Common Symptoms, Uncommon Causes

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Disclosure

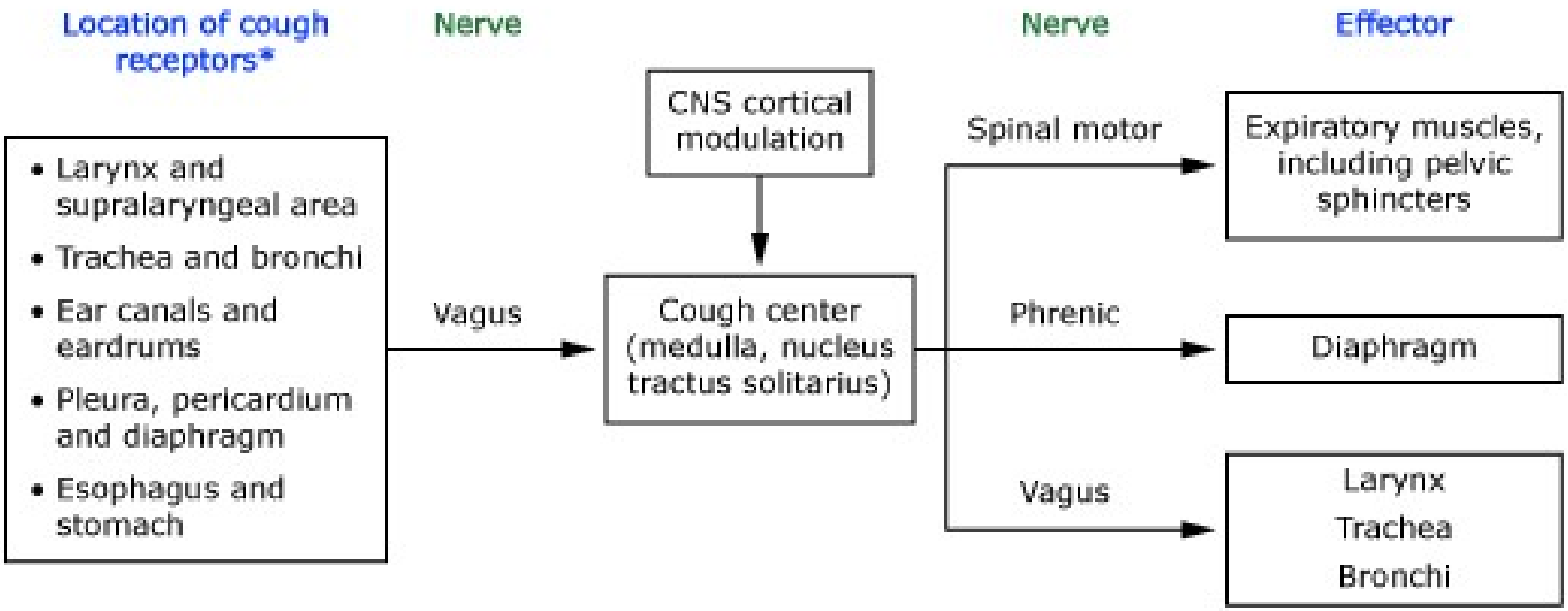
I have no actual or potential conflict of interest in relation to any product or service mentioned in this program or presentation.

Learning Objectives

- Review some common symptoms and the pathogenesis for a cough, red or pink eyes and nausea
- Identify the causes of common symptoms for a cough, red or pink eyes and nausea and describe how to differentiate their causes
- Distinguish which conditions require emergent, urgent or routine care

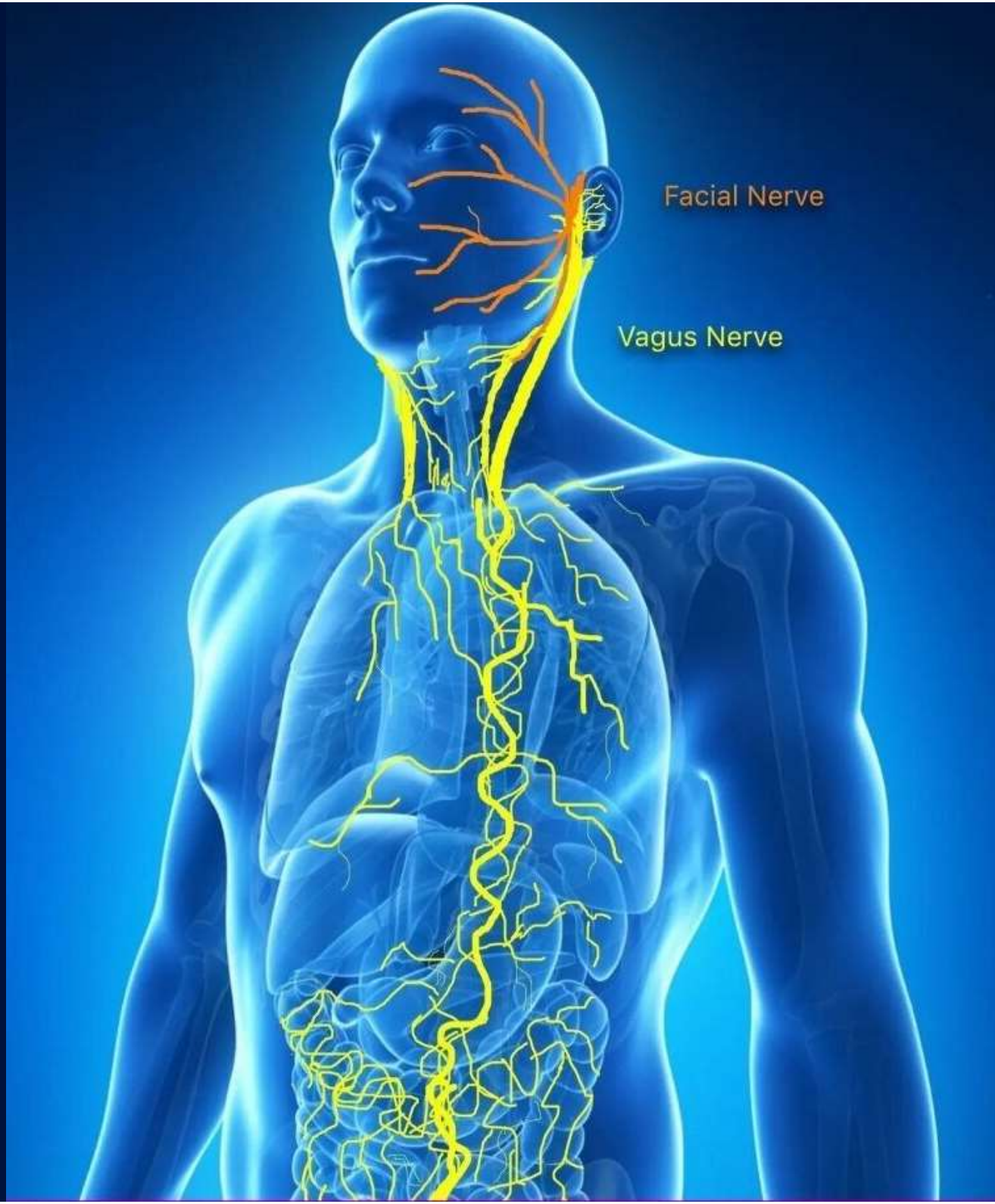
Cough

What is a Cough? – A Cough is a Reflex



*Cough receptors include rapid acting receptors (RAR), slow acting receptors (SAR), C fibers, and other cough receptors. Some receptors are mechanosensitive and others are chemosensitive. Impulses from these receptors are all carried by the vagus nerve.

The Vagus Nerve



How is a Cough Categorized?

1. **Acute Cough**
   Present for up to *three weeks*

2. **Subacute Cough**
   Present for three to eight weeks

3. **Chronic Cough**
   Present for longer than *eight weeks*

Causes of Acute and Subacute Cough

Acute Cough

- **An acute upper or lower respiratory tract infection**
  - Common cold, acute bronchitis, COVID19
- **Exacerbation of a chronic condition**
  - Asthma, COPD, bronchiectasis, chronic rhinosinusitis, heart failure
- **Other Processes**:
  - Reactive airways DS (RADS), Tuberculosis (TB), lung cancer

Subacute Cough

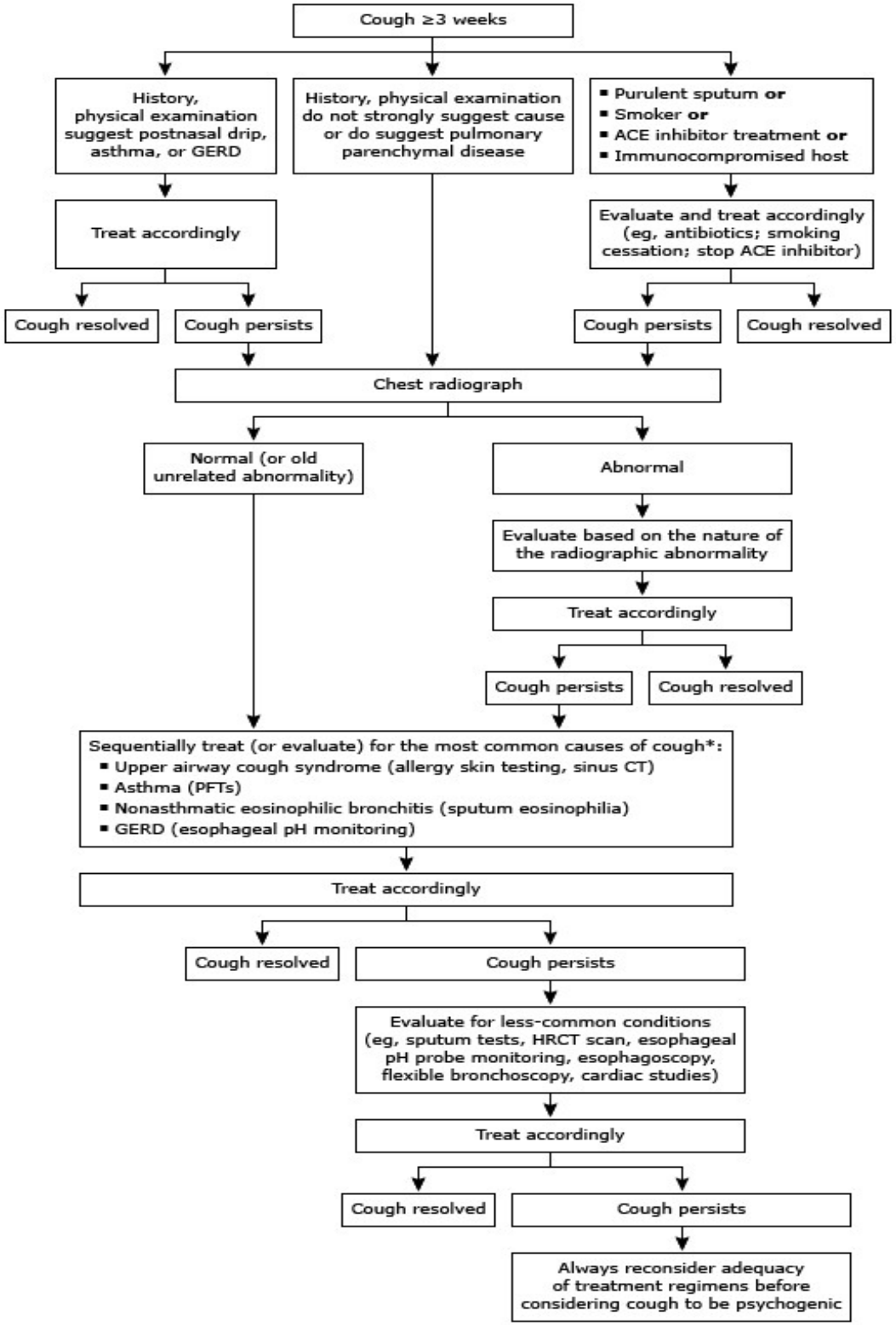
- **Postinfectious**
  - e.g. RSV, pertussis, CV19,
- **Exacerbations of underlying DS**

  e.g. Asthma, COPD, chronic bronchitis

Chronic (Persistent) Cough – Causes

- Asthma
- Non-asthmatic eosinophilic bronchitis
- Chronic obstructive pulmonary ds (COPD)
- Gastroesophageal reflux ds (GERD)
- Upper Airway cough syndrome – due to postnasal drip
- Airway ds conditions
  - Bronchiectasis
  - Neoplasm
  - Foreign body
- Pulmonary parenchyma
  - Interstitial lung ds, lung abscess

How to Evaluate a Chronic Cough



Asthma

- **Asthma**

  is a leading cause of persistent cough in adults and the most common cause in children. Cough due to asthma is commonly accompanied by episodic wheezing and dyspnea; however, it can also be the sole manifestation of a form of asthma called "cough variant" asthma (CVA). Cough-variant asthma can progress to include wheezing and dyspnea.

- **Non-asthmatic eosinophilic bronchitis (NAEB)**

  in patients who lack risk factors for other common causes of chronic cough BUT airway hyper-responsiveness is absent

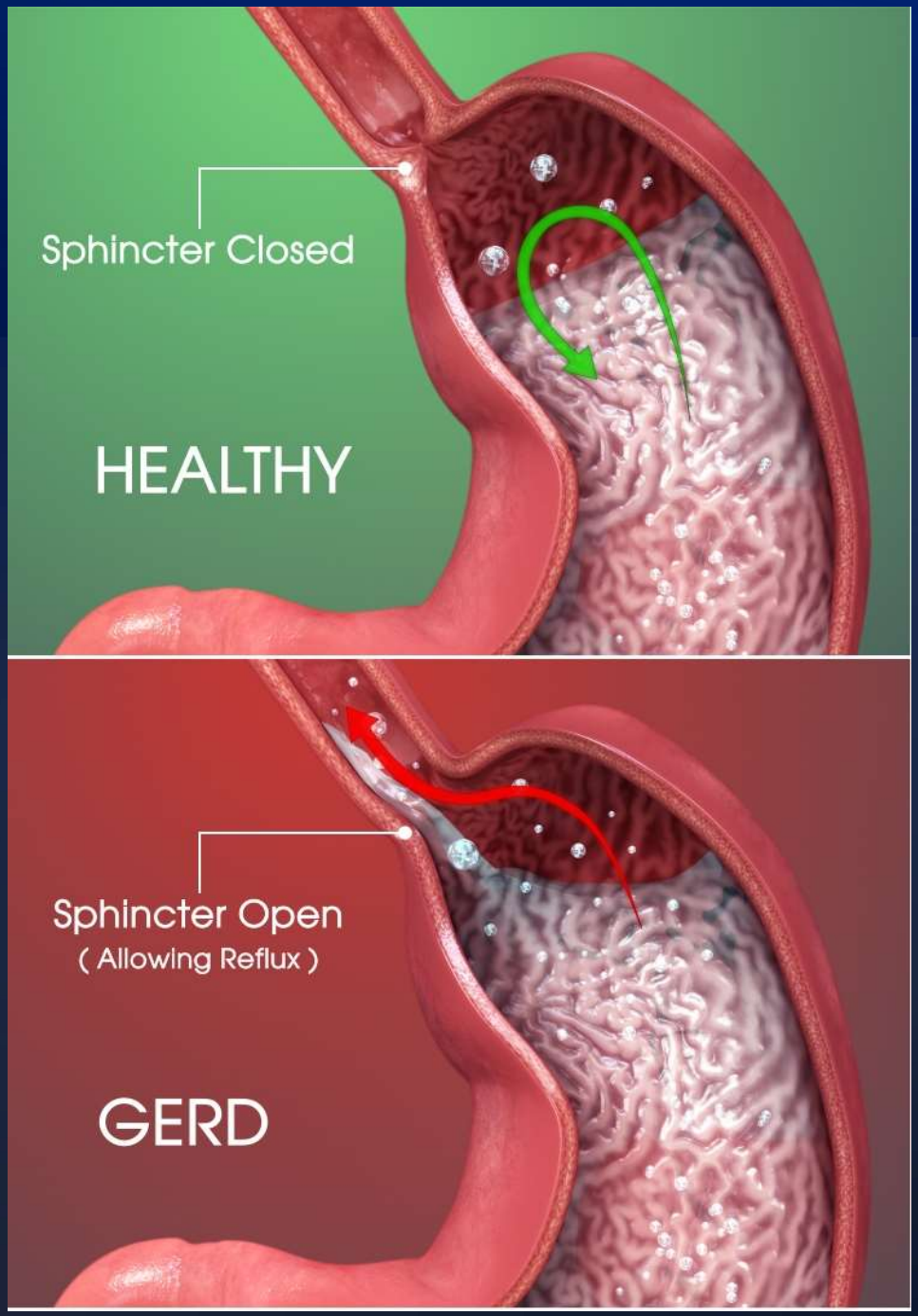
Gastroesophageal Reflux DS (GERD)

- Some studies report that GERD is the second or third most common cause of persistent cough while other studies report a much lower prevalence of refluxinduced cough.

- **Mechanisms**
  - Stimulation of receptors on vagal afferent nerves in the upper respiratory tract (eg, in the larynx).
  - Aspiration of gastric contents, leading to stimulation of receptors in the lower respiratory tract and inflammation in the airways.
  - An esophagealtracheobronchial cough reflex induced by reflux of acid into the distal esophagus.

Diagnosis: Ambulatory esophageal pH monitoring, with impedance and event markers to allow correlation of cough with esophageal pH, is reserved for patients with persistent symptoms of GERD despite a threemonth trial of antireflux therapy

**Most often, the diagnosis of cough due to GERD is based on clinical features and a response to empiric therapy


Sphincter Closed
HEALTHY
Sphincter Open
(Allowing Reflux)
GERD

Laryngopharyngeal Reflux (LPR)

- The retrograde movement of gastric contents (acid and enzymes such as pepsin) into the laryngopharynx leading to symptoms referable to the larynx/hypopharynx
- Most patients are relatively unaware of LPR with only 35 percent reporting heartburn.
- **Symptoms:** dysphonia/hoarseness, chronic cough, mild dysphagia, and nonproductive throat clearing.
- **Pathogenesis**: LPR is considered primarily an upper esophageal sphincter (UES) problem that mainly occurs in the *upright position* *** during periods of physical exertion (e.g. bending over, Valsalva, exercise). There appears to be a lower incidence of esophageal dysmotility in LPR versus GERD.
- **Diagnosis**
  - ENT evaluation Direct laryngoscopic evaluation can assist in the diagnosis of cough from reflux.
  - Arytenoid erythema and edema and pharyngeal inflammation often suggest laryngeal and pharyngeal reflux and when seen
- **Treatment**
  1. a course of treatment for reflux is indicated with monitoring of the cough on such therapy.
  2. in one study post anti-reflux surgery, 100% had either total or significant resolution of cough

Esophagus

- Pharynx, esophagus: passageway for food (from mouth to stomach)

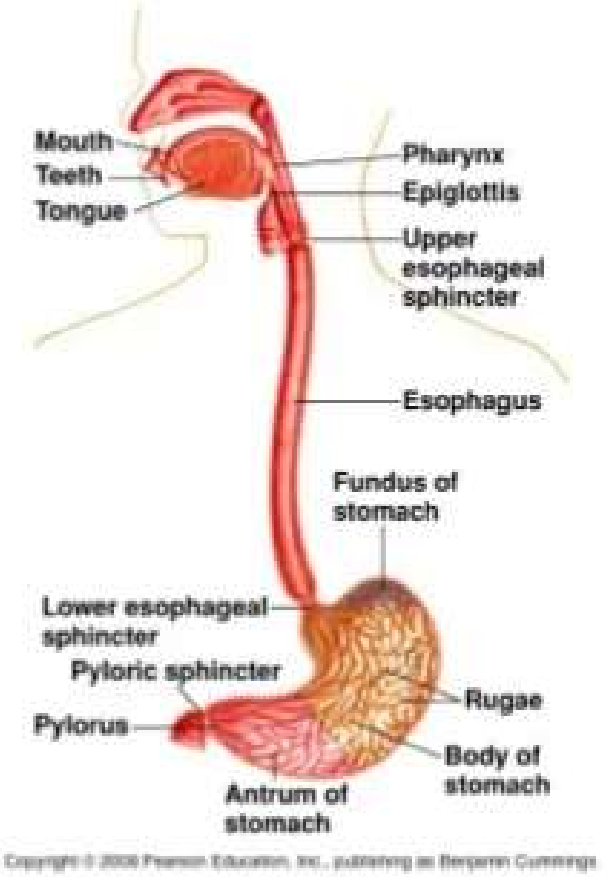
- **Esophageal sphincters**

Upper esophageal sphincter (UES):

Prevents entry of air

Lower esophageal sphincter (LES):

Prevents reflux of corrosive acidic stomach content.



Upper Airway Cough Syndrome (UACS)

- Thought to be due to "postnasal drip" or nasal secretions flowing into the nasopharynx caused by allergic, perennial nonallergic, or vasomotor rhinitis or rhinosinusitis
- Several studies suggest that UACS related to postnasal drip is a common cause of subacute and chronic cough. Once secretions are present in the upper airway, cough is probably induced by stimulation of cough receptors within the laryngeal mucosa.
- **Symptoms:** frequent nasal discharge, a sensation of liquid flowing into the back of the throat, and frequent throat clearing. postnasal drip may also be "silent", so that the absence of these symptoms does not necessarily exclude the diagnosis
- **Diagnosis**: cobblestone appearance to the pharyngeal mucosa and the presence of secretions in the pharynx; there are no definitive criteria for its diagnosis
- **Treatment –** decongestants, intranasal steroids

ACE Inhibitors and Other Medications

- **ACEI –** A nonproductive cough; more common in females than males; more common in Chinese people
  - **Pathogenesis**: not known with certainty, it is thought that ACE inhibitors increase the sensitivity of the cough reflex
    - It usually begins within one week of instituting therapy, but the onset can be delayed up to six months.
    - It often presents with a tickling, scratchy, or itchy sensation in the throat.
    - *It does not occur more frequently in asthmatics than in nonasthmatics.*
    - It is generally not accompanied by airflow obstruction,
    - It *typically resolves within 14 days of discontinuing therapy* but can take up to four weeks
    - It generally recurs with rechallenge, either with the same or a different ACE inhibitor.
  - **Diagnosis & Treatment** Cessation of these medications is a diagnostic and therapeutic trial. Cough will generally resolve within several days.

- **Calcium channel blockers and bisphosphonates** increase GERD or theoretically worsen preexisting reflux and potentially increase cough

- **Glaucoma medications** latanoprost & Timolol

Prolonged Postinfectious Cough

- Cough following viral or other upper respiratory tract infection can persist for more than eight weeks after the acute infection
- increase in frequency during outbreaks of Mycoplasma pneumoniae, Chlamydia pneumoniae, B. pertussis, and severe acute respiratory syndrome coronavirus 2 (SARSCoV2; cause of COVID19)
  - **Bordetella pertussis** – incubation period following exposure is typically 7 to 10 days but may be three weeks or longer
    - Pertussis is a common but under recognized cause of chronic cough in adolescents and adults
    - cough often begins in the second week of illness and can persist for several weeks to months.
    - Many B. pertussis infections appear to be asymptomatic ***
    - Treatment Untreated, the paroxysmal phase generally lasts two to three months then gradually transitions to the convalescent phase.

Other Causes of Chronic Cough

- **Bronchiectasis** – <2% of chronic cough cases, most productive mucopurulent/purulent cough
- **Interstitial Lung disease** – cough with dyspnea
- **Lung cancer** – <2% of chronic cough cases ***
- **Smoldering infection **** increased suspicion for smoldering infection is appropriate, particularly in those with fever, productive cough, fatigue, weight loss, hemoptysis, or immunocompromise
- **Aspiration** Airway irritation and cough
  - Swallowing dysfunction with recurrent aspiration In the older adult or infirm, Sx: Cough while eating or drinking, particularly with thin liquids, is a common symptom; eval with Speech pathology
  - Foreign body aspiration present dramatically, particularly in children; difficult to diagnose. Sx: Focal wheezing, hemoptysis, and foul-smelling sputum are the most common clinical signs
- **Chronic heart failure** dry cough from airway edema and irritation or a characteristic wet cough with frothy sputum arising from alveolar fluid accumulation
- **Irritation of the Vagus nerve** include disorders of the external auditory canals, pharynx, larynx, diaphragm, pleura, pericardium, esophagus, stomach, or thyroid. ***
- **Diagnosis of exclusion**
  - Somatic cough disorder somatic cough disorder or tic cough (also known as "psychogenic" or habit cough)
  - Chronic refractory cough persistence of the cough despite a thorough investigation, including systematic, guideline-based trials of empiric therapy for the common causes of cough***

QUESTIONS?

Subacute & Chronic Cough

1. Lung cancer is a common cause. **T or F?**

2. Heart failure can have a dry, wet cough or both?

3. Post infectious cough generally goes away in 23 weeks. **T or F?**

4. An older lady coughing with thin liquids means what?

5. In upper airway cough syndrome, you always feel post nasal drainage? **T or F?**

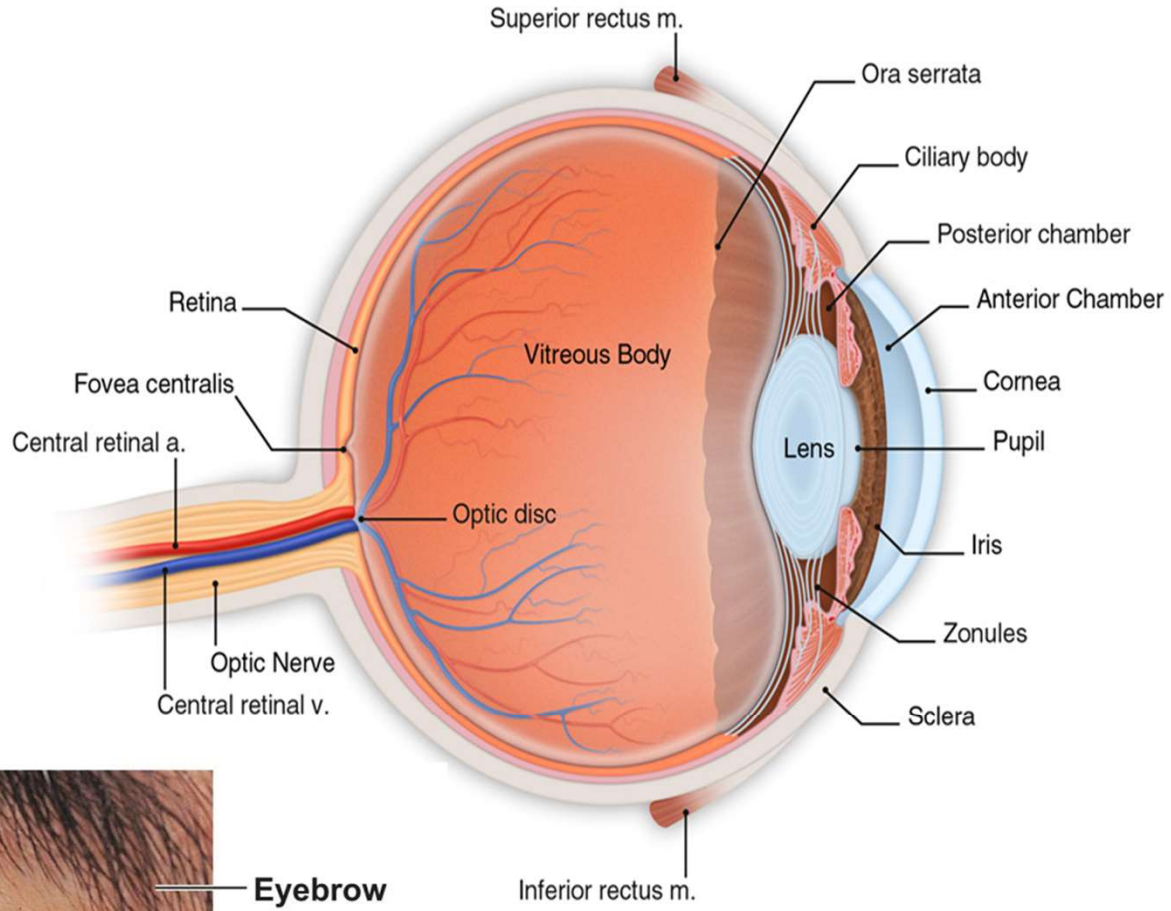
Red or Pink Eyes

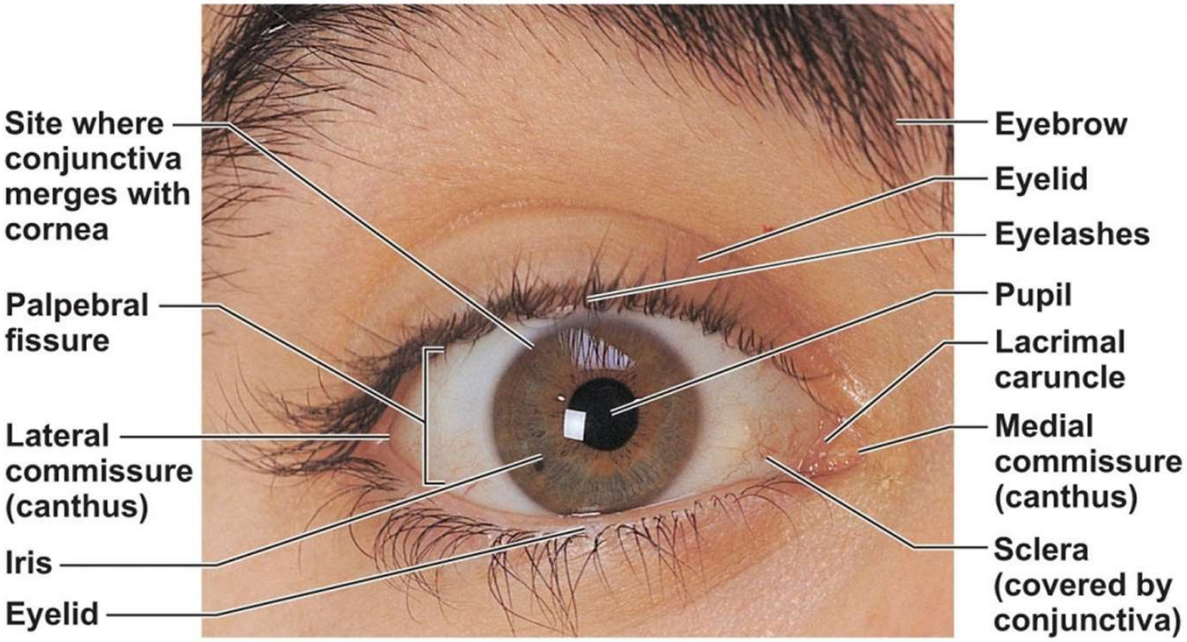
Red Eyes & Red Flags

- Common presenting complaint in ambulatory practice. A small percentage of patients with red eye need urgent ophthalmological referral and treatment, although the vast majority can be treated by the primary care clinician.
- Conjunctivitis (allergic or viral) is probably the most common cause of red eye in the community setting

Red Flags (sight threatening process)

- *Is vision affected?*
- *Is there pain – acute, progressive, interfering with sleep, not alleviated with analgesics?*
- *Is there a foreign body?*
- *Is there photophobia? Sensitive to bright light*
- *Recent trauma, eye surgery, contact lens wear?*
- *New onset of binocular double vision?*



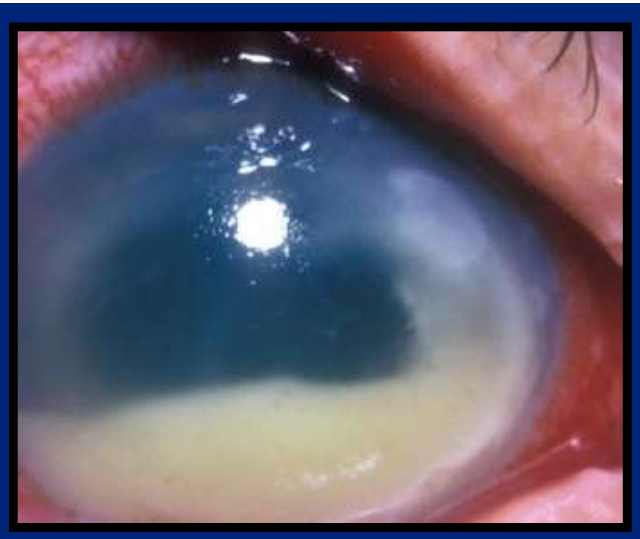


Benign Eye Conditions

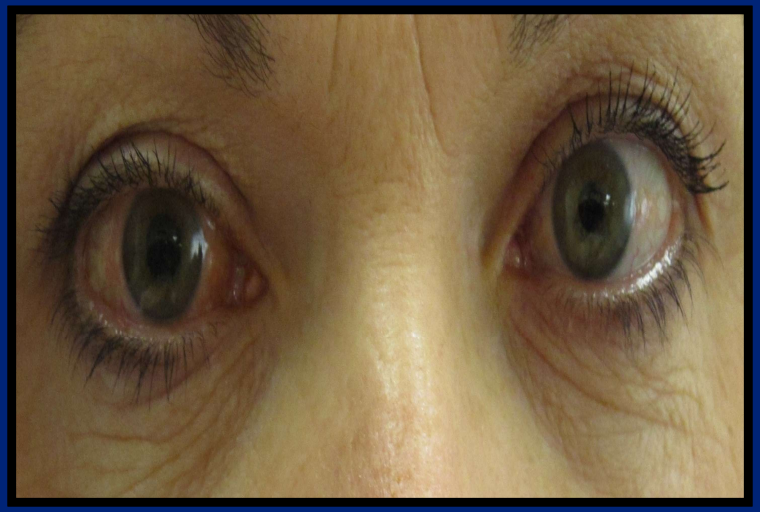
Common Benign Conditions

- **Eyelid lesions** — Stye (hordeolum) and chalazion
- **Blepharitis** — inflammation of the eyelid margin associated with eye irritation Sx: red swollen itchy eye, gritty burning sensation, excessive tearing crusty /matting lashes in Am, flaking eye lid skin
- **Conjunctivitis** — usually a benign or self-limited; All conjunctivitis is characterized by a red eye, but not all red eyes are conjunctivitis. classified as infectious (bacterial or viral) or noninfectious (allergic, toxic, or nonspecific).
- **Corneal abrasions** — common eye injuries that frequently result from eye trauma, foreign bodies, and improper contact lens use but can be spontaneous. *Sx* severe eye pain and reluctance to open the eye due to photophobia and/or foreign body sensation, pain can preclude sleep.
- **Contact lens overwear** — Noninfectious and infectious complications of contact lenses are common and vary in severity from clinically inconsequential to potentially vision threatening
- **Dry eye syndrome** — Sx of chronic eye irritation associated with mild to moderate discomfort; when severe, can have a significant impact on visual acuity, daily activities, social and physical functioning, and workplace productivity
- **Episcleritis** –localized ocular redness from inflammation of episcleral vessels. It is most commonly unilateral; The vessels or nodules are typically quite distinct and are moveable over the scleral surface; Patients describe an achiness or awareness but typically don't report pain. last for a few weeks. Episcleritis can be recurrent and may be associated with underlying autoimmune disease. Treatment: oral nonsteroidal anti-inflammatory drugs (NSAIDs)
- **Subconjunctival hemorrhage** –subconjunctival hemorrhage, with demarcated areas of extravasated blood just beneath the surface of the eye. generally asymptomatic, blood is typically resorbed over one to two weeks. Pathogenesis: may occur spontaneously or with Valsalva associated with coughing, sneezing, straining, or vomiting. Diagnosing: normal acuity and the absence of discharge, photophobia, or foreign body sensation. Treatment No specific therapy is indicated.**

Pictures – Benign Conditions

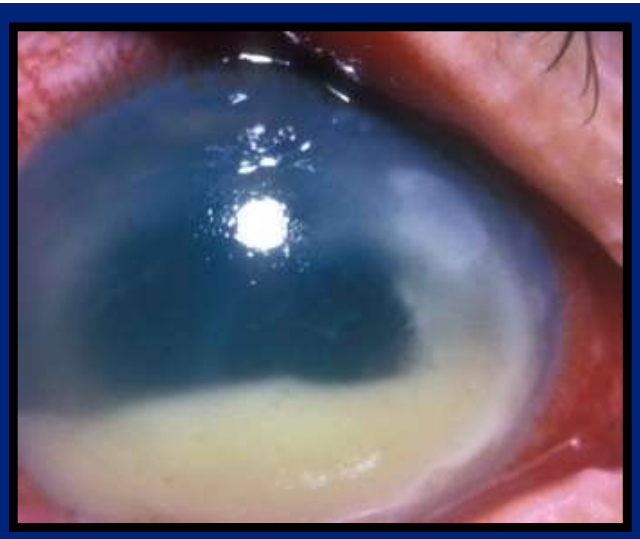


Serious Eye Conditions

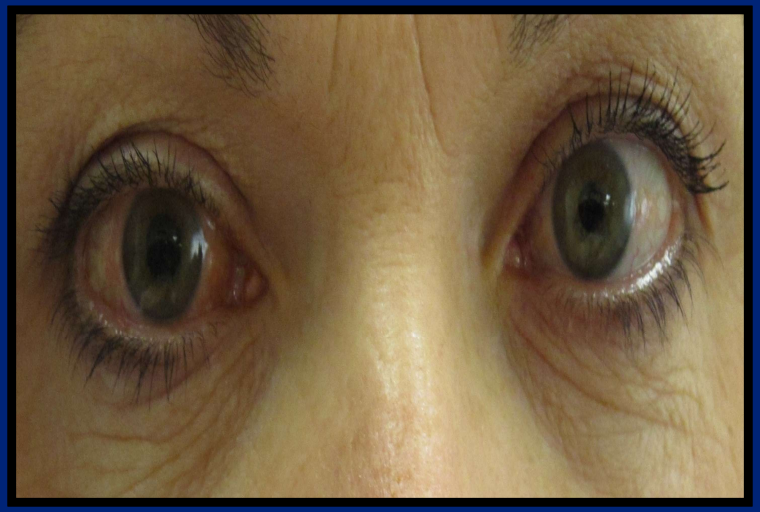


Serious Eye Conditions – Sight Threatening

- **Angleclosure glaucoma** – rare, increases w age. Symptoms – appears in distress, , slumped over covering eye, clutching head w one hand, “worse headache in my life”. Nausea and vomiting ca occur with increasing eye pressure. The pupil is fixed in mid-dilation and the anterior chamber is shallow. Within hours of symptom onset, the cornea becomes hazy. Treatment *must be treated within hours to avoid irreversible damage to the optic nerve*. Rx: pressure lowering topical and systemic agents, laser iridotomy
- **Hyphema** – finding of red blood cells layered out in the anterior chamber. can be associated with significant trauma, inflammation, or pathologic neovascularization. Treatment – Same day ophthalmology exam
- **Hypopyon** – finding of white blood cells layered out in the anterior chamber., can be associated with infectious keratitis or endophthalmitis. Treatment same day evaluation by an ophthalmologist
- **Iritis** –Inflammation of the anterior uveal tract. Symptoms: similar fashion to those with an active corneal process, but there is no foreign body sensation per se. Diagnosing cardinal sign of iritis is ciliary flush: injection that gives the appearance of a red ring around the iris
- **Infectious keratitis** – can be caused by bacteria, viruses, fungi, or parasites
  - **Bacterial keratitis** will complain of foreign body sensation and have trouble keeping the involved eye open, corneal opacity or infiltrate (typically a round white spot) in association with red eye, photophobia, and foreign body sensation. Tx: same day ophthalmological topical bactericidal Anbx
  - **Viral keratitis** – red eye, photophobia, foreign body sensation, and watery discharge, self-limited process
- **Scleritis** painful, destructive, may also involve the cornea, adjacent episclera, and underlying uveal tract. often associated with systemic disease, including systemic rheumatologic and inflammatory disorders. purely posterior there *may be no redness*. anterior scleritis, the redness is typically deeper in color or purpuric (not bloodshot). Symptoms/Diagnosing characterized by severe, constant, boring pain that worsens at night or in the early morning hours and radiates to the face and periorbital region, with headache, watering of the eyes, ocular redness, and photophobia. Treatment referred to an ophthalmologist for evaluation within a few days



Serious Eye Conditions



Emergency versus urgent referral for red eyes

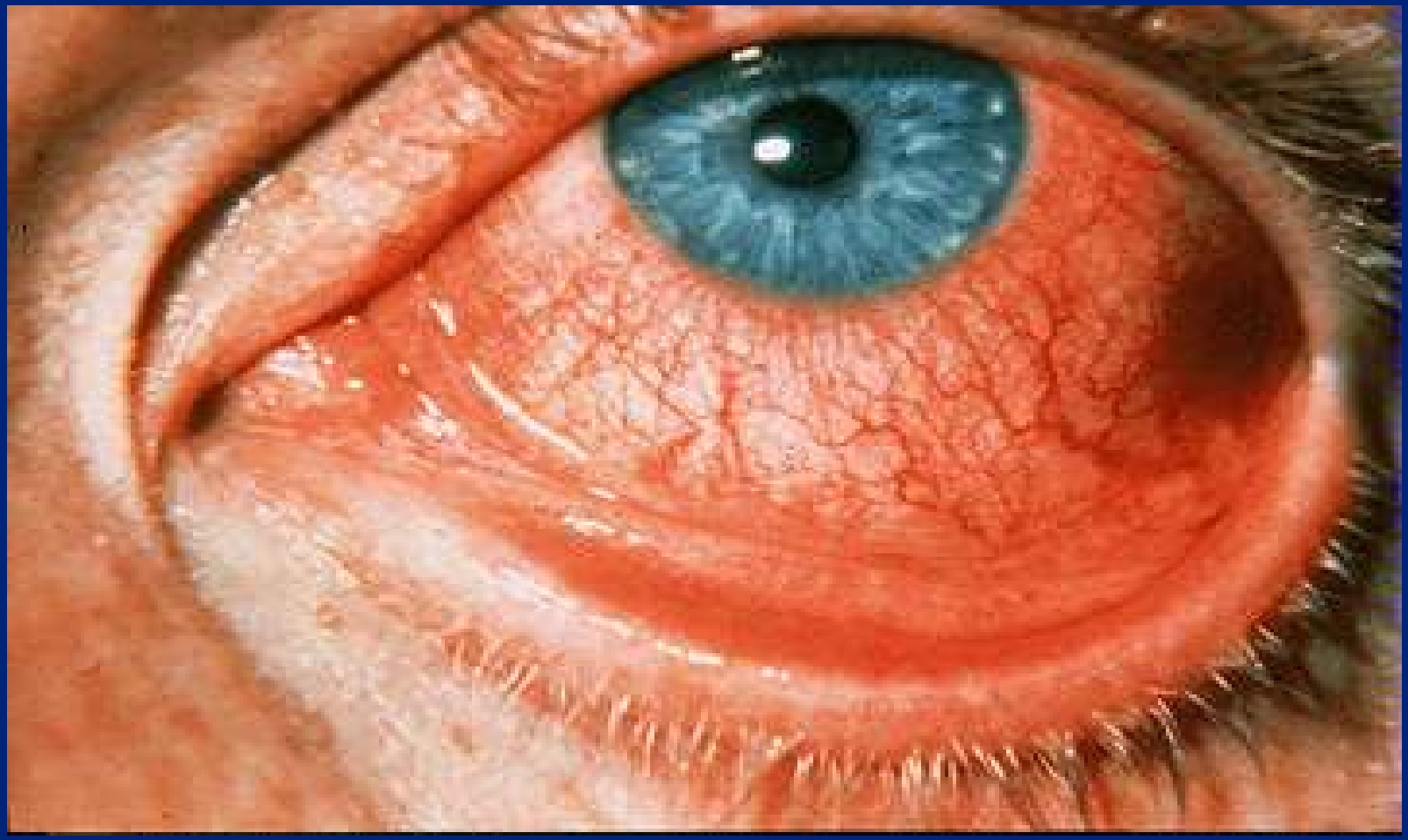
Angle-closure glaucoma	Emergency
Hyphema	Emergency
Hypopyon	Emergency
Iritis	Urgent
Infectious keratitis	
▪ Bacterial	Emergency
▪ Viral	Urgent
Scleritis	Urgent

QUESTIONS?

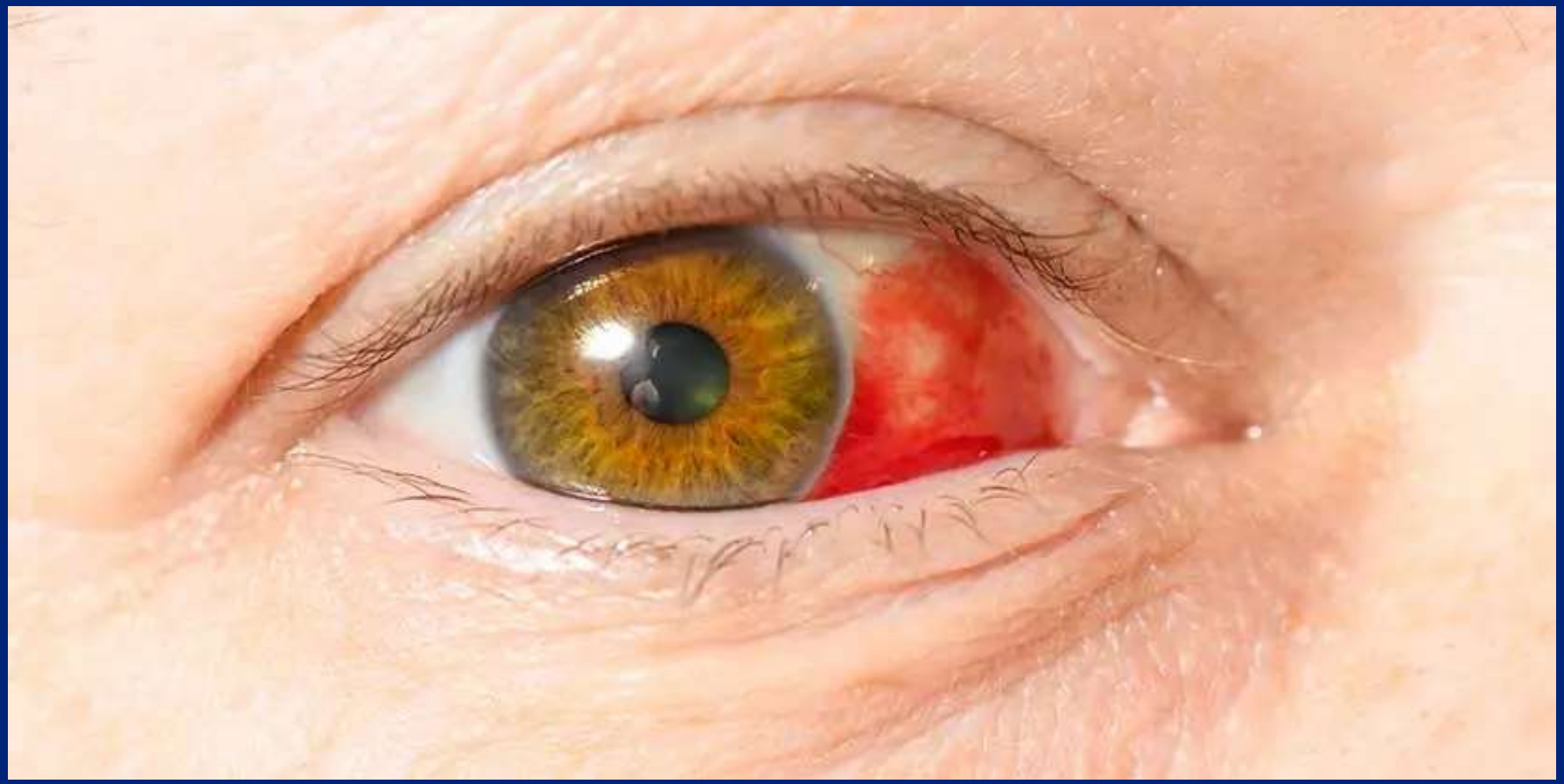
What Eye Condition is This?

What Condition is This? Do You Need Emergent Evaluation?

What Eye Condition is This? Is it Contagious?



Is This an Eye Emergency? Name this condition.



Nausea

What is Nausea?

- Nausea, the unpleasant sensation of being about to vomit
- Nausea can occur alone or can accompany vomiting (the forceful expulsion of gastric contents), dyspepsia, or other gastrointestinal symptoms
- Nausea can occur without vomiting and, less commonly, vomiting occurs without nausea
- Nausea is often more bothersome and disabling than vomiting

- **Nausea** Gastric rhythm disturbance is a peripheral mechanism underlying nausea from various causes. Nausea correlates with a shift in the normal three cycle per minute gastric myoelectrical activity.
- *Vomiting is a reflex* that allows an animal or person to rid itself of ingested toxins or poisons. It can be activated by humoral or neuronal stimuli, or both

Causes

Acute disorders

1. Infectious causes
2. Postoperative nausea and vomiting
3. Vestibular neuritis
4. Chemotherapy-induced nausea and vomiting

Chronic disorders

1. Nausea and vomiting of pregnancy
2. Gastroparesis Idiopathic and diabetic gastroparesis are the two most common groups
3. Gastroesophageal reflux – the nausea usually responds management of GERD
4. Gastric outlet obstruction
5. Eosinophilic gastroenteritis uncommon, but its diagnosis is especially important as steroid therapy is usually effective.
6. Chronic idiopathic intestinal pseudo-obstruction usually secondary to an underlying disorder affecting neuromuscular function that suggests mechanical bowel obstruction
7. Functional nausea and vomiting disorders

Functional Nausea and Vomiting Disorders

The Rome IV criteria identify *three nausea and vomiting disorders*, each requires fulfillment of the criteria for at least three months with symptom onset at least six months before diagnosis

Chronic Nausea and Vomiting Syndrome (Rome IV criteria must include all criteria):

- Bothersome (i.e., severe enough to impact on usual activities) nausea, occurring at least one day per week and/or one or more vomiting episodes per week.
- Self-induced vomiting, eating disorders, regurgitation, or rumination are excluded.
- No evidence of organic, systemic, or metabolic diseases that is likely to explain the symptoms on routine investigations (including at upper endoscopy).

Functional Nausea and Vomiting Disorders

Cyclic Vomiting Syndrome Rome IV criteria must include all criteria

- Stereotypical episodes of vomiting regarding onset (acute) and duration (less than one week).
- At least three discrete episodes in the prior year and two episodes in the past six months, occurring at least one week apart.
- Absence of vomiting between episodes, but other milder symptoms can be present between cycles
- A history or family history of migraine headaches further supports the diagnosis.
- The American Neuro-gastroenterology and Motility Society and Cyclic Vomiting Association characterize a typical four-phase cycle:
  - Prodrome of intense nausea, sometimes with panic symptoms, diarrhea, cold and hot flashes, and profuse sweating;
  - Vomiting/retching phase, sometimes with migraine headache, photosensitivity, and phono sensitivity
  - Recovery phase lasting hours to days; and
  - Inter-episodic phase.

Functional Nausea and Vomiting Disorders

Cannabinoid hyperemesis syndrome (must include all criteria):

- Stereotypical episodic vomiting resembling cyclic vomiting syndrome in terms of onset, duration, and frequency.
- Presentation after prolonged excessive cannabis use.
- Relief of vomiting episodes by sustained cessation of cannabis use.

- Supportive remarks:
  - May be associated with pathologic bathing behavior (prolonged hot baths or showers).
  - Following a systematic literature review, Venkatesan et al proposed these criteria be modified to require at least three episodes per year, cannabis use for greater than one year before symptom onset and average use greater than four times per week, and resolution after cessation of cannabis use for at least six months or at least equal to a duration that spans three typical cycles in the patient

References

- Irwin RS, French CT, Lewis SZ, et al. Overview of the management of cough: CHEST Guideline and Expert Panel Report. Chest 2014; 146:885.
- Song WJ, Chang YS, Faruqi S, et al. The global epidemiology of chronic cough in adults: a systematic review and metaanalysis. Eur Respir J 2015; 45:1479.
- Irwin RS, Curley FJ, French CL. Chronic cough. The spectrum and frequency of causes, key components of the diagnostic evaluation, and outcome of specific therapy. Am Rev Respir Dis 1990; 141:640.
- Dart JK. Eye disease at a community health centre. Br Med J (Clin Res Ed) 1986; 293:1477.
- Leibowitz HM. The red eye. N Engl J Med 2000; 343:345.

Q&A


Thank you
UnitedHealthcare Community Plan