

EAR, NOSE AND THROAT

Nose & Sinuses- OSCE

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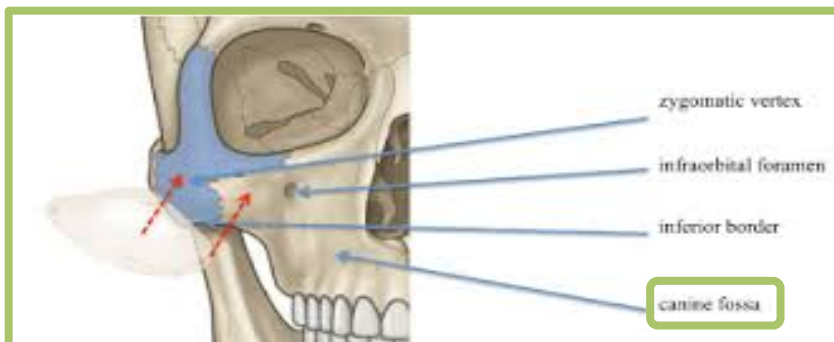
Nose Examination

Examination of Nose and Paranasal Sinuses	Comment
Pre-Exam	
Wash hands	
Introduce your self	
Explain the procedure and take Permission	
Privacy	
Position of physician in front of the patient and the patient position sitting up right	
Exposure - Face	Mention that a chaperone should be present if examining the opposite sex.
General Appearance	
Appearance: age/consciousness /alertness /distress. Whistling while breathing (perforation)	Difficulty in breathing or breathing from the mouth
Body built: Normal - thin - obese	
Connections: IV lines / mask /monitors	Use of inhalers and nebulizers (indicates asthma)
Color: Pallor - Jaundice - cyanosis	
Vital Signs	
Pulse Rate, Respiratory Rate, Blood Pressure, and Temperature	Must be mentioned
Inspection	
1. External Nose	
a. Size of the nose in relation to the rest of the face	
b. Deviation of bridge of nose	Stand behind the Pt. and ask him to look upward, look down the nose from above to detect any deviation
c. Convexity (hump) or concavity (saddling) of the dorsum of the nose	From the side of the patient, look for hump or saddle nose
d. Shape of the tip of nose (e.g. pointed, bulbous)	
e. Shape of the columella and nostrils (short/wide columella, narrow / wide nostrils)	
f. Deviation of the nasal septum	(may be evident in one nostril)
g. Skin lesion: for swelling, sinus, bruising, erythema or ulceration	
2. Patency test: occlude each nostril in turn with your thumb and ask the patient to exhale in front a shiny surface (e.g. cold meta tongue depressor) Look for cloudiness due to condensation of water vapor	
3. Anterior rhinoscopy (inspection from anterior nares) + Light Source	
Before using nasal speculum, inspect the anterior nares and nasal vestibule (that may otherwise be covered up by the blades of a nasal speculum) by pressing on the tip of the nose to elevate it.	<ul style="list-style-type: none"> - Look for asymmetry - Notice any unpleasant smell - Check the color of the nasal discharge and if suspecting a bacterial/fungal infection (greenish/grayish) swab and send for culture
Hold the <i>nasal speculum</i> in the left hand in closed fashion and introduce it gently in skin lined nasal vestibule with one limb facing downwards and other upwards.	Avoid contact with the sensitive septum and lateral nasal wall

Open the speculum gently in vestibule and examine floor, medial wall and lateral wall.	Look for hyperemia, hydration, discharge ulceration in Little's area (Kiesselbach's area is a region in the anteroinferior part of the nasal septum where four arteries anastomose), septal deviation or perforation, hypertrophic turbinates or polyps (if any). Roof as such cannot be examined (it needs endoscopy)
4. Make a habit to place all used instrument outside your instrument case. Disposable instruments should be discarded. Non-disposable should be sterilized.	
Palpation	
Palpation of the Nose	
a. Press along the bridge of the nose with both index fingers feeling bony skeleton and skin thickness.	To distinguish bony from cartilaginous deformity)
b. Press on the tip of the nose with one index finger to elicit tenderness	
Palpation of Paranasal Sinuses for Tenderness (in acute sinusitis)	
a. For maxillary sinus, press on the cheek at the level of canine fossa (see the figure below)	
b. For ethmoidal sinus, press with index finger between medial canthus and lateral nasal wall	
c. For frontal sinus, press just below the medial aspect of the eyebrows in upward direction	
Systemic Review	
Mention that you'd like to use the flexible fiberoptic nasolaryngoscope after obtaining the patient consent and decongesting and anesthetizing the nose to get a better view	
Mention that you must do a complete ENT examination and that you'll check the olfactory nerve.	
Post-Exam	
Thank the patient	Ask if he/ she has any questions or concerns
Cover the Patient	
Wash hands	
Summarize findings	

Recommended video :

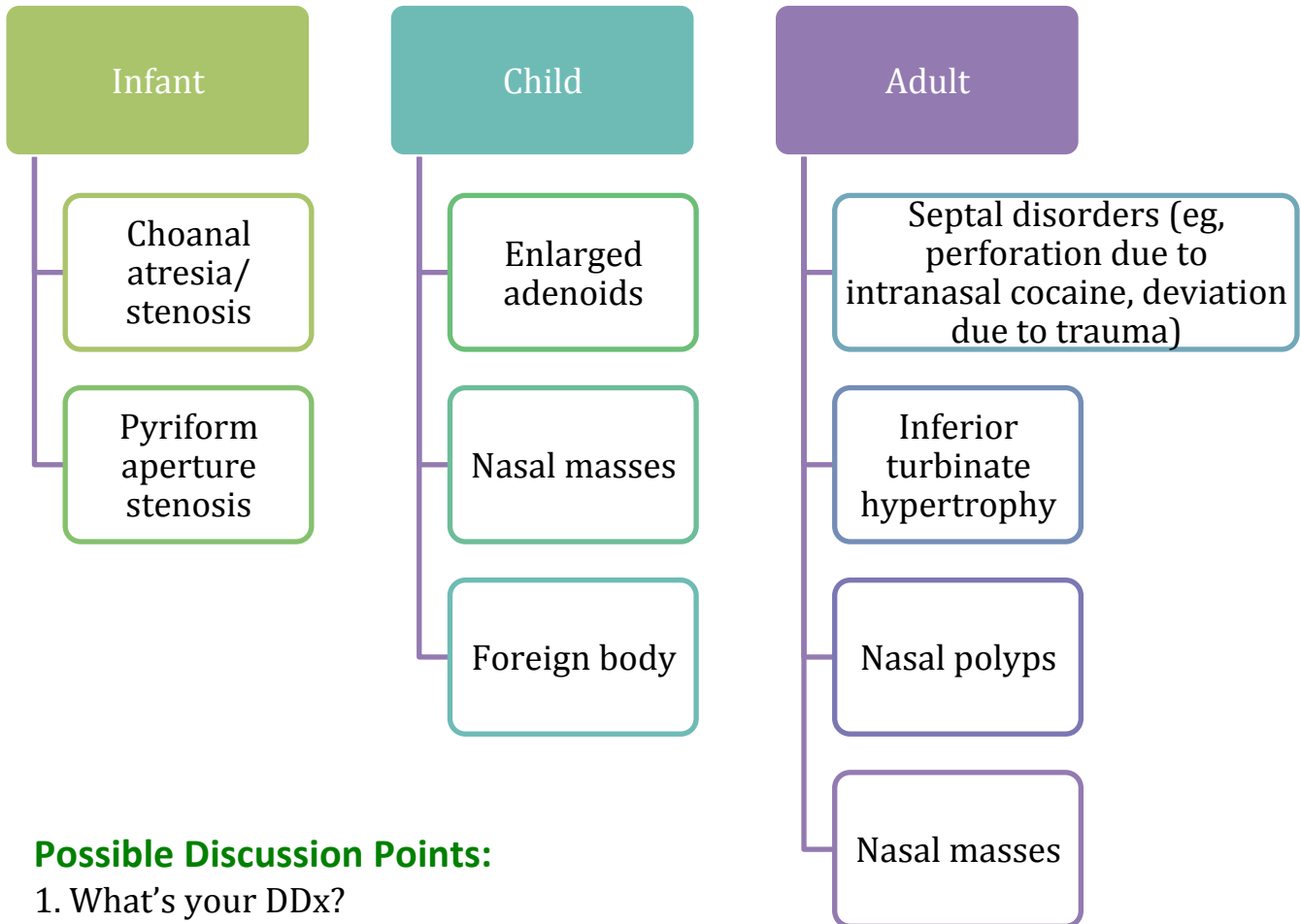
<https://www.youtube.com/watch?v=AIZONXklaLw>



Nasal block history:

Items
Introduction
Personal data
Chief complaint
History of presenting Illness (HPI)
Site <i>unilateral (suggesting structural causes) or bilateral (suggesting mucosal causes)</i>
Onset & Duration
Pattern, progression, pain, previously
Intermittent with respect to: -Daily time course -Body position -Seasonality -Exposures to environmental stimuli (<i>eg, cigarette smoke, particulate matter, pets, chemicals</i>)
Aggravating and Reliving factors
Time course <i>-Temporal course of symptoms, including diurnal and seasonal variation suggesting an allergic process. -Nasal septal deviation or bony inferior turbinate hypertrophy typically worsen slowly over time.</i>
Recent: URTI, Hx of sinusitis, or use of topical nasal decongestants >5 days.
Samter's triad (<i>nasal polyps, aspirin sensitivity, asthma</i>)
Severity
Associated symptoms
- Changes in sense of taste and smell (<i>hyposmia</i>)
- Persistent postnasal drip
- Symptoms suggesting malignancy: <i>Facial deformity, cranial nerve dysfunction (eg, facial numbness), and unexplained epistaxis, middle ear effusion (nasopharyngeal ca)</i>
- Symptoms of rhinosinusitis: <i>Facial pain or pressure, nasal congestion, dysosmia, headache, purulent nasal discharge</i>
- Intranasal drug use: <i>Intranasal cocaine or overuse of topical nasal decongestant, such as oxymetazoline or neosynephrine</i>
- Oral medications: <i>Oral contraceptives, antithyroid medication, antihypertensive medication, antidepressants, and benzodiazepines</i>
- Constitutional: <i>Fever, Weight loss, Loss of appetite</i>
Past medical
Past Medical Conditions: <i>Asthma and obstructive sleep apnea, Wegener's granulomatosis, cystic fibrosis (associated with nasal polyposis), sarcoidosis, and syphilis.</i>
Past Surgeries/ Trauma: <i>rhinoplasty</i>
Past Hospital admission
Social history

Household pets
Smoking, alcohol
Allergies, medication, blood transfusions.
Family history
Asthma, OSA, nasal polyps.



Possible Discussion Points:

1. What's your DDX?
2. How will you investigate the patient?

Risk Factors

1. History of:

- Hx of atopy, URTIs, enlarged adenoids, deviated septum.
- Recurrent sinusitis
- Nasal trauma/ surgery
- Having household pets
- Exposure to poor air quality

2. Family history of nasal polyposis.

3. Use of topical nasal decongestants >5 days.

Rhinitis medicamentosa (or RM) is a condition of rebound nasal congestion brought on by extended use of topical decongestants (e.g., oxymetazoline, phenylephrine, xylometazoline, and naphazoline nasal sprays)

Signs & Symptoms

Congestion, stuffiness, or blockage within the nose, and/or difficulty sleeping/breathing.

Complications

In the case of rhinosinusitis:

- +Facial congestion, facial pain or pressure, dysosmia, rhinorrhea, postnasal discharge, cough, pruritic conjunctivitis, sneezing, or throat irritation/itching.
- Obstructive Sleep Apnea.
- Asthma flare-ups.
- Sinus infections and its complications.

Investigations

1. Anterior rhinoscopy.

- Performed with a nasal speculum or with an otoscope, along with a bright light source to improve visualization.
- Allows for optimal visualization of each vestibule, the nasal turbinates, septum, and mucosal surfaces.
- Provides assessment of the size and caliber of the inferior turbinates and the position of the anterior to mid-nasal septum.
- Possible Findings:
 - Occluded nasal passageways caused by boggy, red nasal mucosa may develop as a result of allergies, nonallergic rhinitis, or overuse of nasal decongestants.
 - Ulcerated, friable mucosa may indicate granulomatous disease.
 - Polyps at the level of the middle turbinate or mid-nasal cavity may be visible.
 - Purulent nasal discharge is helpful in identifying cases of rhinosinusitis.

2. Fiberoptic nasal endoscopy.

- Posterior nasal structures are best visualized with nasal endoscopy.
- Done after preparation of the nose with topical decongestant and/or topical anesthetic spray.

3. CT scan.

4. Other testing.

- Allergy testing
 - should be particularly considered in patients with concurrent asthma.
- Acoustic rhinometry
 - a simple, noninvasive measure of cross-sectional area of the nasal cavity longitudinally along the nasal passageway.
- Peak nasal airflow
 - a noninvasive measure indicating peak nasal airflow in liters per minute achieved during maximal forced nasal inspiration.
- Rhinomanometry
 - a computerized, functional assessment of airflow.

Mucosal biopsy is indicated for cases of suspected malignancy and may be helpful in the diagnosis of infection or inflammatory disease.

Management

Depending on the underlying cause.

Sinusitis:

Definition

Acute sinusitis:

- Usually unilateral and after an URTI
- Symptoms usually last <4 weeks

Chronic sinusitis:

- Pain is less of a feature
- Symptoms last >3 months

Fungal sinusitis:

- Usually the patients are immunocompromised due to diabetes, cancer, HIV, organ transplantation or using systemic or intranasal glucocorticoids.

Presentation

- Presentation is often non-specific
- Nasal congestion
- Purulent discharge
- Facial pain with headache
- Dental pain (maxillary sinus)
- Alteration in sense of smell
- Pain may be exacerbated by leaning forward or head movement

NB. Facial pain in the absence of nasal symptoms is unlikely to be sinusitis.

Complications

- Complications can be life threatening
- Osteomyelitis
- Orbital cellulitis
- Intracranial involvement

Investigations:

- Diagnosis depend on **clinical history and physical examination**.
- **Sinuses culture:** not for all patients (persistence infection despite antibiotics treatment or immunocompromised).
- Imaging may be warranted in the case of recurrent episodes of sinusitis, suspected anatomical abnormalities, or if an alternative diagnosis is suspected such as migraine headache or malignancy.
 - ✓ **Nasal endoscopy:** mucosal erythema, purulent discharge.
 - ✓ **CT Sinuses (non-contrast):** identifies extent of sinus disease, abnormal anatomical structures.

Management:

- Cases are usually self-limiting
- Analgesia and decongestants
- Antibiotics
- Topical nasal steroids
- Surgery: FESS



Acute Rhinosinusitis Complications

Consider hospitalization if any of the following are suspected

- Orbital (Chandler's classification)
 - Periorbital cellulitis
 - Orbital cellulitis
 - Subperiosteal abscess
 - Orbital abscess
 - Cavernous sinus thrombosis
- Intracranial
 - Meningitis
 - Abscess
- Bony
 - Subperiosteal frontal bone abscess ("Pott's Puffy tumour")
 - Osteomyelitis
- Neurologic
 - Superior orbital fissure syndrome (CN III/IV/VI palsy, immobile globe, dilated pupils, ptosis, V1 hypoesthesia)
 - Orbital apex syndrome (as above, plus neuritis, papilledema, decreased visual acuity)

Personal data (name,age)	
Onset	
Duration *	Symptoms <10 days (acute viral sinusitis).The symptoms usually peak early and gradually resolve. Symptoms >10 days but <4 weeks (acute bacterial sinusitis) Symptoms >3 months (chronic sinusitis)
Do you have nasal obstruction? * Unilateral or bilateral *	Non-specific symptom that may be associated with viral or bacterial sinusitis as well as allergic rhinitis.
Constant or episodic	
Discharge *	Purulent nasal discharge may be present in acute viral or bacterial sinusitis In chronic there may be discolored rhinorrhea or thick postnasal drainage on the posterior pharynx.
What makes your symptoms worse?	
What makes your symptoms better?	
How many times you had previous episodes in the last 12 months? *	Chronic sinusitis persistence mucosal inflammation for > 12 consecutive weeks despite medical therapy or occurrence of more than 4 episodes a year.
Constitutional symptoms: Fever?*	Indicate presence of infection
Risk factors for Acute Sinusitis:	
Hx of Allergic rhinitis *	Can cause blockage of the sinus ostium.
Hx of viral URTI	Progress to acute bacterial sinusitis
Esophageal reflux (weak)	It can be mistaken for sinusitis. In the pediatric population, it is associated with chronic sinusitis.
Risk factors for chronic Sinusitis:	
Ciliary dysfunction *	
Aspirin sensitivity *	Patients with the triad of Samter (nasal polyposis, aspirin sensitivity, and asthma) suffer from refractory chronic sinusitis
Nasal obstruction *	Previous sinus surgery Allergic rhinitis

	Severe mid-septal deviations Concha bullosa deformity Paradoxically bent middle turbinates Foreign bodies or Hx of nasal polyp Craniofacial anomalies
Immunodeficiency	
Smoking	
hx asthma	
Sarcoidosis	May affect the sinonasal tract, causing chronic sinusitis.
Wegener's granulomatosis	
Associated symptoms: *	<p>Facial pain/pressure: Reported by the patient as headache or discomfort in the anterior face or periorbital region.</p> <p>Dental pain: Suggests acute maxillary sinusitis</p> <p>Cough (common)</p> <p>Myalgia: associated with acute viral sinusitis.</p> <p>Sore throat associated with acute viral sinusitis.</p> <p>Hyposmia (common)</p> <p>Halitosis</p> <p>Ear pain/pressure: Generalised mucosal oedema causes blockage of auditory tube</p>

Epistaxis history:

Epistaxis “bleeding from the nose”

Causes:

Epistaxis is common in children between 3-10 years old. 90% of epistaxis cases are of unknown cause and only 10% can be either local or systemic causes.

<u>Local Causes</u>	<u>Systemic Causes</u>
<ol style="list-style-type: none">1. Blunt Trauma.2. Foreign body.3. Inflammatory Reaction (acute RTIs, chronic sinusitis, allergic or environmental rhinitis)4. Anatomical Deformities (deviated septum)5. Insufflated Drugs (cocaine)6. Intranasal Tumors (nasopharyngeal carcinoma or angiofibroma)	<ol style="list-style-type: none">1. Systemic Bleeding Disorders2. Atherosclerosis3. Drugs (aspirin)4. Hypertension5. Vitamin C & K deficiency

Sites:

Anterior (Little’s area) “**most common**”

Posterior (Vicinity of sphenopalatine foramen)

Management:

- General measures “ABCs”
- Stop the bleeding
 - Digital pressure.
 - Cautery
 - Anterior nasal packing
 - Postnasal packing
 - Arterial ligation
 - Arterial embolization
- Prevent further bleeding

History..

- Introduction.
- Personal Data.
- Chief Complaint.

History of presenting illness:

- Side.
- Onset.
- Frequency.
- Duration.
- Color.
- Triggers “sneezing, nose blowing or picking” or “weather changes”
- Aggravating and relieving factors.
- Severity and estimated blood loss.
- Any previous episodes.
- Family history or bleeding disorder.
- Recent trauma, URTIs or sinusitis.

Review of Systems:

Ask about symptoms of excessive bleeding (easy bruising, bloody stools, hemoptysis, blood in urine, and excess bleeding with tooth brushing, phlebotomy, or minor trauma) and symptoms of anemia.

Past Medical History:

- Hypertension.
- Coagulopathies or any vascular abnormalities.
- Cirrhosis, HIV.

Past Surgical History:

- Any nasal surgeries.

Medications:

- Aspirin or other NSAIDs.
- Antiplatelet drugs (clopidogrel)
- Aspirin and warfarin.

Social History:

- Smoking
- Allergies and blood transfusion

Rhinitis:

Definition: inflammation of the mucosa of the nasal cavity

Allergic Rhinitis:

Common, IgE mediated hypersensitivity response, associated allergic conjunctivitis and asthma may occur

1. Intermittent (Seasonal) less than 4 days/week or less than 4 weeks at a time
2. Persistent (Perennial) 4 or more days/week and 4 or more weeks

Clinical features:

- Sneezing may be in paroxysm.
- Rhinorrhea
- Nasal obstruction and loss of smell
- Itchiness of nose, palate
- Tearing, itching, redness of eyes
- Burning sensation in the throat.
- Symptom related to asthma

Risk factors:

- Age: usually at childhood
- Family hx : genetic component.
- Environmental exposure to allergens : pollen, house dust mite, pets

Pathophysiology phases:

1. Sensitization
2. Subsequent reaction to allergen- early phase
3. Late phase reaction
4. Systemic activation

Investigations:

1- Skin Tests: it's a primary tool in allergy investigation.

2- Laboratory tests:

- Nasal cytology, eosinophil counts in nasal secretion
- Blood IgE level measurement (confirmatory but it is neither sensitive nor specific)

Treatment:

- Prevention: hygiene and avoidance of allergen
- Nasal irrigation with saline
- Antihistamines
- Oral decongestants (pseudoephedrine)
- Topical decongestant
- Other topicals: steroids (fluticasone, beclomethazone,), antihistamines, and ipratropium bromide
- Oral steroids if severe
- Desensitization by allergen immunotherapy
- Surgery: polypectomy, Reduction of inferior turbinate

Complications:

Sinusitis, Otitis media, Nasal polyps, Sleep apnea, Dental overbite, Palate malformations caused by mouth breathing

Rhinitis medicamentosa:

Rebound congestion due to the overuse of intranasal vasoconstrictors. For prevention, use of these medications for only 5-7 d is recommended.

*Congestion reduces nasal airflow and allows the nose to repair itself (i.e. washes away the irritants). Treatment should focus on the initial insult rather than target this defense mechanism.

Vasomotor Rhinitis

- Neurovascular disorder of nasal parasympathetic system affecting mucosal blood vessels
- Nonspecific reflex hypersensitivity of nasal mucosa Caused by: - Temperature change, Alcohol, dust, smoke, Stress, anxiety, neurosis, hypothyroidism, pregnancy, menopause, Parasympathomimetic drugs

Clinical Features:

- Chronic intermittent nasal obstruction, varies from side to side
- Rhinorrhea: thin, watery
- Mucosa and turbinates: swollen
- Nasal allergy must be ruled out

Treatment:

- Elimination of irritant factors

- Parasympathetic blocker
- Steroids
- Surgery (often of limited lasting benefit): electrocautery, cryosurgery, laser treatment or removal of inferior or middle turbinates
- Symptomatic relief with exercise (increased sympathetic tone)

Infectious rhinitis	Specific	Non-specific
Acute	Common cold & influenza	-Virus: rhinovirus, coronavirus, adenovirus, Para influenza virus, respiratory syncytial virus, enterovirus -Nasal obstruction: Pyrexia -Bacterial: strep. Pneumonia, strept. Pyogen *Prophylactic: avoid contact with patient *Therapeutic: Rest, Analgesics, Decongestant, Antibiotic
Chronic	Syphilis, Wegner's granuloma, Medline lethal granuloma, Sarcoidosis, Mycobacteria, Atrophic rhinitis	*Etiology: -Not fully known -Infection -Endocrine or vitamin disturbance *Types: -Primary (without any interference) -Secondary (usually related to surgery)

History:

- What is your **main** symptom? **Describe** your symptom?
- How old were you **when you first** had these symptoms?
- Is there anything that makes it **worse**?
- What **time** of year and what time of day do you have these symptoms?
- **How much** does it bother you? **How often** do you have these symptoms, and **how long** do your symptoms last?
- Do you have **trouble** sleeping or have you missed school or work because of your symptoms?

Allergic rhinitis triad:
sneezing
+nose itching+
rhinorrhea
They may also have:
Nasal or air obstruction

- **Associated symptoms?** : See the box, post nasal drip, smell sensation, cough or throat clearing, eye (itching, redness, tearing), fatigue and malaise (in children), Symptoms of upper respiratory infection (makes allergic etiology less likely)
- **Constitutional Symptoms?** Fever, Weight loss and Loss of appetite
 - Symptom related to **asthma** (cough, shortness off breath, wheeze)
 - If nasal block: do you need to breathe from your **mouth**?
 - If rhinorrhea: **color**? (Clear or colored may exist, though colored rhinorrhea may indicate a co-morbid disease process with AR) **unilateral or bilateral** (uni: could be obstruction or foreign body. Bi: could be rhinitis or sinusitis) **alternating or constant** (alternating is normal nasal cycle)
 - Symptom related to ear infection?
 - Does anyone else in your **family** have same problems, including allergic asthma, eczema?
 - Do you have other **medical** conditions that are related to allergies, such **asthma**, eczema, or rhinitis?
 - Did you have **allergies** as a child? Allergy to pollen, house dust mite, food, pets?
 - What **medicines**, including over-the-counter medicines and dietary supplements, are you taking now? Do these medicines help your symptoms?
 - Have you ever had **surgery** on your nose, throat, or ears?
- **Social History** : Smoking or Passive smoking - Alcohol consumption - Traveling

For mistakes or feedback

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