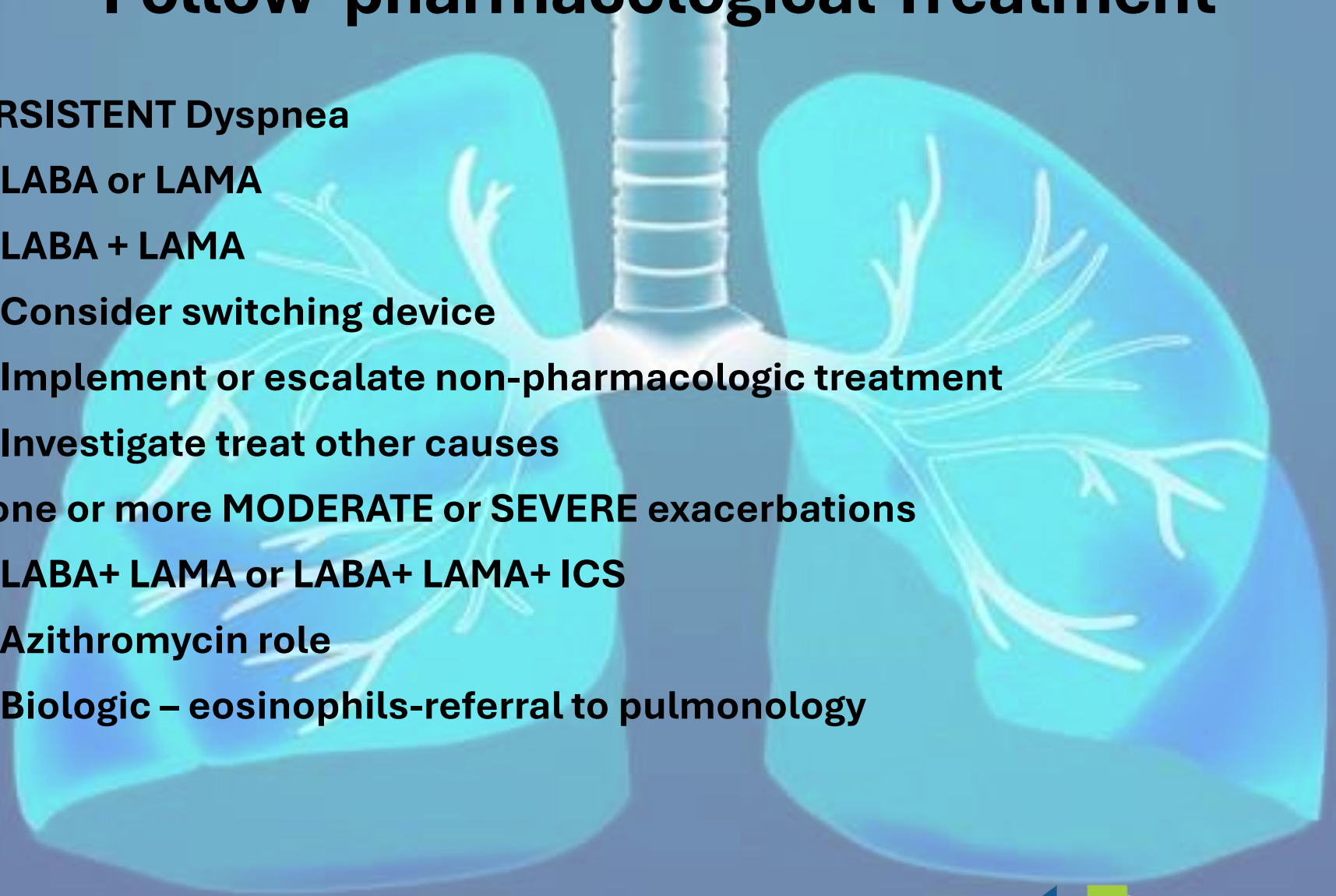


Treatment Guidelines
Initial Treatment-COPD who are naïve to maintenance therapy

- Exacerbation history
  (PER YEAR-Prior year)
- 1 or More moderate or severe exacerbations in the previous year
  - LABA + LAMA
    (CONSIDER LABA + LAMA + ICS if blood eosinophil is > or equal to 300

- ZERO moderate or severe exacerbations
  (Prior Year)
  - mMRC 0-1, CAAT less than 10-Bronchodilator
  - mMRC > or equal to 2, CAAT > or equal to 10- LABA + LAMA

Follow-pharmacological Treatment



PERSISTENT Dyspnea

- **LABA or LAMA**
- **LABA + LAMA**
- **Consider switching device**
- **Implement or escalate non-pharmacologic treatment**
- **Investigate treat other causes**

IF one or more MODERATE or SEVERE exacerbations

- **LABA+ LAMA or LABA+ LAMA+ ICS**
- **Azithromycin role**
- **Biologic – eosinophils-referral to pulmonology**

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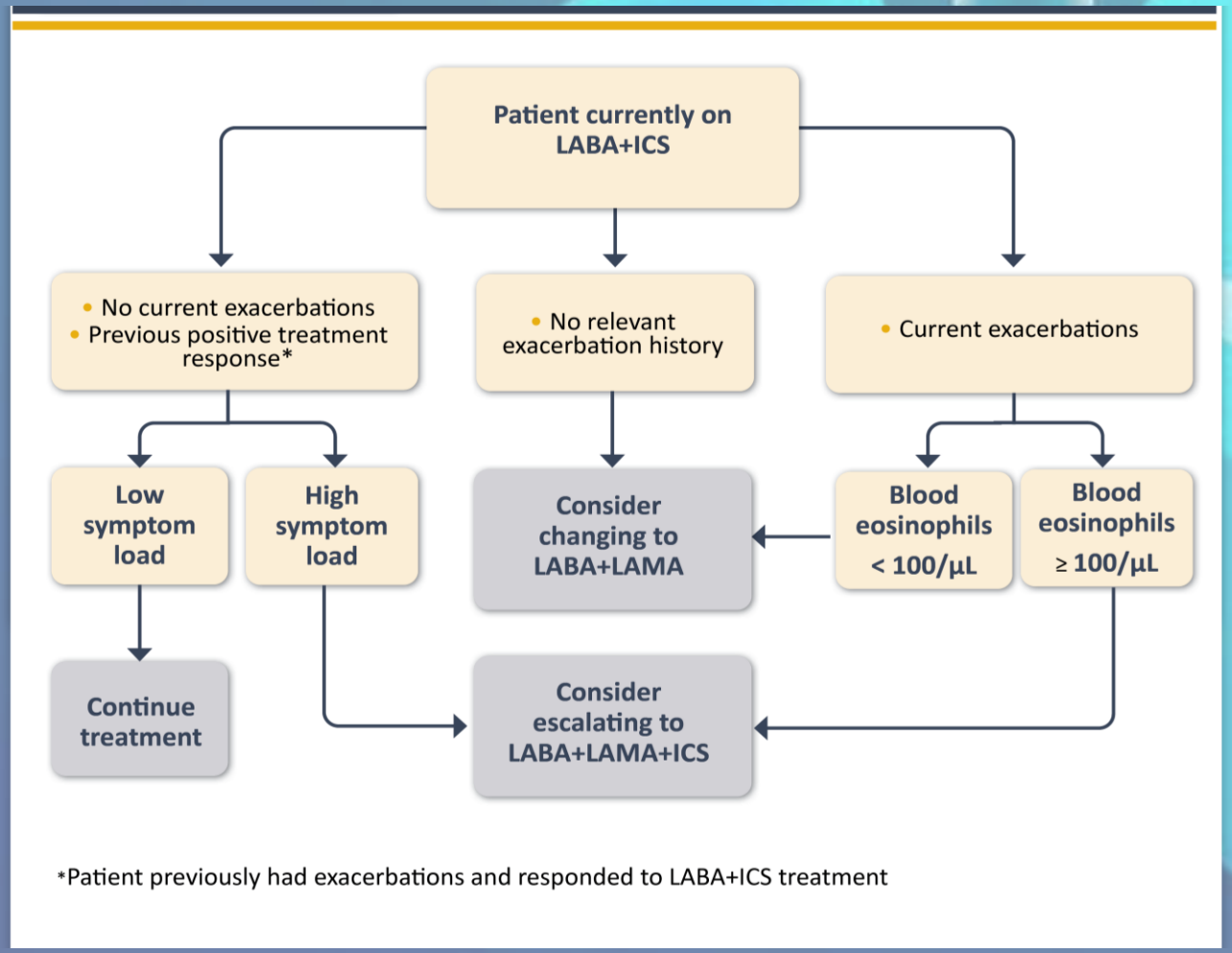
CURRENTLY on LABA +ICS



COPD meds

- **Biologics-Role with eosinophilic COPD-monoclonal antibodies**
- **Leukotriene receptor agonists-More for allergic asthma component**
- **Mucolytics**
- **Steroids**
- **Nebulized options**

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Factors to consider when adding ICS to therapy

Strongly Favor use

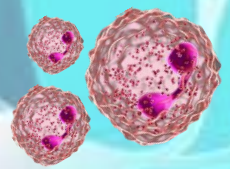
- History of hospitalizations for COPD exacerbations
- Greater than or equal to 2 moderate exacerbations of COPD per year
- Eosinophils greater than 300
- History of or concomitant asthma

Favor use

- 1 moderate exacerbation COPD per year
- Blood eosinophils greater than 300 cells

Against Use

- Repeated pneumonia
- Blood eosinophils greater than 100
- History of mycobacterial infection



Blood eosinophils

≥300

cells/µL

↑ 32%

increased risk of COPD exacerbations[23,f]

↑ 99%

increased risk of COPD-related rehospitalization within 1 year[24,g]

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Scenarios

71 year old smoker with 50 + pack years, CAT score 14, MMRC 3 but no recent hospitalizations

- LABA + LAMA therapy initial to relieve symptoms

64 year old female with severe COPD FEV1 64%, multiple hospitalizations CAT-28

- LABA/LAMA ICS-Pulmonary referral
- Non pharmacological
- Mucolytics

57 year old with chronic cough, productive sputum smoking history, but with bronchodilator response PFT

- Asthma overlap COPD ICS/LABA to address asthma component

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Exacerbation management

- History, History, History
- Testing-Viral/bacterial cultures
- Treating appropriate antiviral/abx
- Steroid taper
- Mucolytics
- Azithromycin/Levaquin/Doxy
- Increase or return to nebulizers
- Acapella device
- Assess other causes
  - CHF
  - Core Pulmonale
  - PE risk
  - Viral/bacterial infection

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Medication adverse effects/Contraindications

Short-Acting Beta Agonists-SABA

- Fast Heart rate
- Arrhythmia
- Shakiness/nervousness
- Anxiety/insomnia

Long-Acting Beta Agonists-LABA

- Muscle cramps
- Tremor
- Increased heart rate/arrhythmias

Inhaled Corticosteroids-ICS

- Oral thrush
- Hoarseness
- Increased pneumonia risk

Oral corticosteroids

- Weight gain
- High blood sugar
- Mood swings
- Osteoporosis
- Brusing/thin skin/muscle wasting

I

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Further Medication considerations

- Cardiac issues- Short acting anticholinergic agents-LABA should be used cautiously with cardiac history
- Eyes LAMA-Anticholinergic may increase intraocular pressure, potentially worsening narrow angle glaucoma
- Medication interactions-Non selective beta-blockers propranolol should be avoided can worsen breathing
- Respiratory depressants-Sedatives can exacerbate sleep apnea a common co-morbidity in COPD patients
- ARB’s and ACE- Cautiously use-HISTORY!!!

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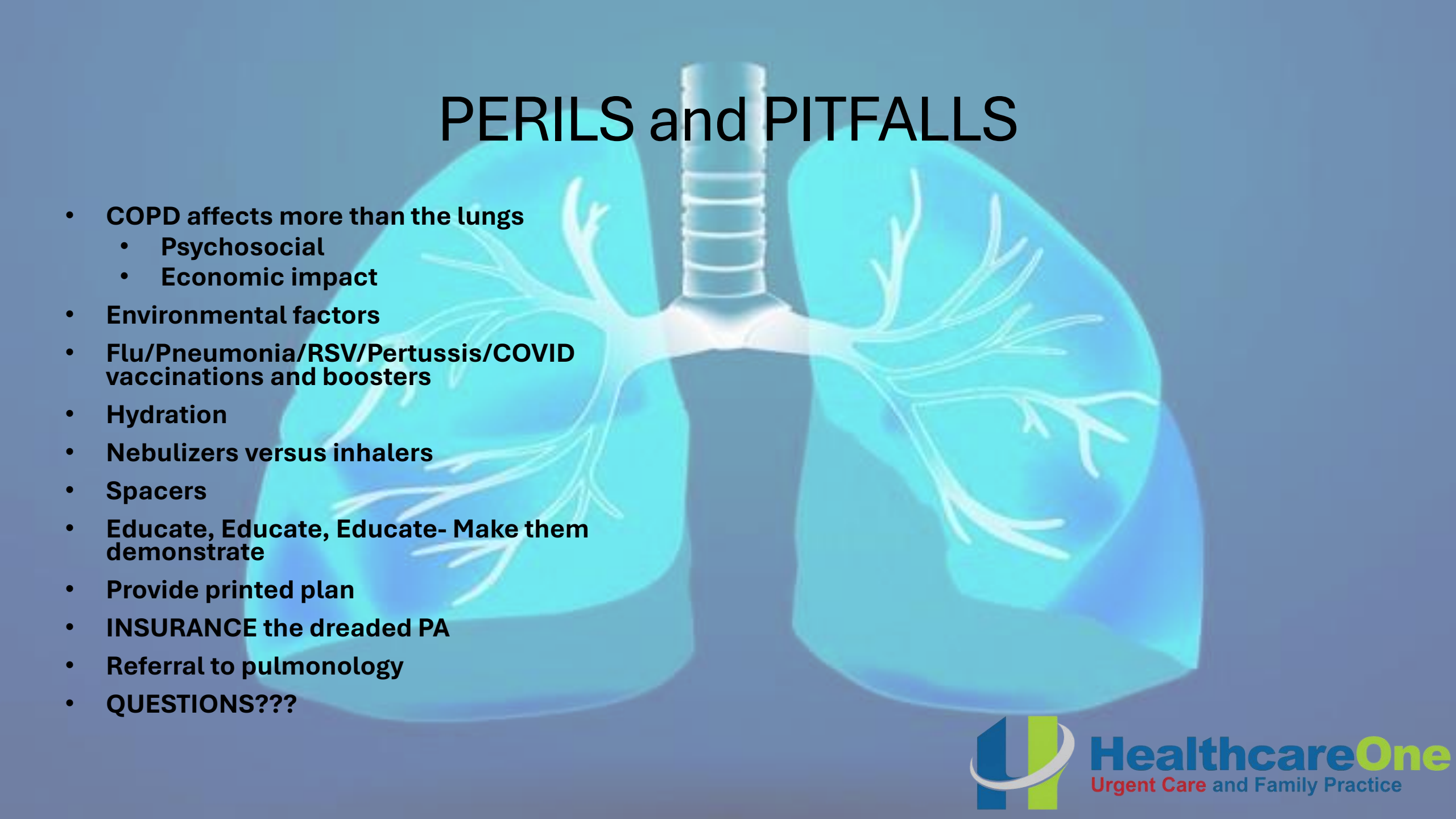
PERILS and PITFALLS



- COPD affects more than the lungs
  - Psychosocial
  - Economic impact
- Environmental factors
- Flu/Pneumonia/RSV/Pertussis/COVID vaccinations and boosters
- Hydration
- Nebulizers versus inhalers
- Spacers
- Educate, Educate, Educate- Make them demonstrate
- Provide printed plan
- INSURANCE the dreaded PA
- Referral to pulmonology
- QUESTIONS???

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References

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