# President’s update

MONTANA ACADEMY
OF FAMILY PHYSICIANS

# Coughing up the evidence

Why we need to stop blaming everything on GERD

# Objectives

1

**By the end of this presentation, participants will be able to:**

2

**Classify** cough by duration and recall the most common causes for each category.

3

**Identify** "red flags" that warrant immediate and extensive workup.

4

**Recognize** the clinical presentation, diagnosis, and empiric treatment for **Upper Airway Cough Syndrome (UACS)**

# Why worry about coughs…

Most common symptom: Cough is one of the top reasons for primary care visits

Quality of life: Chronic cough significantly impairs sleep, work, social life, and can cause physical symptoms (e.g. urinary incontinence and syncope)

Healthcare utilization: Leads to multiple office visits, specialist referrals and high diagnostic testing cost

# Cough Classification Overview

- **Acute Cough**

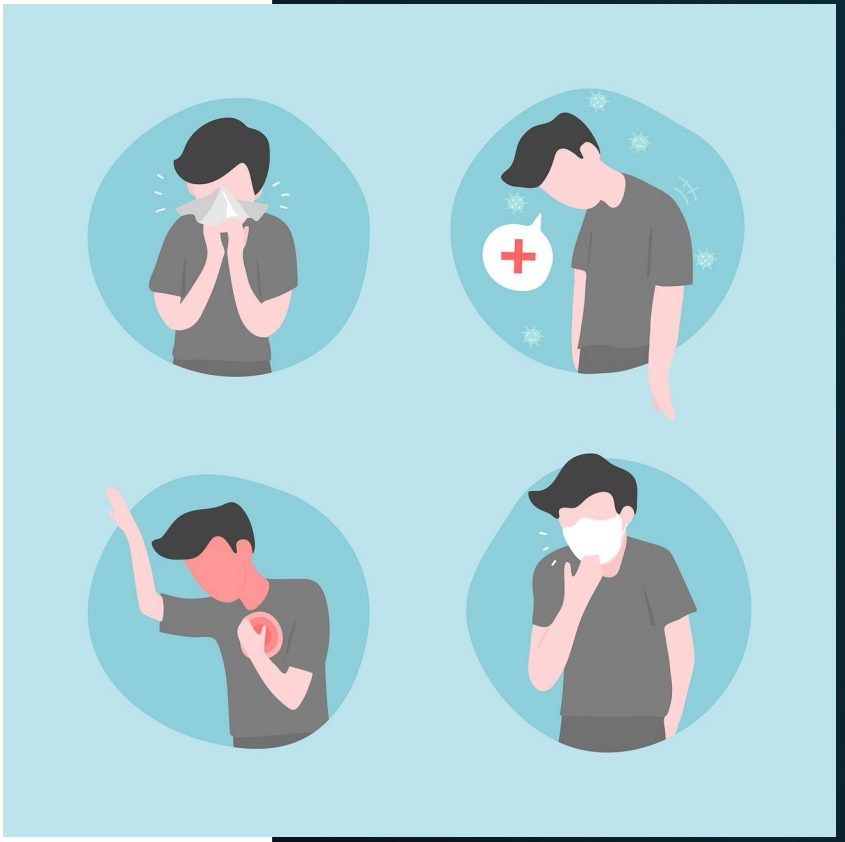
- Acute cough lasts less than 3 weeks, most often caused by infections such as the common cold.

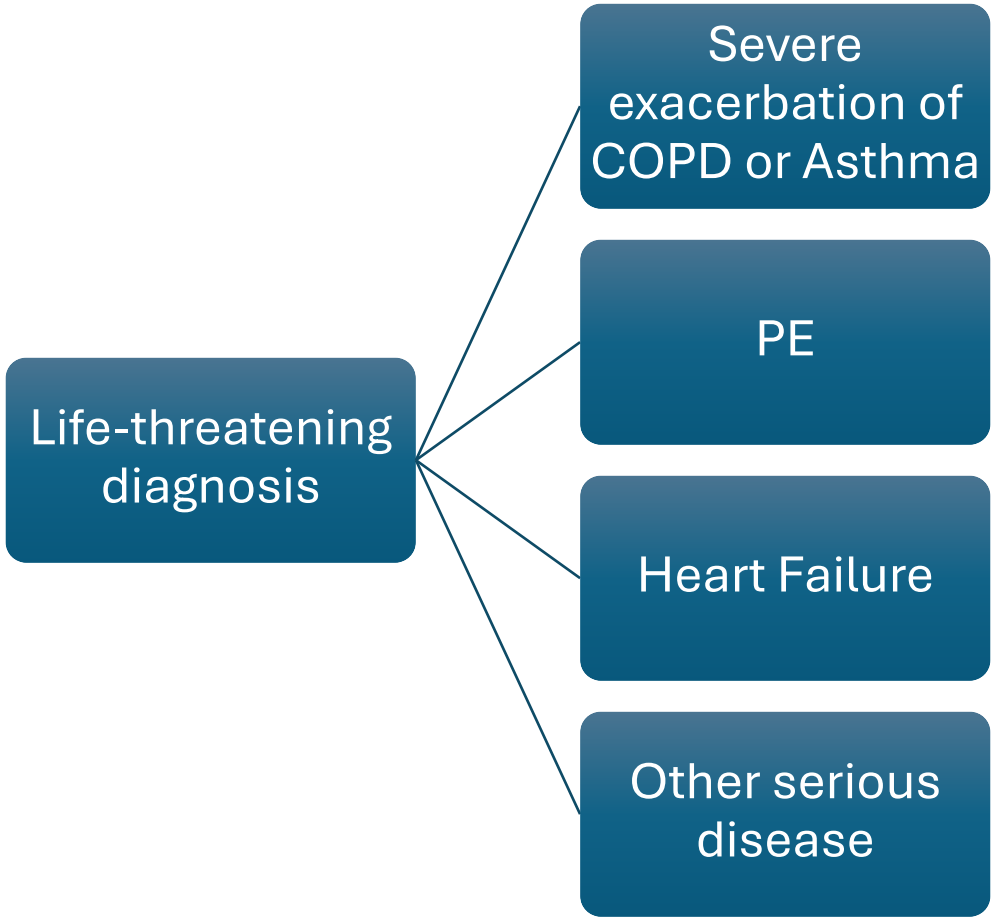
- **Subacute Cough**

- Subacute cough persists for 3 to 8 weeks, usually following a respiratory infection or illness.

- **Chronic Cough**

Chronic cough lasts over 8 weeks and may signal underlying conditions like asthma, GERD, or chronic bronchitis.



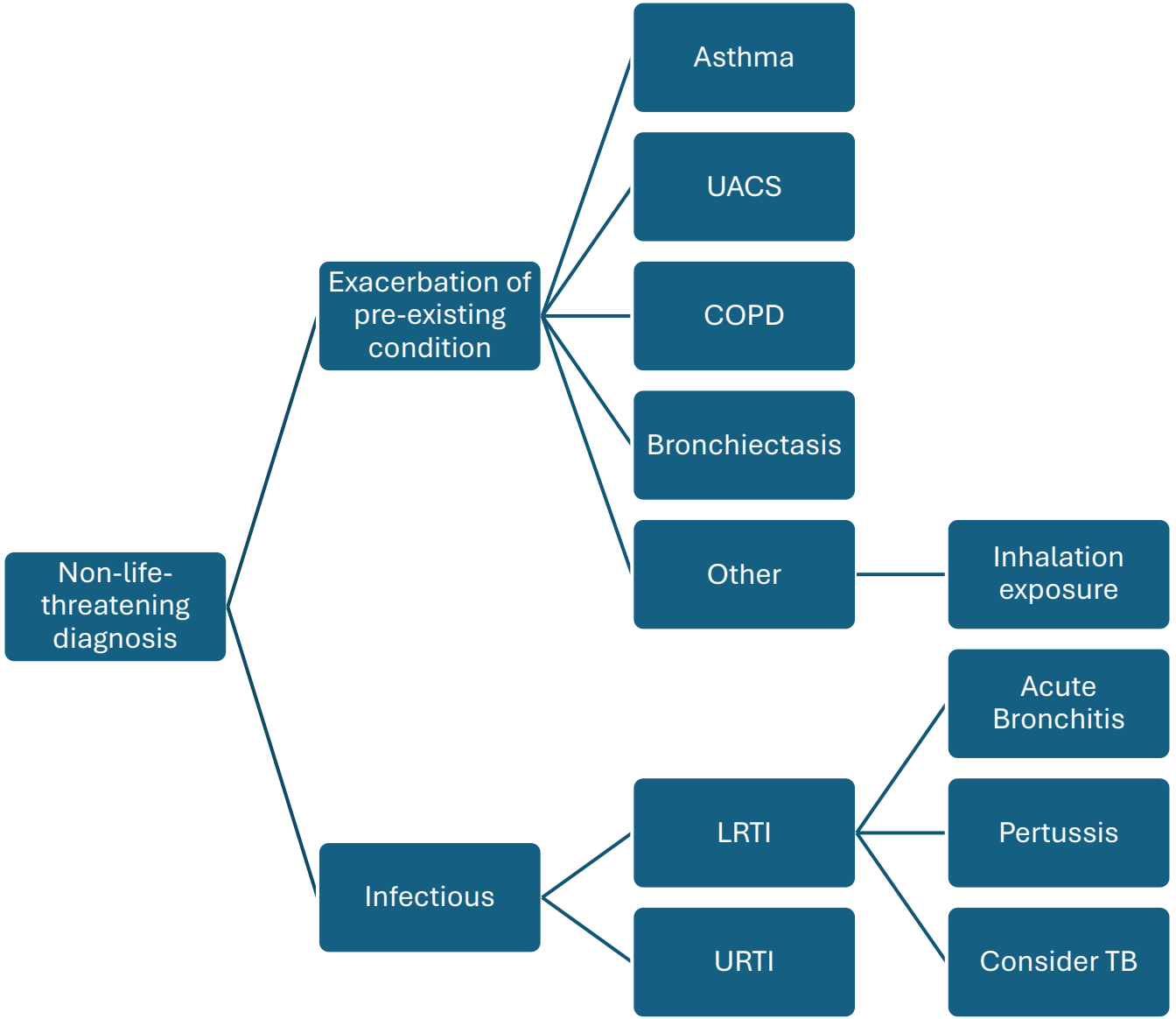



# Red flag symptom

- Hemoptysis
- Prominent dyspnea, especially at rest or at night
- Smoker > 45 years of age with new cough, change in cough or coexisting voice disturbance
- Adults 55-80 years old with a 30 pack year smoking history and currently smoke or who have quit within 15 years
- Hoarseness
- Systemic symptoms
- Trouble swallowing when eating or drinking
- Vomiting
- Recurrent pneumonia
- Abnormal respiratory exam or chest radiograph

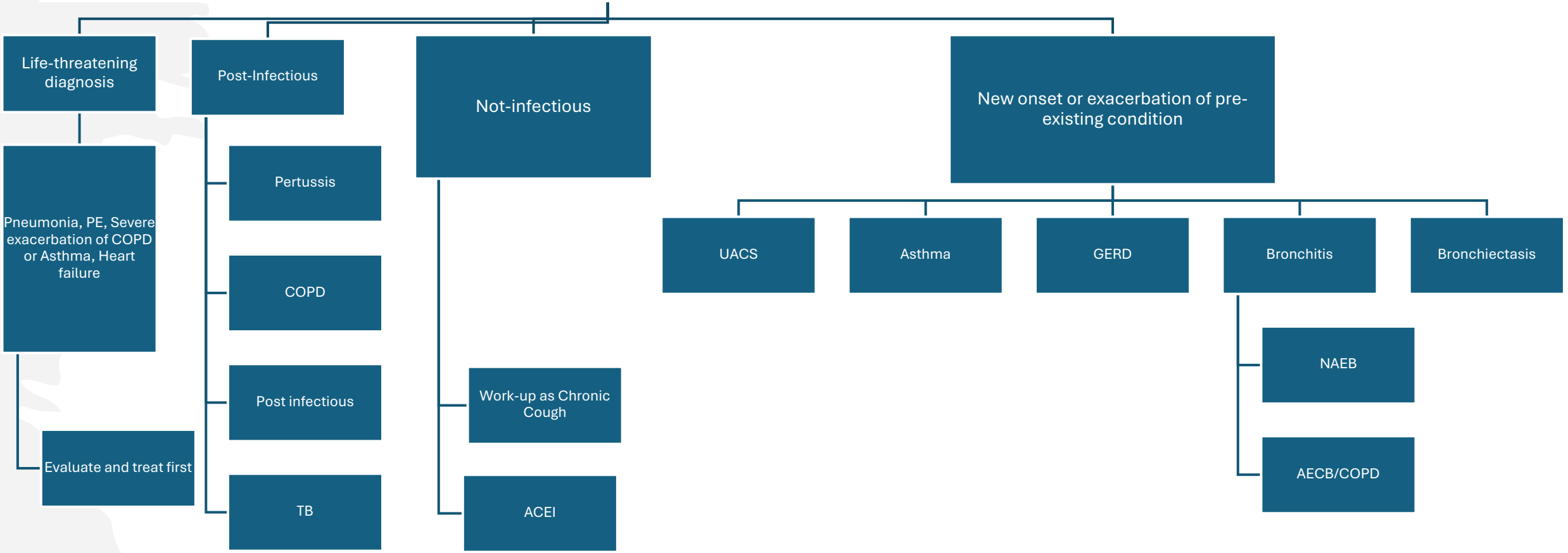
CHEST Expert cough Panel* et al. 2018

# Approach to Acute Cough (<3 weeks)




CHEST Expert cough Panel* et al. 2018

# Subacute Cough (3-8 weeks)

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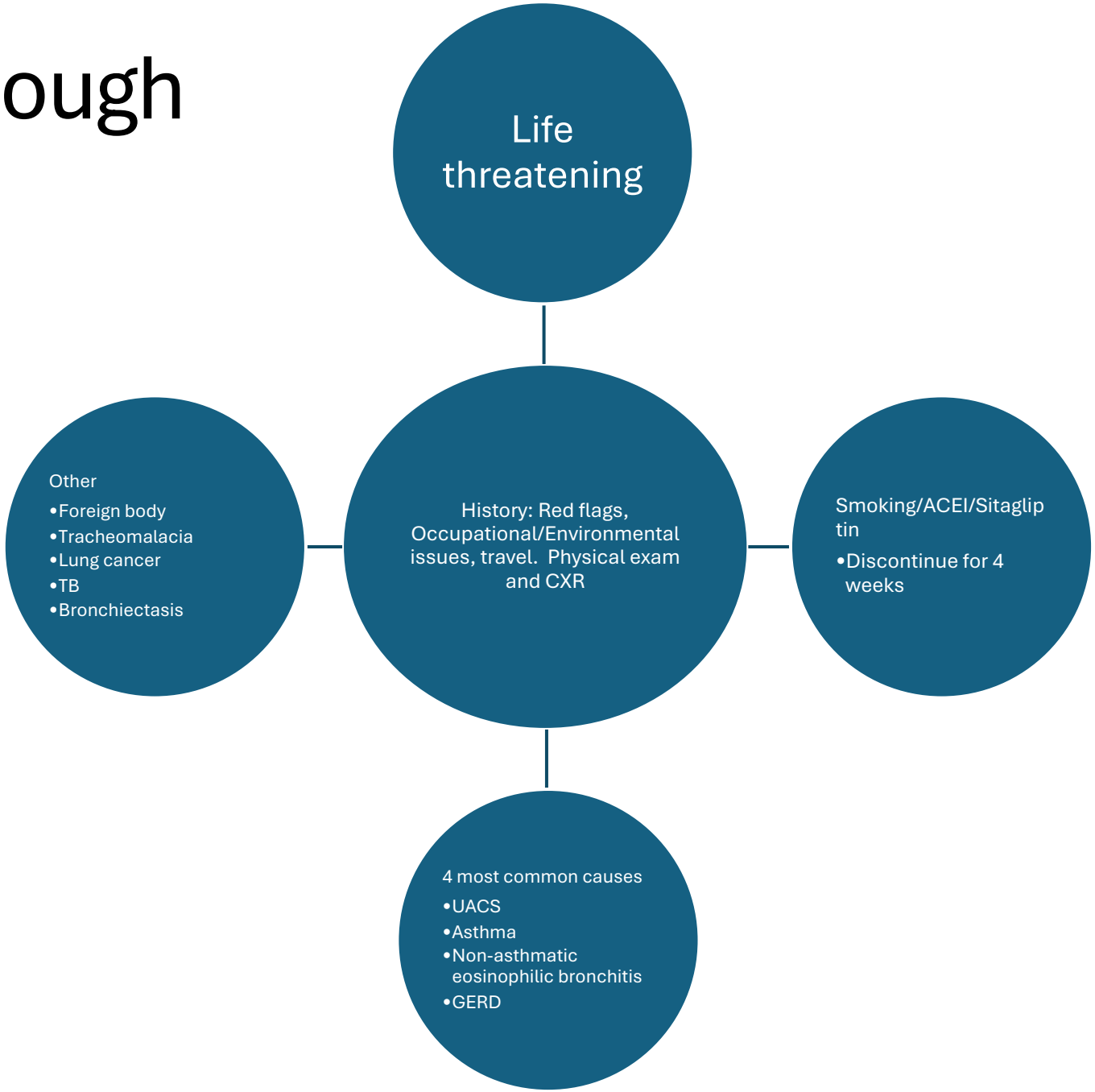
# Chronic cough




CHEST Expert cough Panel* et al. 2018

The Doctor, Luke Fildes 1891. Oil on Canvas

# Cornerstone of diagnosis

**Thorough history and physical exam**

**Characteristic of the cough**

Wet vs Dry

**Aggravating factors**

**Supine position, worsening with exertion, relation to meals**

**Time of day (worse in the morning)**

**Associated symptoms**

Heartburn, halitosis, itchy nose and eyes, throat clearing, hoarse voice, hemoptysis, dyspnea, weight loss

**Co-morbidities**

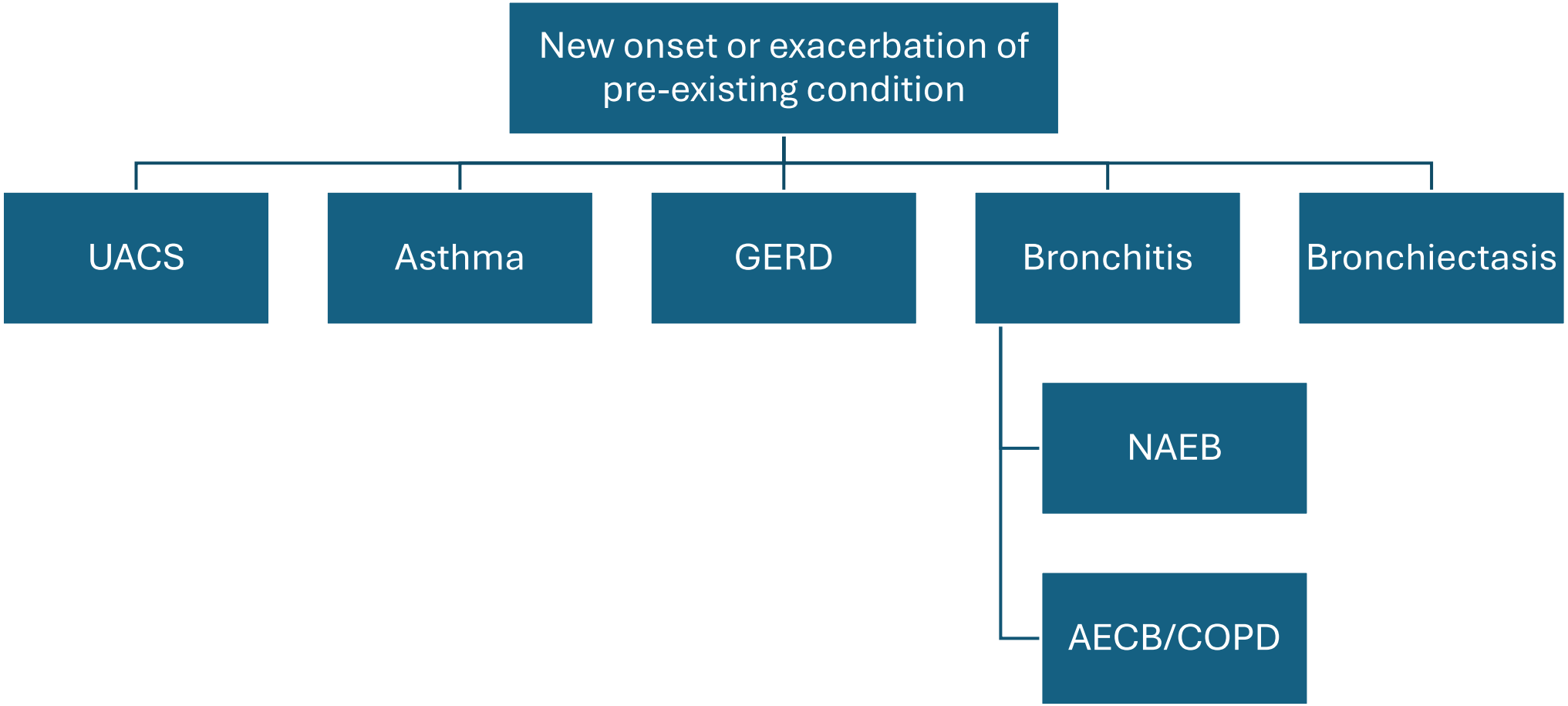
**Smoking habits**

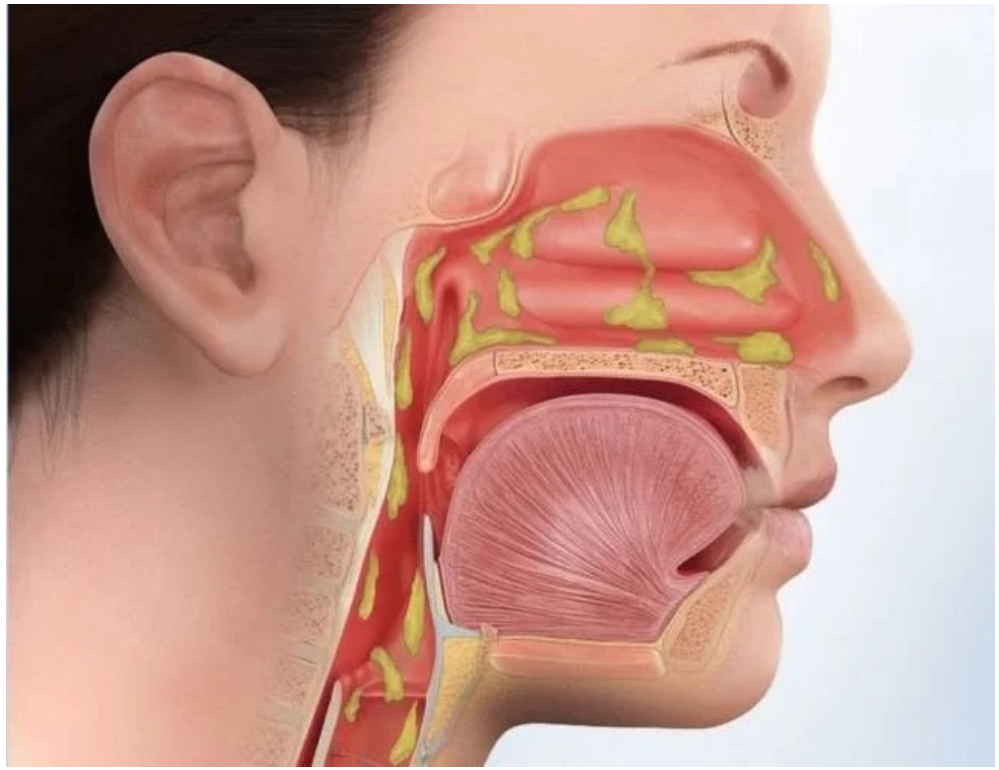
**Travel**

**Occupational exposures**

# Focus on Subacute and Chronic cough

# Subacute cough





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# Upper Airway Cough Syndrome

**Also known as Post-nasal drip**

Upper airway cough syndrome is a primary cause of subacute and acute cough.

**Sensory Nerve Hypersensitivity**

UACS involves hypersensitive sensory nerves in the upper or lower airway, making patients prone to persistent coughing.

**Impact on Quality of Life**

Chronic coughing from UACS significantly affects patients' daily life and overall well-being.

**Etiology**

Rhinitis (allergic, vasomotor, post-infectious, rhinitis medicamentosa, perennial non-allergic), Acute nasopharyngitis (”Common Cold”), sinusitis

# Pathophysiology of UACS

**The exact mechanism remains unclear, but several pathways play a role in triggering cough**

**Stimulation of Cough Receptors**

Postnasal drip activates cough receptors, leads to the release of inflammatory mediators, causes inflammation in both upper and lower airways, and sensitizes the cough reflex.

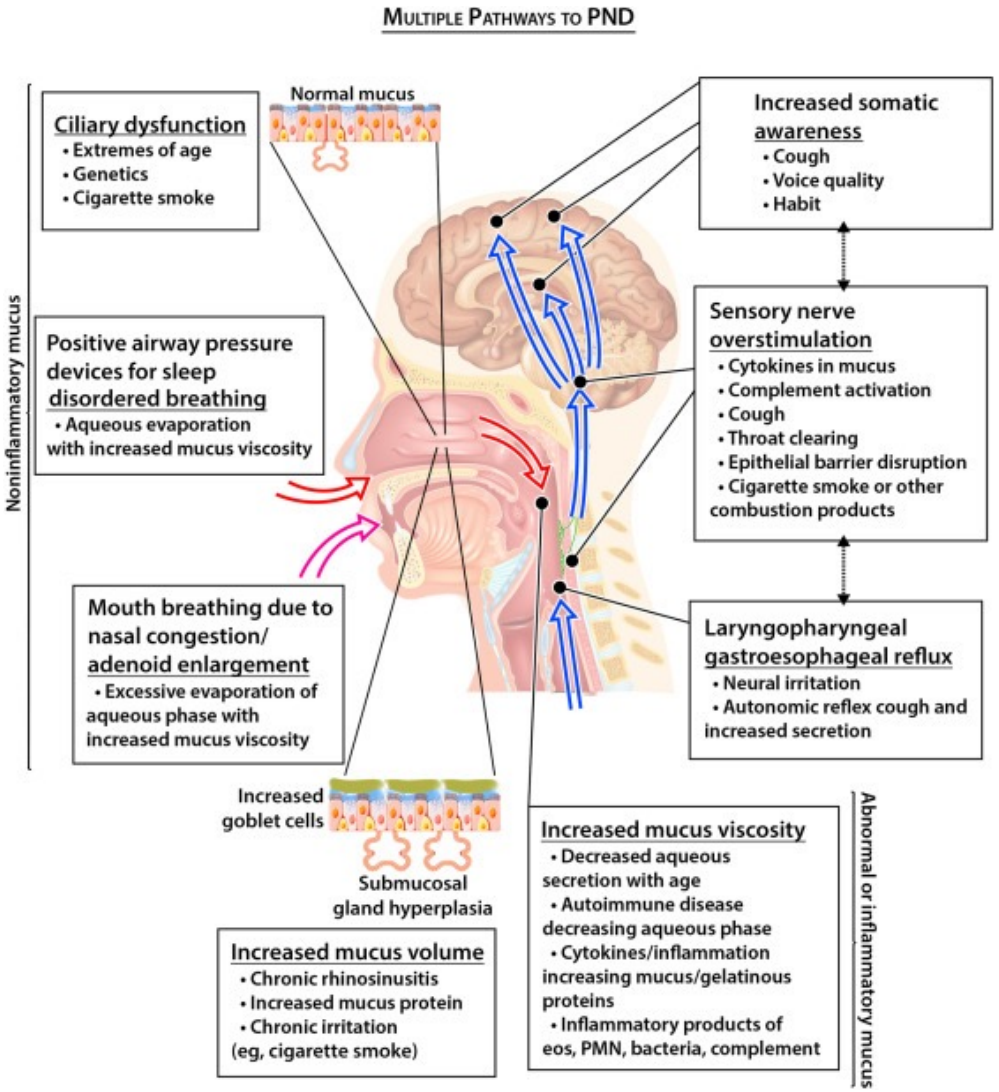
**Hypersensitivity of Sensory Nerves**

Coughing is not caused by postnasal drip alone but results from **increased sensitivity of sensory nerves in the upper airway, lower airway, or both**.

Trigeminal afferent pathways from the upper airways may reduce the threshold of the central cough pattern generator, making it more responsive to subsequent vagal afferent signals.

**Non-harmful stimuli from the lower airways can trigger coughing**

**Nasal secretions stimulate vagal afferent fibers in the posterior pharyngeal wall and larynx, leading to inflammation**




The Journal of Allergy and Clinical Immunology. 2024

# Common Symptoms of UACS

**Nasal and Throat Discomfort**

UACS commonly causes rhinorrhea, nasal congestion, throat clearing.

**Persistent Dry Cough**

A frequent, dry cough occurs, especially when exposed to cold air or during speaking, often disrupting daily activities.

**Morning Mucus and Throat Clearing**

Abundant mucus in the morning and frequent throat clearing are common, especially when lying down.

**Asymptomatic Cases**

Notably, about 20% of patients with UACS may have no noticeable symptoms at all.

**Physical Exam**

Secretions in posterior nasopharynx

Cobblestoning of mucosa

Edematous and erythematous turbinates in the nostrils

# Asthma and Cough Variants

### Typical Asthma Symptoms

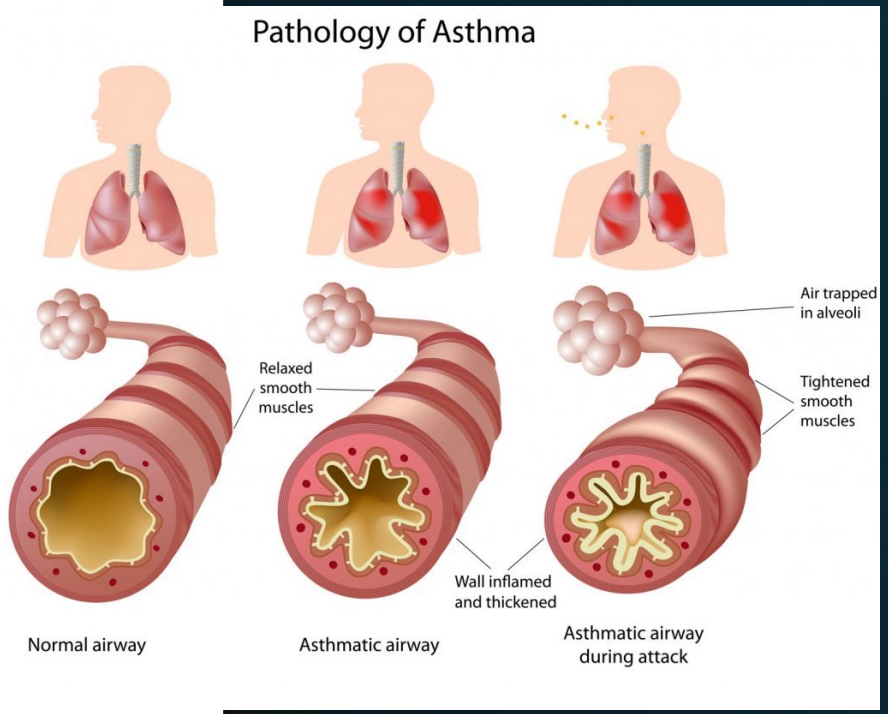
Asthma often presents with cough, wheezing, and shortness of breath due to airway inflammation and obstruction.

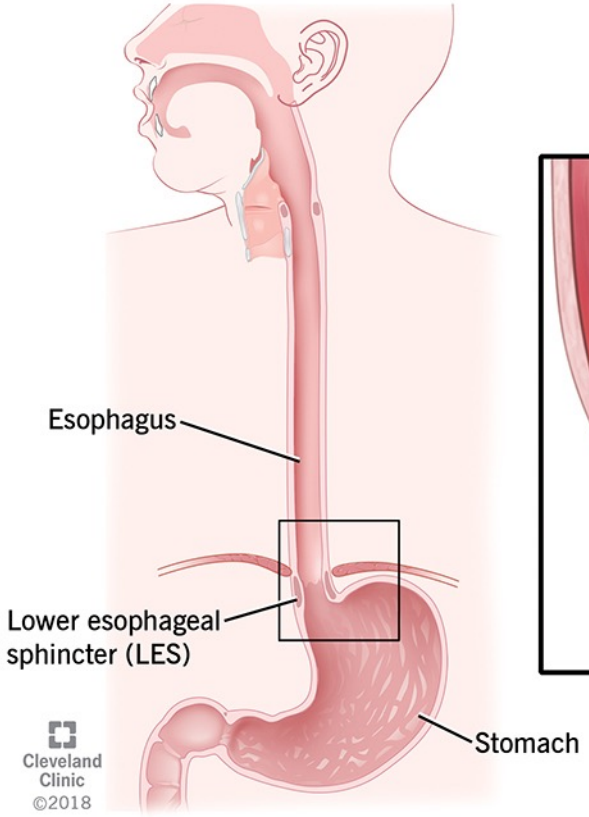
### Cough-Variant Asthma Features

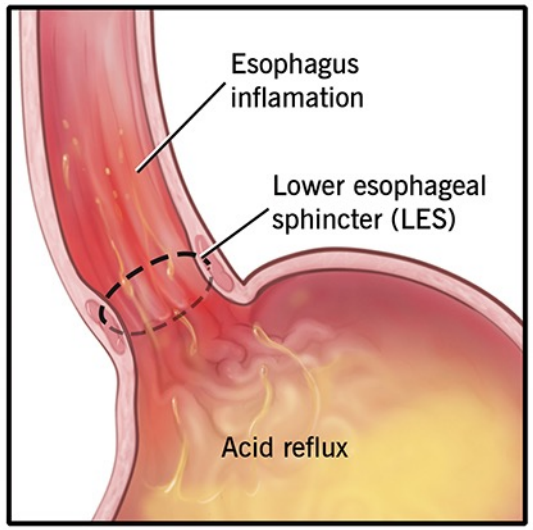
Cough-variant asthma may start as a persistent cough, later adding wheezing and dyspnea

### Evaluation

Spirometry, bronchodilator reversibility, bronchoprovocation challenge (methacholine challenge).






www.cleavalandclinic.org

# GERD and Laryngitis

**Typical Symptoms of GERD**

Heartburn

Sour taste

Halitosis

Voice changes

Throat clearing

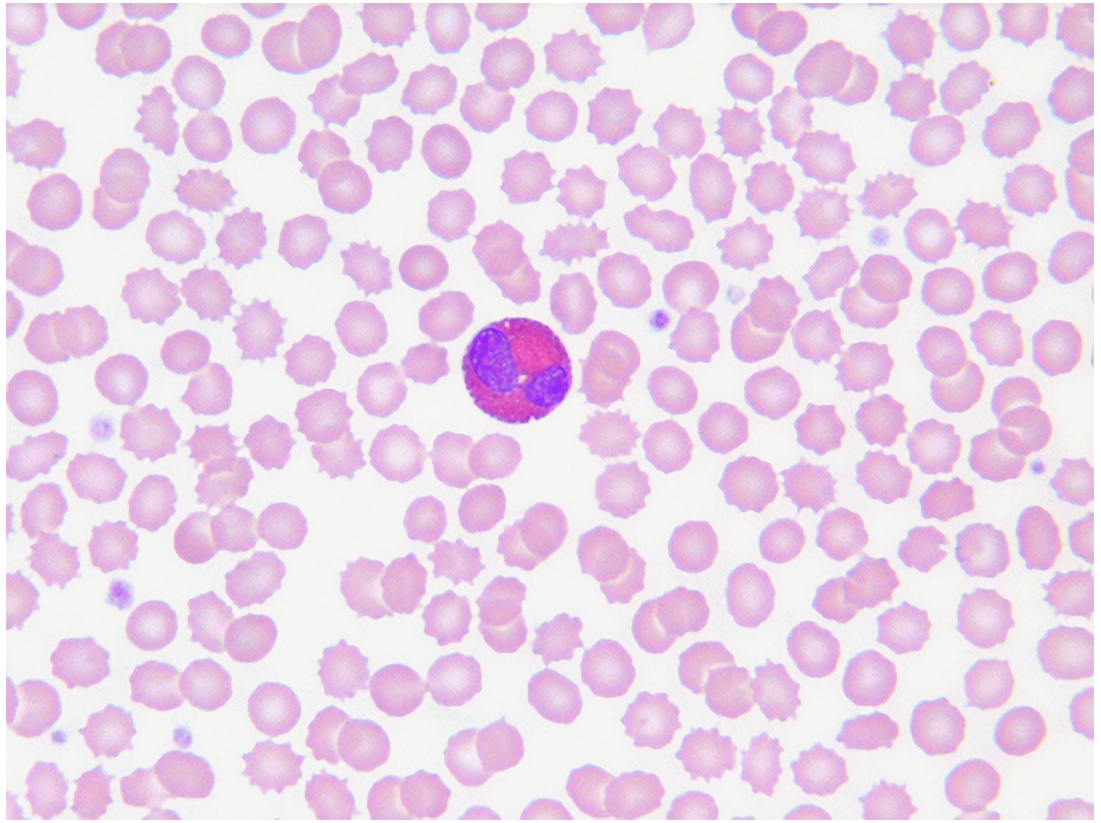
**Symptomless Cases**

Up to 40% of reflux patients show no symptoms, which may make diagnosis more difficult.

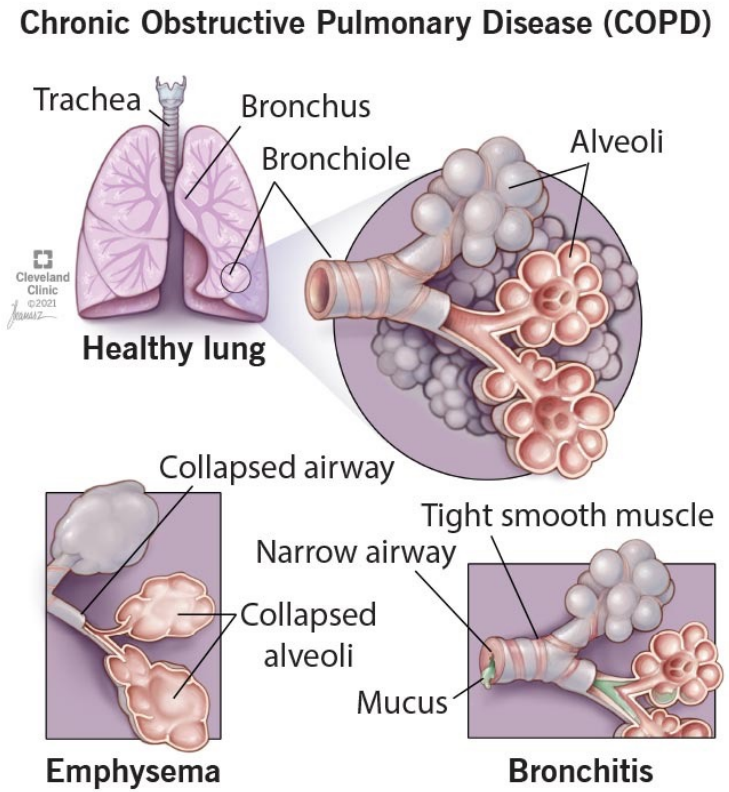
Physiologic testing for refractory patients

# Non-Asthmatic Eosinophilic Bronchitis

- 13-33% of patients
- Diagnosis
  - High eosinophilic counts in sputum
  - Increased exhaled nitric oxide levels
- Consider early in diagnostic evaluation
- Improved with inhaled steroids



# COPD/Acute exacerbation of chronic bronchitis

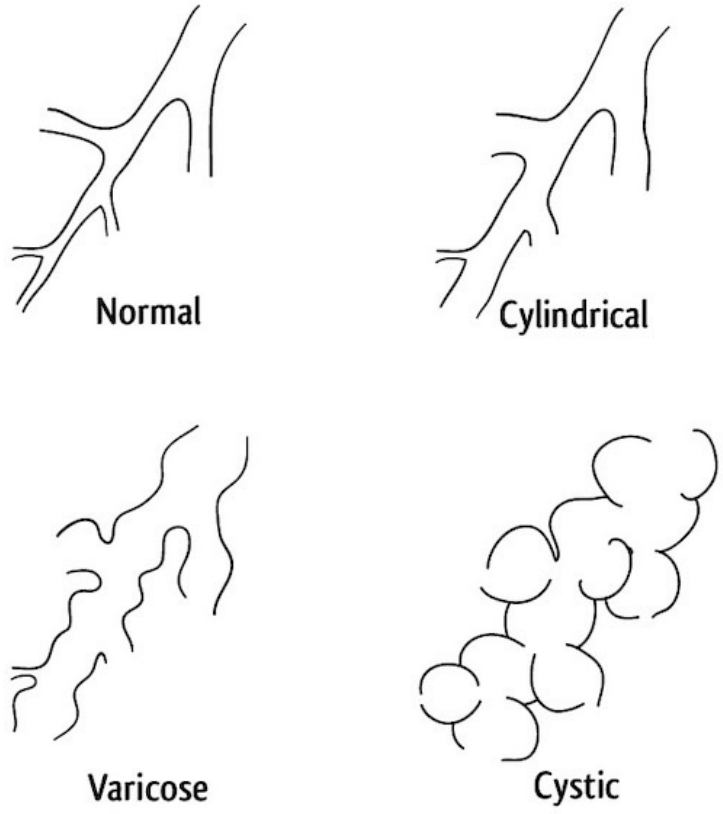



The Cleveland Clinic

- Increased coughing, severity, frequency
- Increased sputum
- Worsening dyspnea
- Fatigue, chest tightness, difficulty sleeping
- Triggers
  - Infection, environmental pollution, allergies

# Bronchiectasis

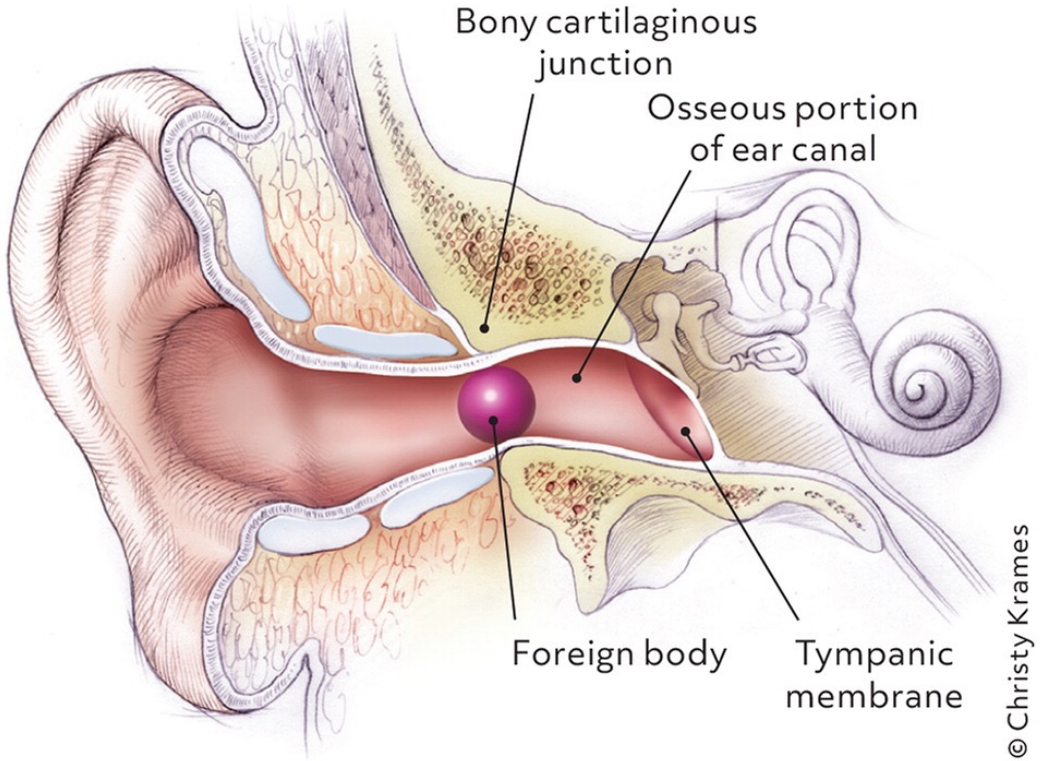
- Cough is often productive for copious mucopurulent sputum
- May be diffuse or regional
- On auscultation-adventitial sounds
- Digital clubbing




**Morphological types of bronchiectasis (illustration)**

# Foreign body

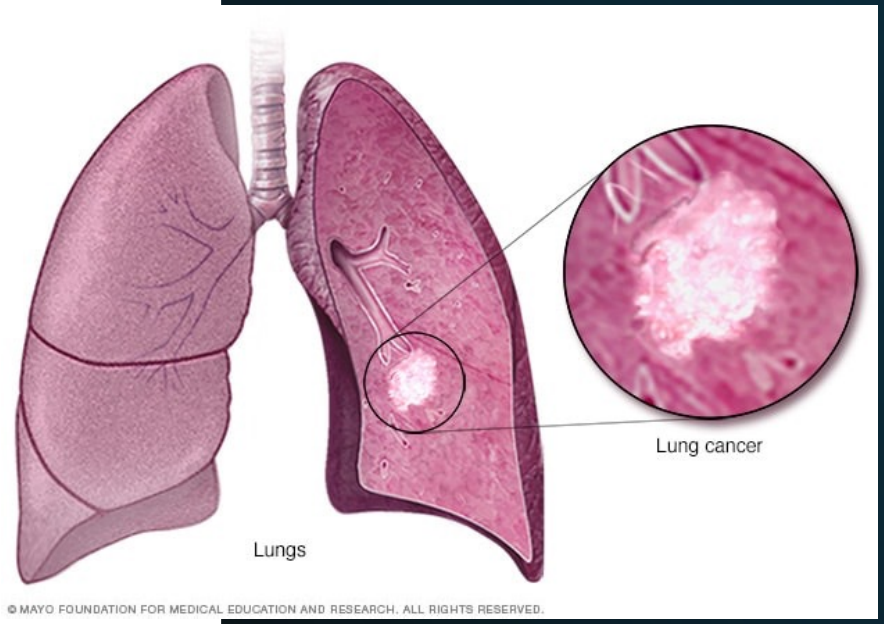
- Presents
  - Persistent cough
  - Recurrent pneumonia
- Location
  - Tracheobronchial tree
  - Auditory canal (stimulation of the auricular branch of the vagus nerve)

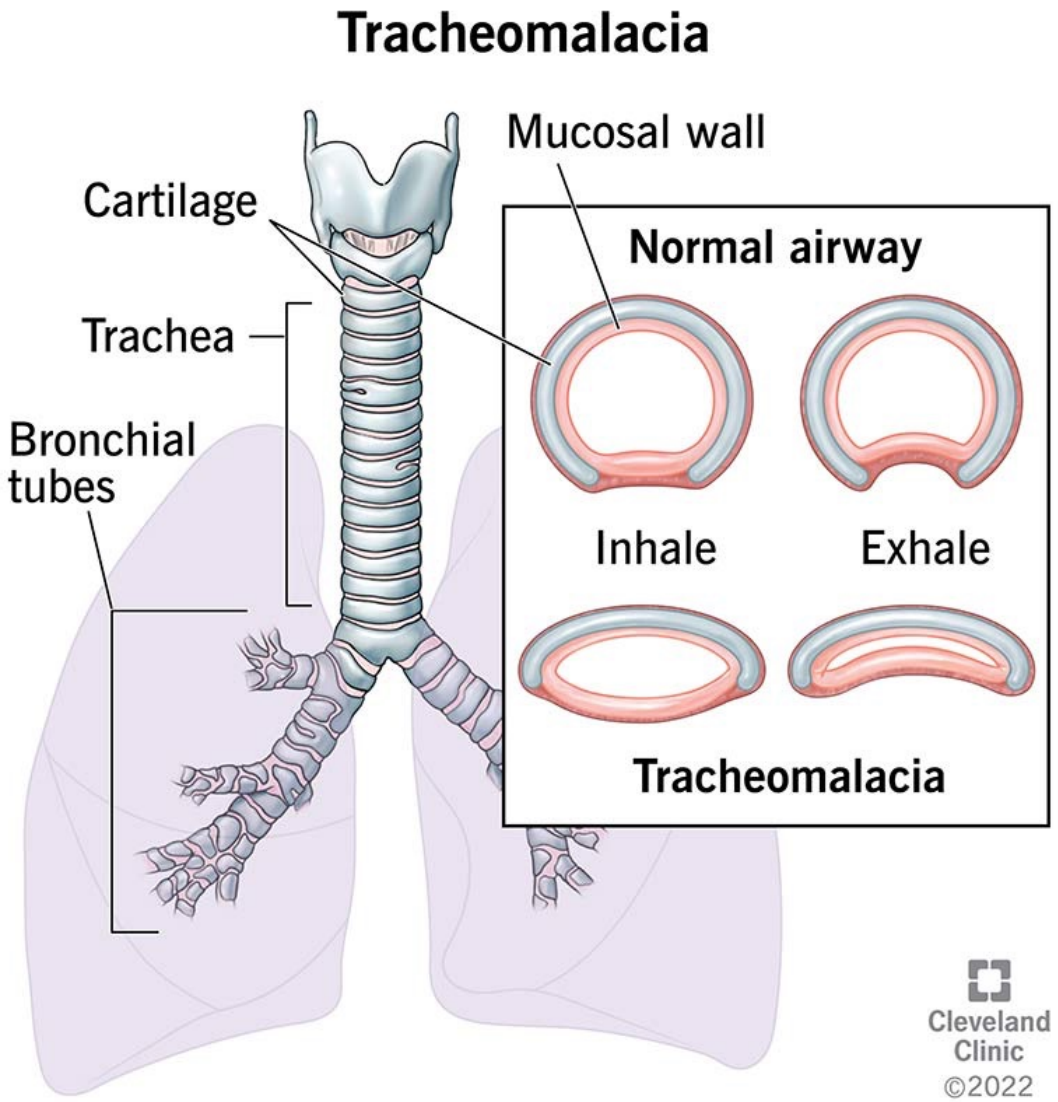



Am Fam Physician. 2025

# Lung cancer

- Represents <2% of all chronic coughs
- Lung cancer with cough generally in the larger central airways
- Consider
  - Smokers with new cough
  - Change in usual “smokers cough”
  - Chough persisting >1 month after smoking cessation






# Tracheomalacia

- Excessive dynamic airway collapse (50% reduction in cross-sectional area of the central airway)
- Cause is unknown in most adults
- Cough is “barky” in quality • Stridor may be present
- Dynamic (inspiratory and expiratory) non-contrast CT chest is the diagnostic modality to use
- Bronchoscopy may be required

# Psychogenic or habitual cough

- Diagnosis of exclusion
- No coughing with sleep or when distracted

# Evaluation

## Know the common causes

## Thorough history

- Systemic symptoms (hemoptysis, weight loss, fevers, shortness of breath)
- Aggravating and relieving sfactors
- Smoking history
- Medications
- Other symptoms

## Physical exam

## Chest x-ray

- Subacute and chronic

## CT chest

- Red-flag symptoms

# Further investigation

- Spirometry and metacholine test
- Sputum culture
- Induced sputum for eosinophils
- Allergy Testing
- 24 hour esophageal PH/Impedance monitoring
- Endoscopic or video fluoroscopic swallow
- EGD
- Sinus imaging
- Chest CT
- Bronchoscopy
- Cardiac workup (Echo)
- Environmental /occupational assessment

# Treatment

- UACS
  - Antihistamine/decongestants
    - First generation
  - Tailor to underlying condition
    - Allergic: Intranasal steroids, second or third generation antihistamines, allergen avoidance
    - Nonallergic rhinitis-First generation antihistamine and decongestant
    - Chronic rhinosinusitis: First generation antihistamines, decongestants, intranasal corticosteroids and antibiotics when appropriate
  - Duration
    - At least 2 weeks

# Treatment

## Asthma

- Inhaled corticosteroids
- Long-acting beta-agonist
- Oral steroids

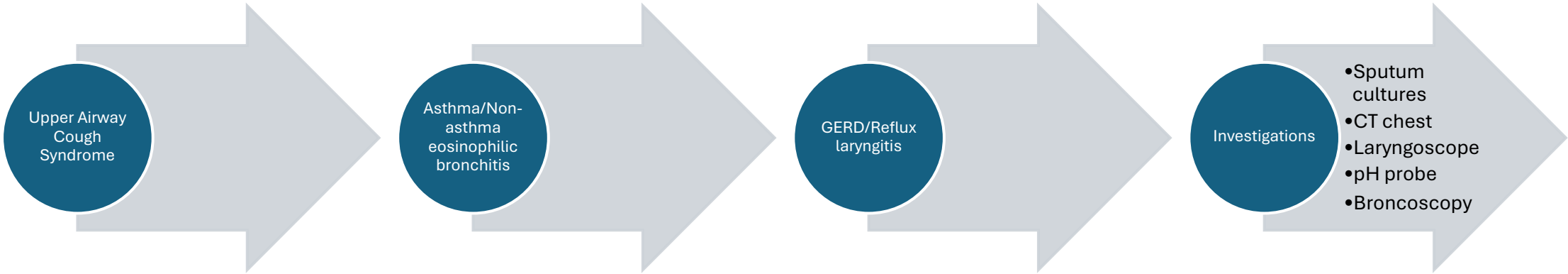
## GERD

- PPI for at least 8 weeks

## Nonasthmatic Eosinophilic Bronchitis

- Inhaled corticosteroids (2 months)

# Un-identified cause/Chronic Cough



# Practice recommendations

- Thorough history and physical exam
- CXR as baseline for subacute and chronic cough
- Look for Upper Airway Cough Syndrome
  - Reduce number of prescriptions and visits.
- Additional investigations as directed by history and exam
- Systematically direct treatment at most common cuses
  - UACS->Asthma->NAEB->GERD
- ACE-I discontinuation
- Smoking cessation

# Citations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