

*Patient Assessment
Tutorials
Module 13: Head and
Neck Examination*

You can literally save a patient's life!

Head and Neck Examination

EO examination consisting of:

- A **systematic visual inspection** of the skin of the head and neck
- **Palpation** (using fingertips to move or compress structures against tissues) of the lymph nodes, salivary glands, thyroid, and TMJ

Keys to Effective Examination:

- Consistent sequence to include all structures
- Good palpation technique
- Careful documentation of all findings

Patient as Source of Information

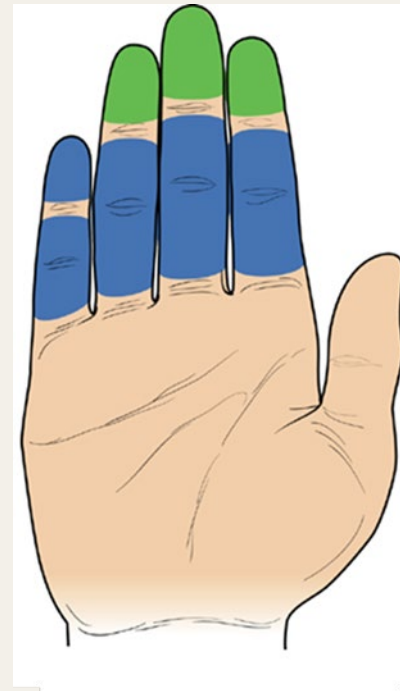
- Remember to request information from the patient.
- They may have information about the duration and may know the cause of a notable finding.
- For example, if you note a scar on the neck, the patient may explain that she had thyroid surgery.

Compression Techniques

To detect abnormalities such as swelling, tumors, or enlarged lymph nodes, the structure must be compressed:

- Against a firm structure, such as bone, OR
- Between the examiner's fingers

Fingertips: The sensitive surfaces shown in green are used to palpate structures of the head, neck, and oral cavity



Compression Techniques

Compression between Fingers of One Hand



Compression between Fingers of Both Hands



Compression Techniques

Compression against Underlying Structure



Compression Against and Over Underlying Structure



Palpation technique

Correct Palpation Technique

Use the fingertips to compress the structure against the underlying tissues, using a circular motion.

Incorrect Palpation Technique

- Involves lightly “walking” or “dancing” the fingertips over a structure
- This light dancing movement is *unsuccessful* in detecting nodules, tumors, swelling, or enlarged lymph nodes.

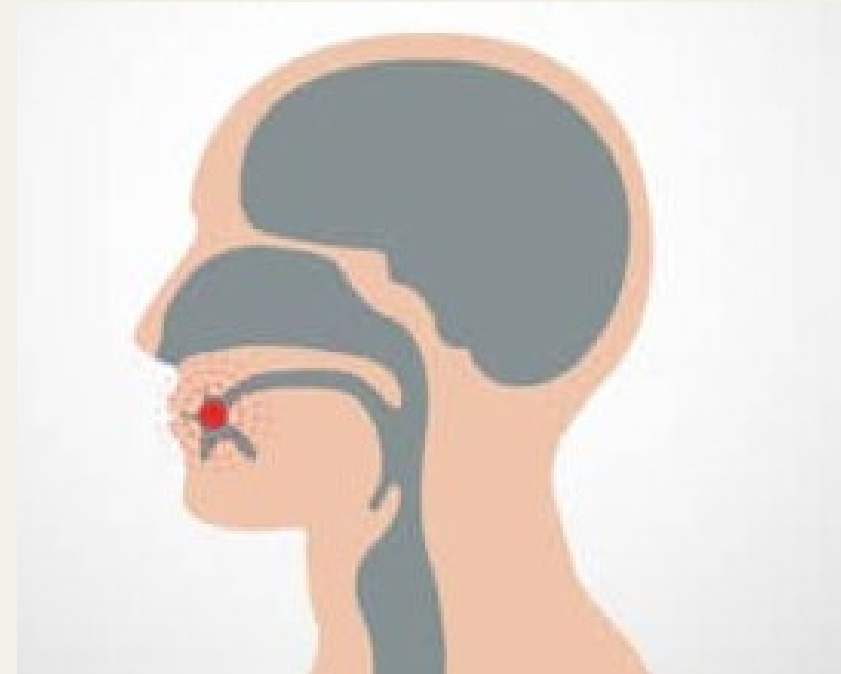
Four Subgroups of the Head and Neck Exam

Overall appraisal of head, neck, face, and skin

Lymph nodes of the head and neck

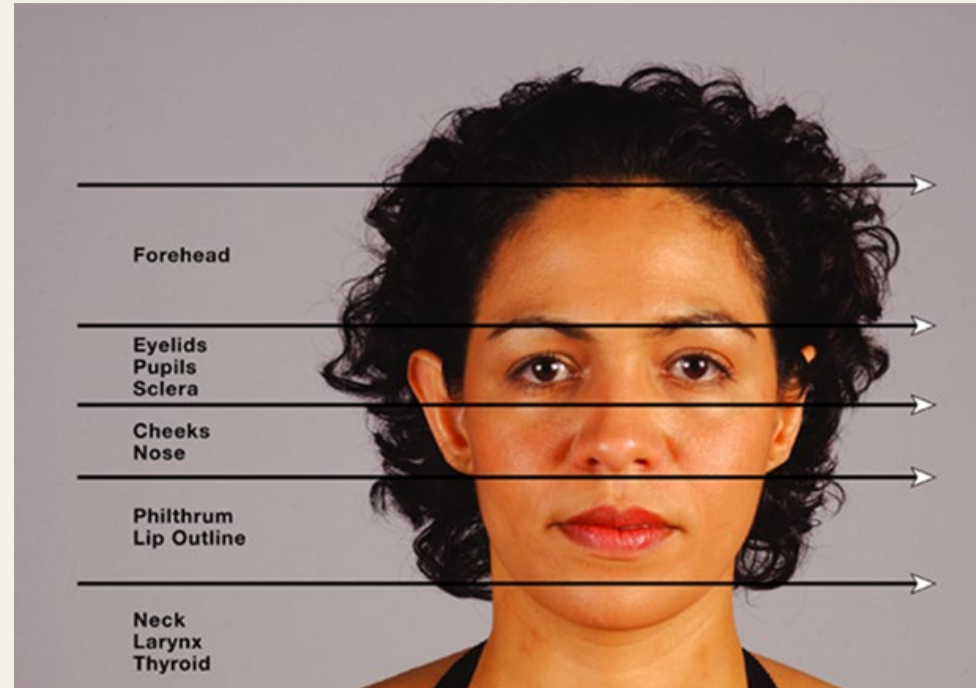
Salivary and thyroid glands

Temporomandibular joint



Overall Appraisal of Head and Neck

- Greet and seat the patient
- While chatting, do a visual assessment of the face and neck.
- Divide face and neck into imaginary zones, noting signs of asymmetry, unequal pupils, skin color changes, or lesions.



Overall Appraisal of Head and Neck

Notable Findings

- Lesions or color changes of the skin
- Uneven pattern of hair loss
- Masses in the neck
- Wounds, bruises, scars
- Swelling of face or neck
- Asymmetry of face or neck

Normal Findings

- Face and neck appear symmetrical.
- Skin is intact and uniform in color.
- Even distribution of hair on the scalp

Anatomy Review: Lymph Nodes of the Head and Neck

Lymphatic system: a network of lymph nodes connected by lymphatic vessels

Plays a role in defense against infection

Lymph nodes: bean-shaped structures that filter and trap bacteria, fungi, viruses, and waste

All waste passes through at least one lymph node, where it is filtered and destroyed.

Lymph Nodes

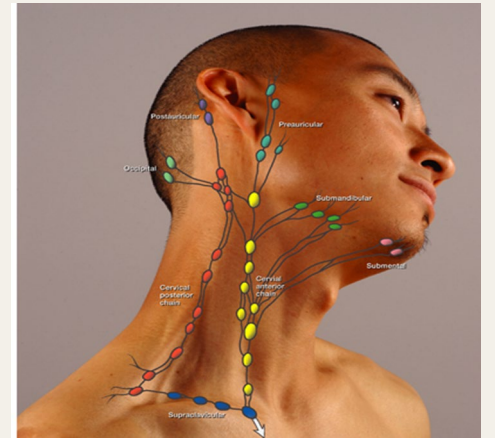
400-700 in the body

170-200 in the neck

Major chains in the anterior and posterior of the neck and under the chin

Vary in size from the head of a pin to baked bean

Enlarge when infected or in the presence of an inflammatory condition or cancer



Lymphadenopathy: Enlarged lymph nodes

- Nodes swell in the area of infection.
- Usually enlarge to a half-inch to 1 inch across with a virus
- Can enlarge over 1 inch with a bacterial infection
- **Painless with cancer**
- Lymphatic system can transport cancer cells throughout the body.



Occipital Lymph Nodes

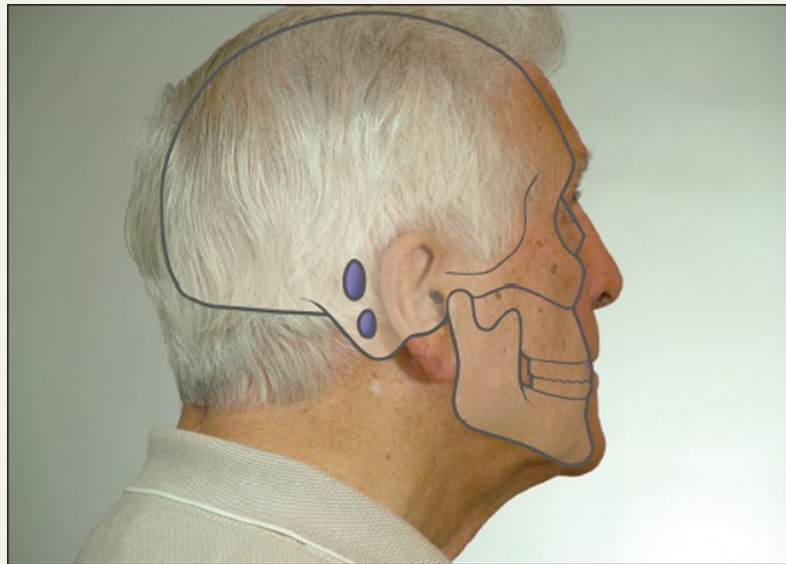
- Visually inspect head, scalp, and ears from behind patient.
- Have patient lift hair so neck is visible.
- Begin at midline of neck and palpate along hairline.
- Use **circular motion** to compress tissues against the underlying bone.

- Position fingers at base of skull.
- Use circular motions to compress tissues against base of skull.
- Cover area slightly above and below hairline.



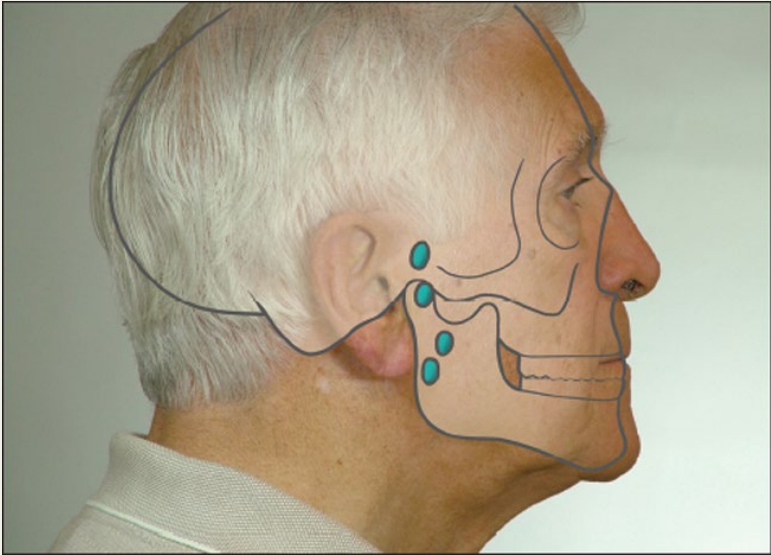
Postauricular Lymph Nodes

- Visually inspect behind each ear.
- Palpate using circular motions to compress tissue against the bone of skull.



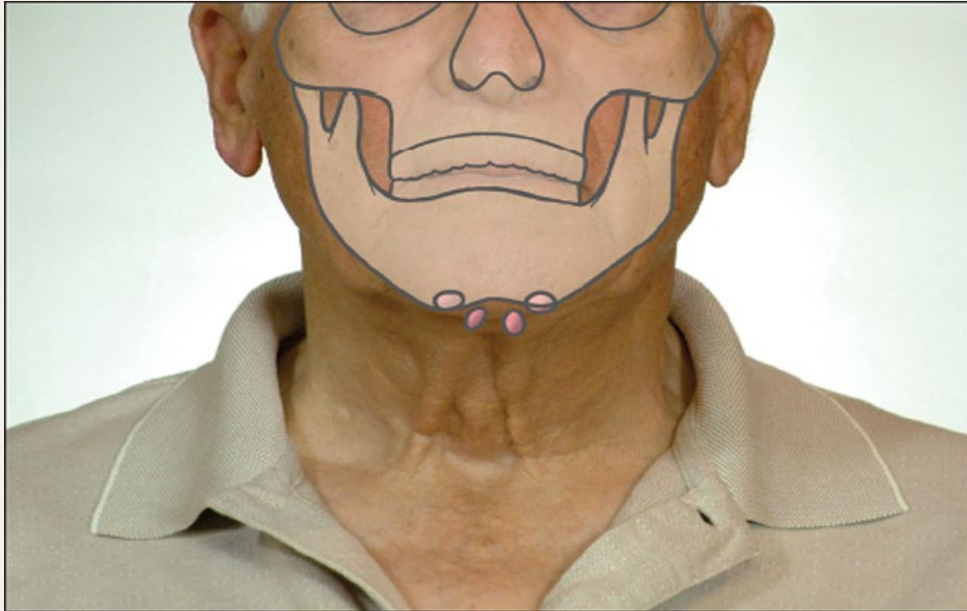
Preauricular Nodes

- Apply circular motions with fingertips against the underlying bone.



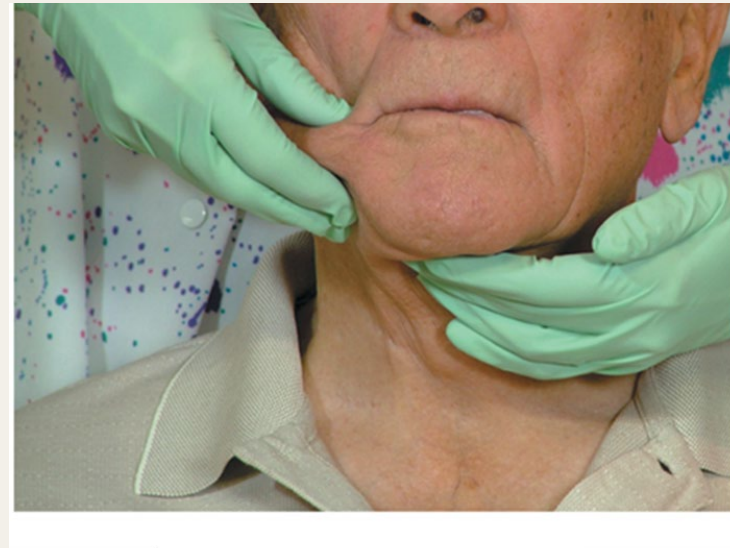
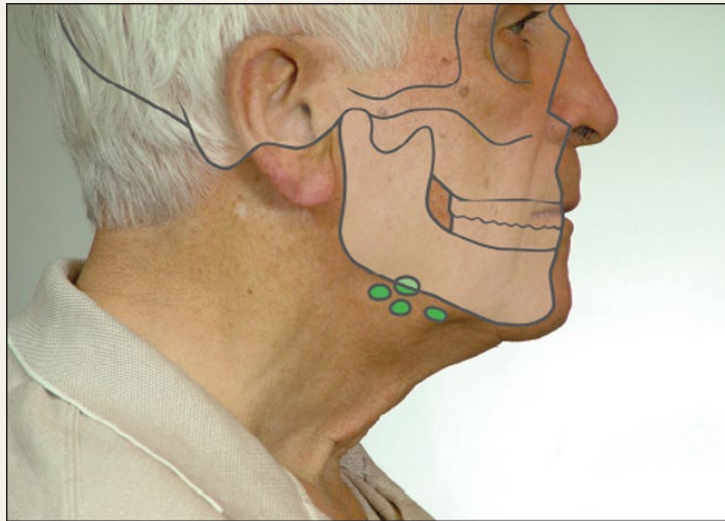
Submental Nodes

- Compress the area behind and between the midline of the mandible between the thumb and index finger.



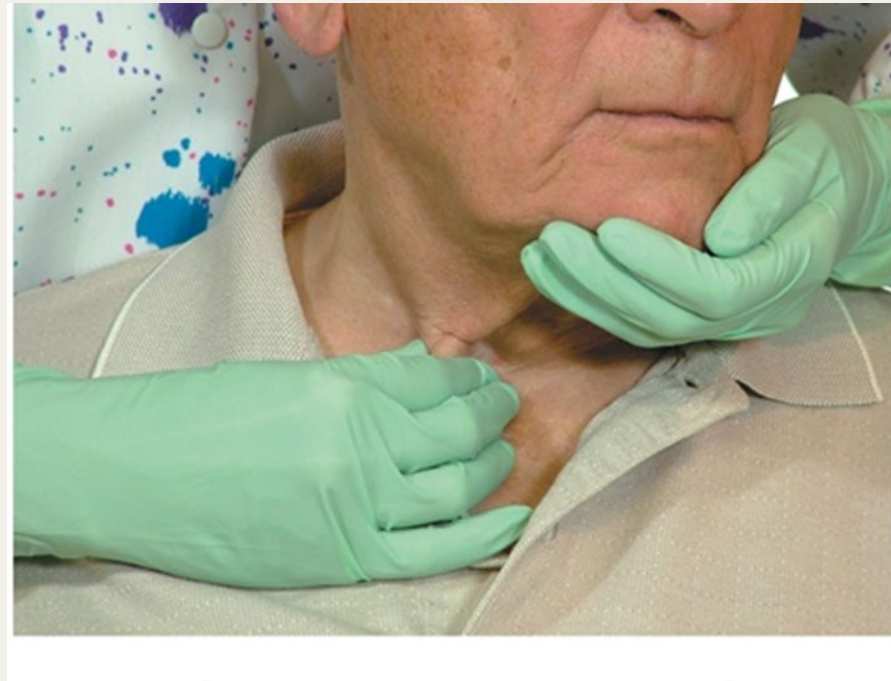
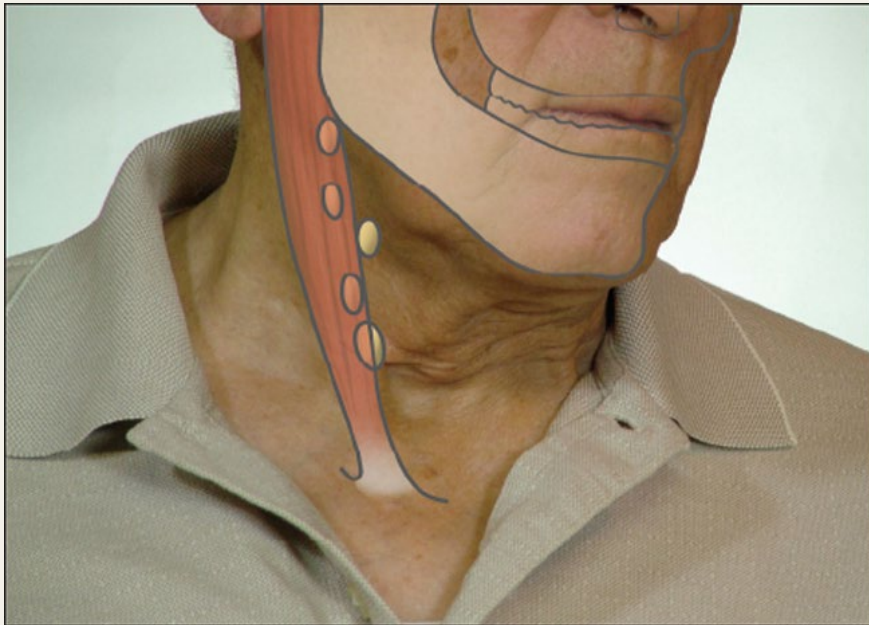
Submandibular Nodes

- Use your LEFT hand to move the tissue under the chin toward the right side of neck.
- **Palpate with right hand.** Roll tissue up and over the border of mandible.
- Continue to palpate as you allow tissue to slowly slide down over the mandible.



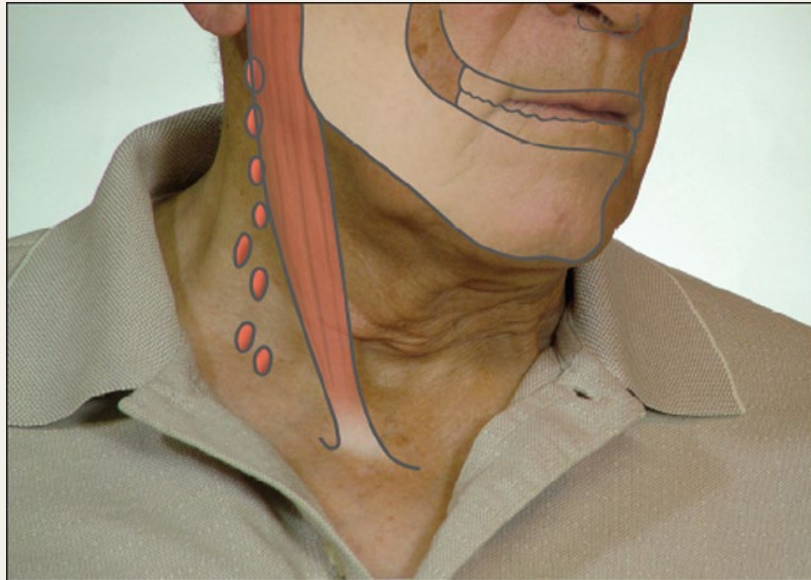
Cervical Nodes Medial to Muscle (Anterior Chain)

- Support the patient's head with left hand.
- With **right hand**, rotate fingertips back and forth over the muscle, covering the entire length of muscle.



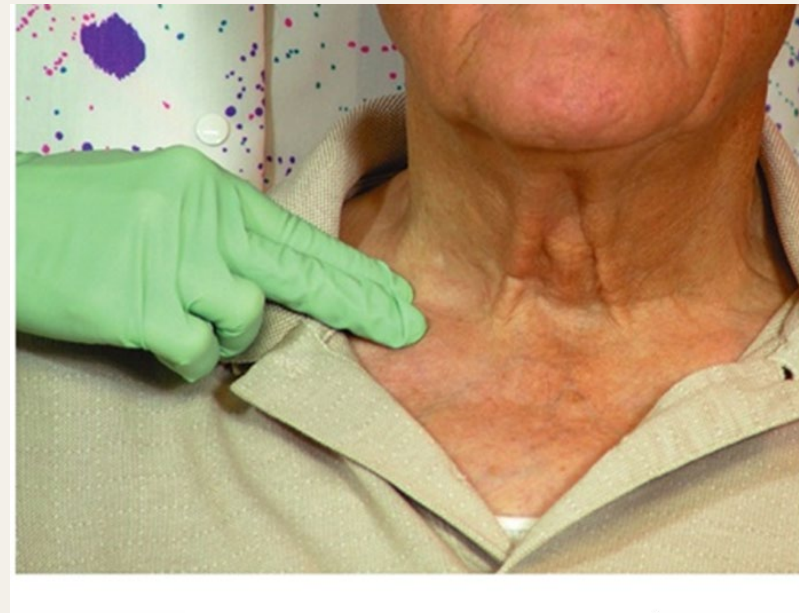
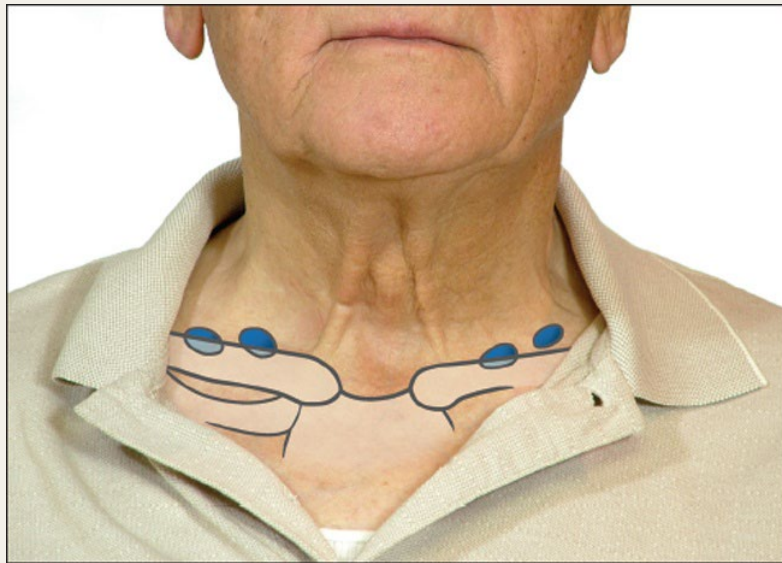
Cervical Nodes Posterior to Muscle (Posterior Chain)

- Position fingertips of **right hand** under the muscle.
- Apply compression against the underlying tissues along the entire length of the muscle.

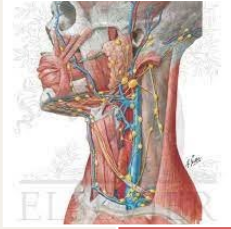


Supraclavicular Nodes

- Apply circular compression above the clavicle on the right side.
- Repeat to palpate the left side.

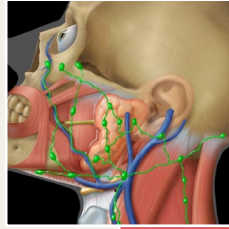


Lymph Nodes



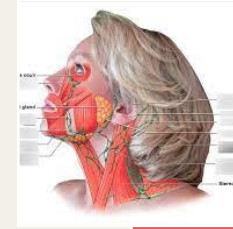
Normal Findings

- Healthy lymph nodes usually are not detectible (cannot be felt).
- No tenderness to palpation.



Infected Lymph Nodes

- Firm
- Tender
- Enlarged and warm
- Bilateral swelling (on both sides of head or neck)
- Freely moveable from underlying structures
- Swollen, feels a bit like a grape
- Following infection, nodes occasionally remain permanently enlarged; small (<1 cm), nontender, with rubbery consistency.



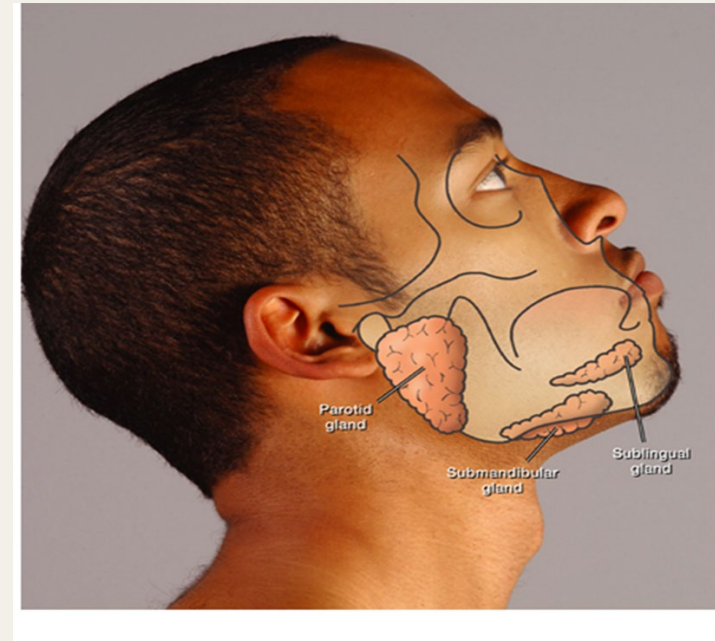
Malignant Lymph Nodes

- Firm
- Not tender
- Matted (stuck to each other)
- Fixed (stuck to underlying tissue)
- Unilateral (enlarged on only one side of head or neck)

Salivary Glands

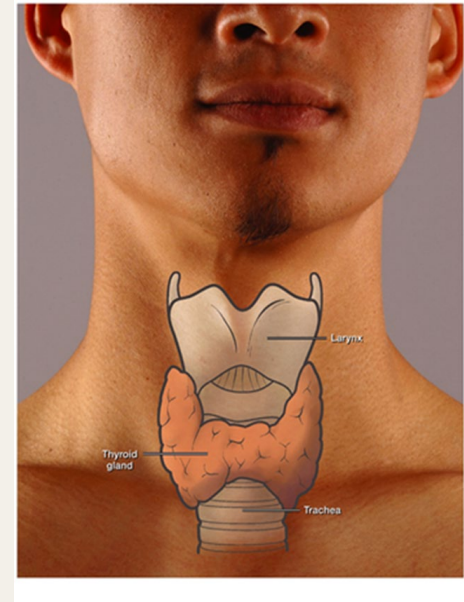
Produce saliva and release it into the mouth through ducts.

- Three main pairs:
 - **Parotid** located on the surface of the masseter muscle between the ear and jaw
 - **Submandibular** sit below the jaw toward the back of the mouth
 - **Sublingual** located under the tongue, beneath the mucous membrane of the floor of the mouth



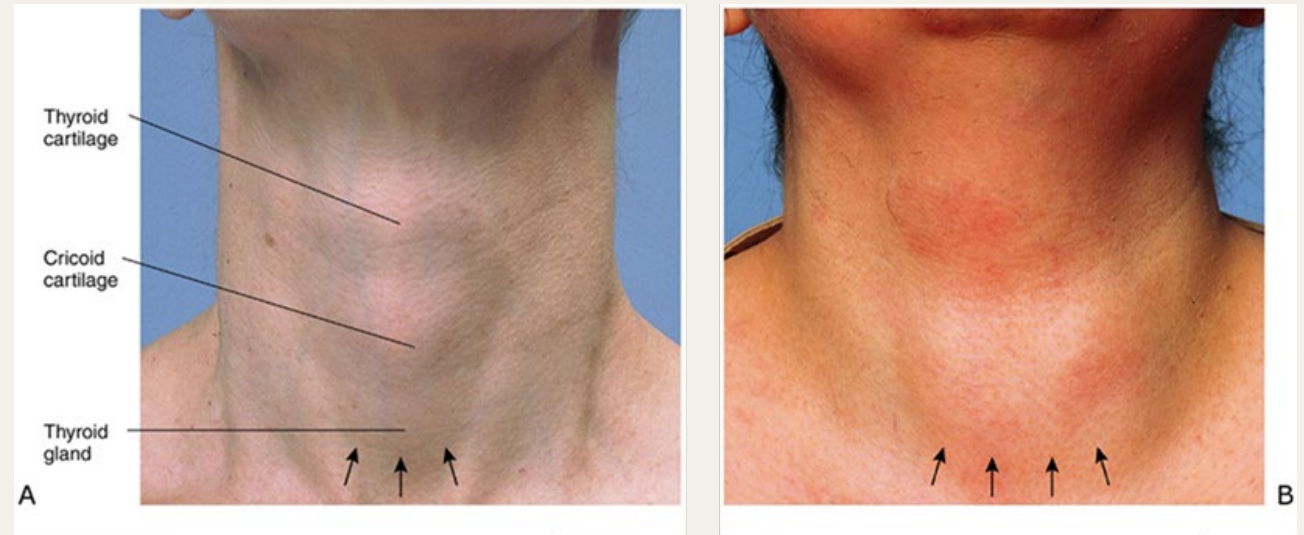
Thyroid Gland

- An endocrine gland, secretes thyroid hormone that controls the body's metabolic rate.
- Disorders of the thyroid gland are very common.
- Has a "bowtie" shape
- Located in the middle of the lower neck
- Covered by skin and muscles
- Sits below the larynx (voice box)
- Sits over the trachea and just above the clavicles



Thyroid Gland: Notable Findings

- Palpable gland (healthy gland cannot be felt)
- Deviates from midline of the neck
- Asymmetrical lobes
- Enlarged lobes
- Nodules present
- Hard, firm consistency
- Fixed to underlying structures



Salivary Glands

- Normal glands are usually not detectible (cannot be felt or seen).
- No tenderness to palpation

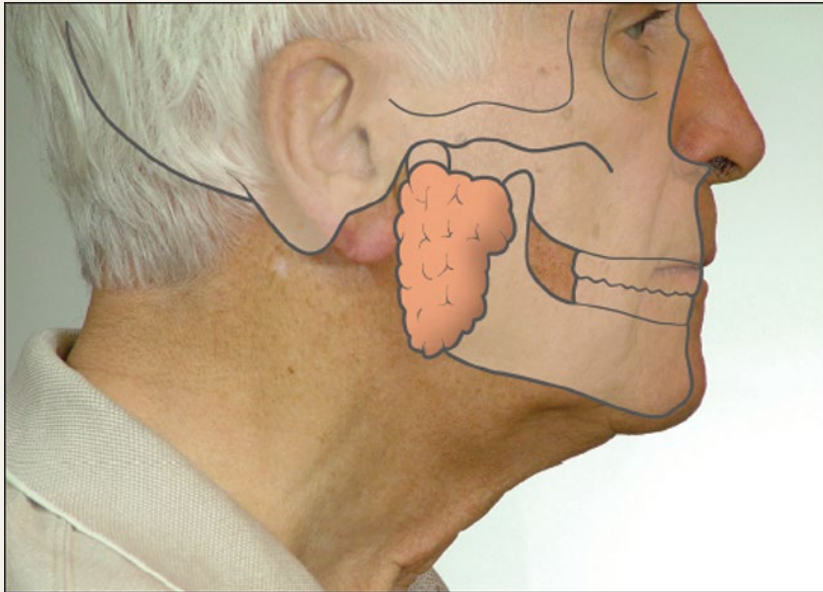
Salivary Glands: Notable Findings

- Swollen or enlarged
- Firm, hard consistency
- Tender to palpation



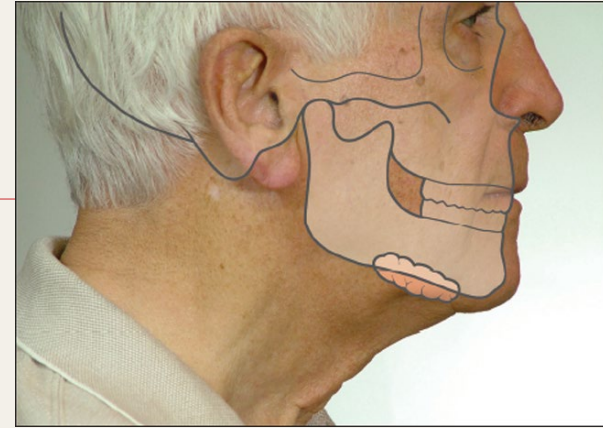
Parotid Glands

- Place palms of hands in front of ears.
- Use circular compression to press the tissue against the cheekbones.



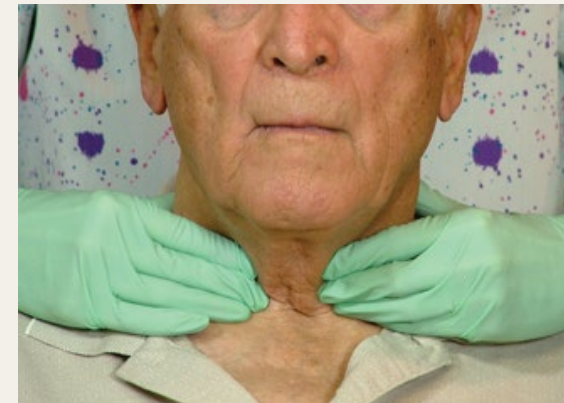
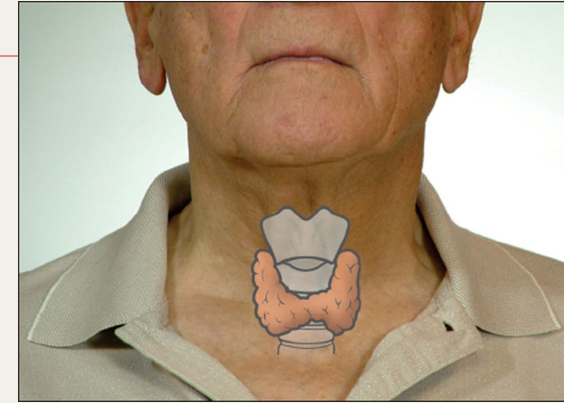
Submandibular Glands

- Place index fingers near the angle of the mandible.
- Move fingertips forward along mandible to locate the slight depression in the border of the mandible.
- This is the antegonial notch.
- Ask patient to press tip of tongue against the roof of the mouth.
- Compress the glands upward against the tensed muscles.



Thyroid Gland

- Normal thyroid gland is not visible.
- Give patient a cup of water.
- Ask patient to swallow. Thyroid gland will move up and down with swallowing.
- Once it is located, you are ready to palpate.
- Left hand: Gently displace the trachea slightly to the right.
- Position right hand between the Adam's apple and sternomastoid muscle. Rest fingers lightly in this position.
- Ask patient to swallow a sip of water. The gland will move up and down beneath your fingers.



Temporomandibular Joint

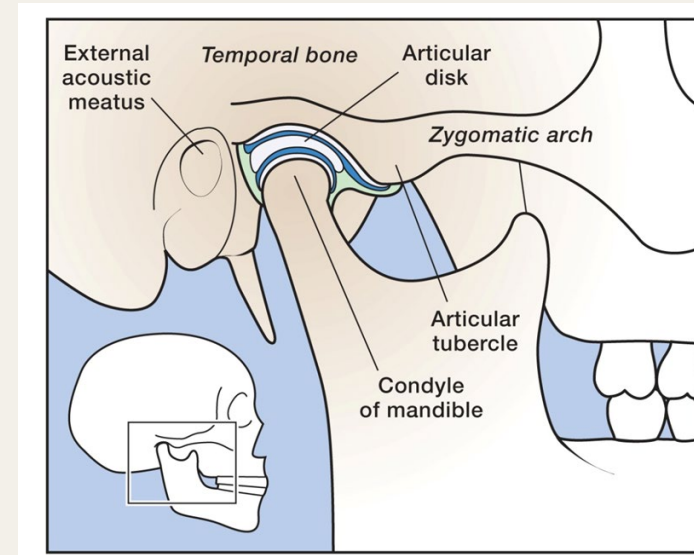
- Connects mandible to the temporal bone at the side of the head
- Allows jaw to open and close and perform excursions
- Cartilage disk keeps skull and mandible from rubbing against each other

Normal Findings

- Smooth motions as the jaw is moved
- Symmetrical movement

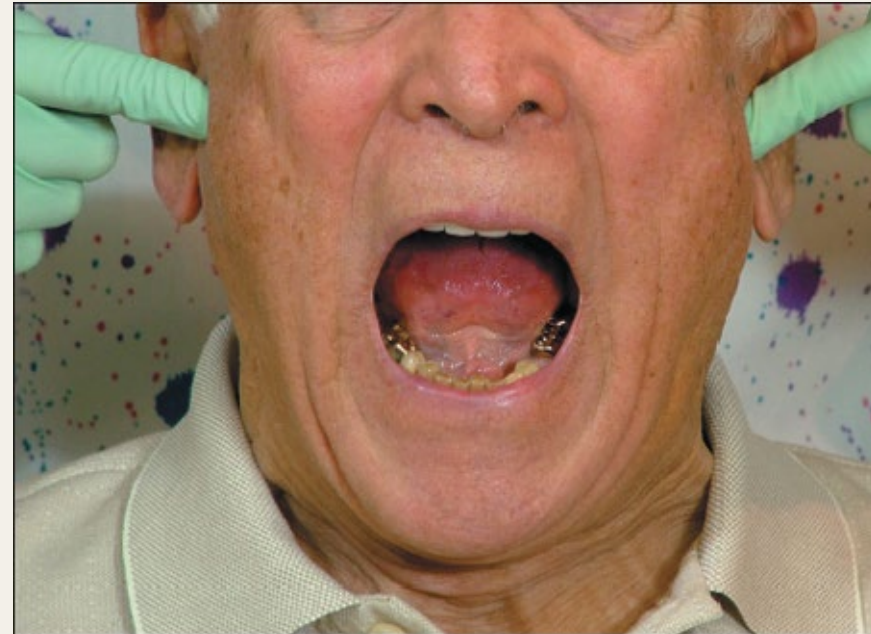
Notable Findings

- Abnormal sounds (popping, clicking)
- Grating sensations as the jaw opens and closes
- Asymmetrical movements
- Limited range of movement (three fingers do not fit in mouth)
- Tenderness or pain reported by the patient



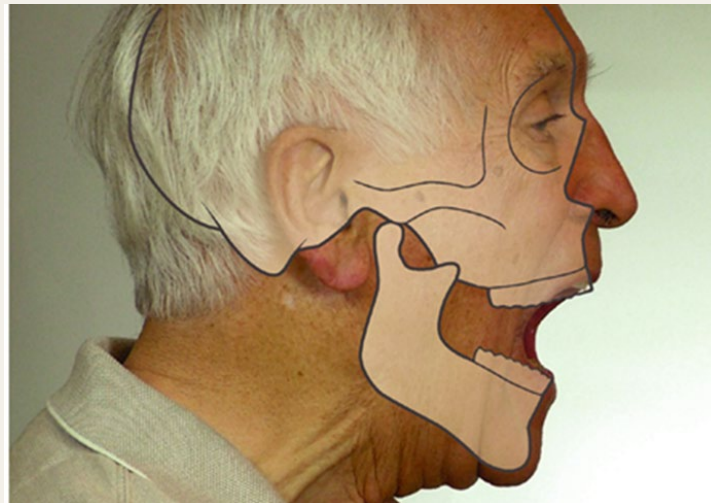
TMJ: Locate the Joints

- Stand behind patient.
- Place index fingers just in front of the tragus of each ear.
- Ask patient to open and close.
- As mouth opens, your fingertips will drop into the joint spaces.



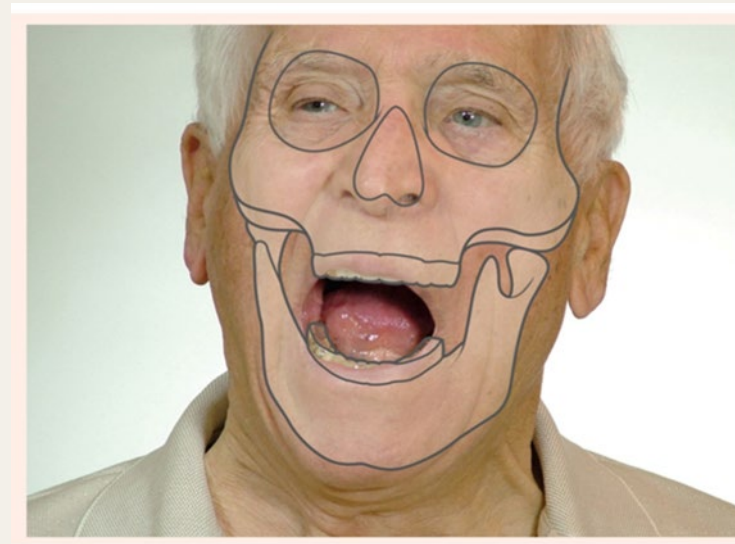
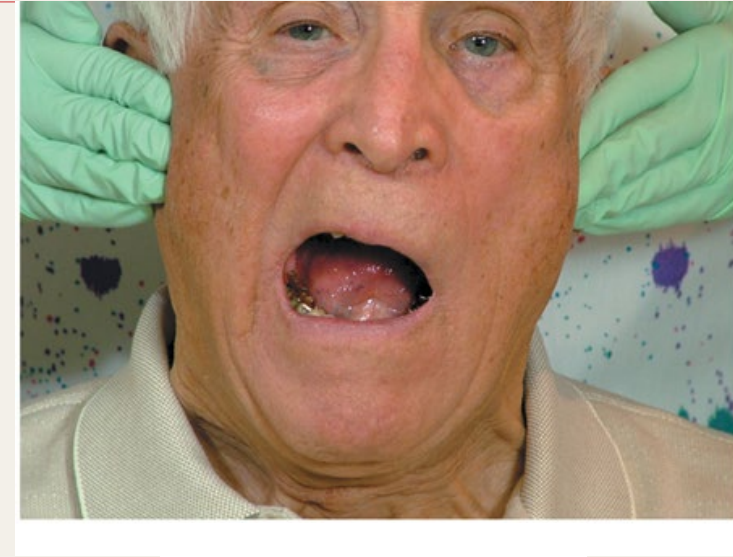
TMJ: Palpate

- Place fingertips over joints.
- Palpate as patient slowly opens and closes several times.
- Note any deviations during opening.



Lateral Excursions: Palpate

- Ask patient to open slightly and move the lower jaw laterally to the right.
- Repeat, moving the lower jaw to the left.
- Ask patient to protrude the lower jaw forward.
- Listen for abnormal sounds, such as popping or clicking.



Recap

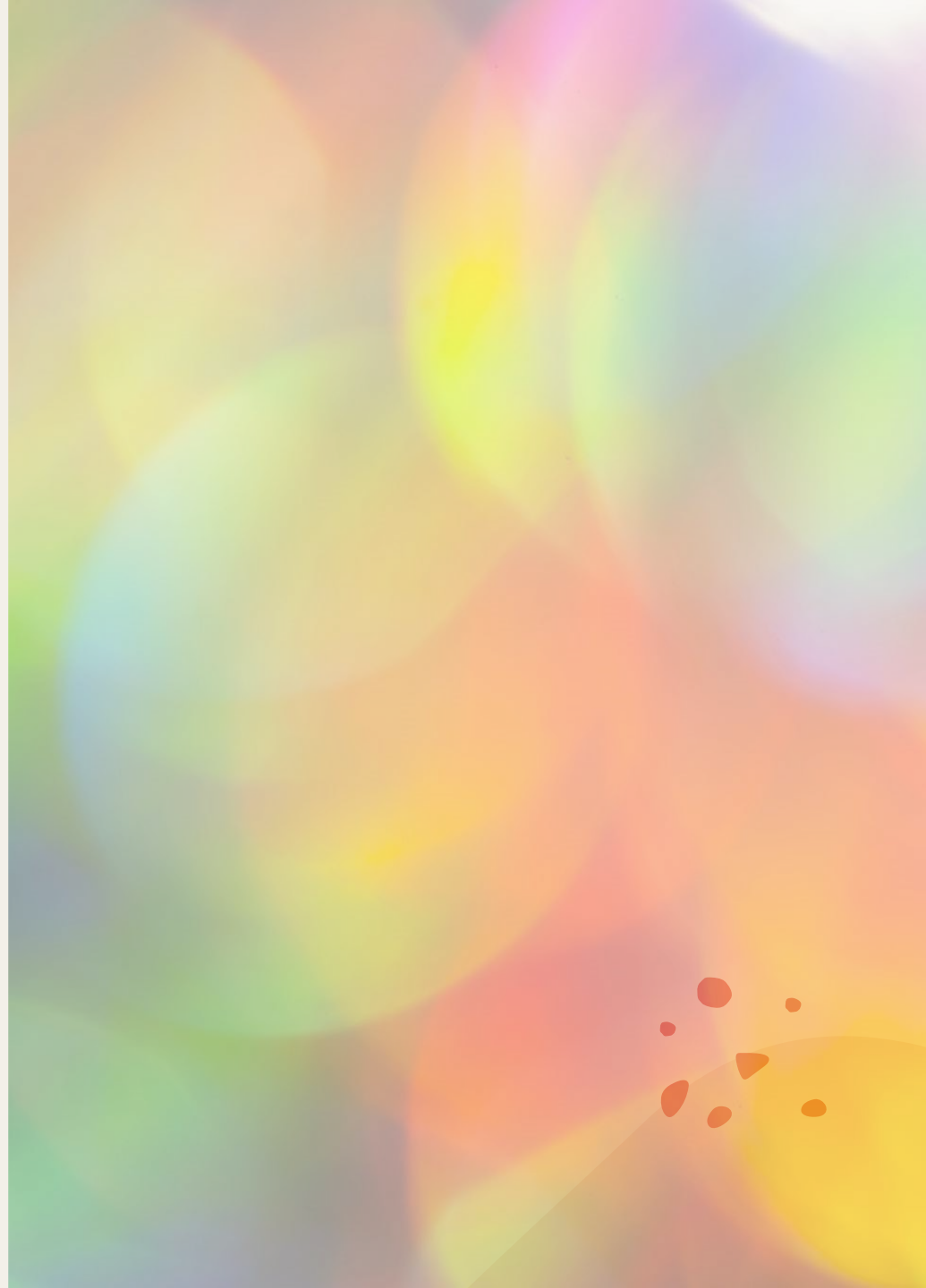
- Parotid glands - located on the surface of the masseter muscle between the ear and jaw
- Submandibular glands - sit below the jaw toward the back of the mouth
- Sublingual glands - located under the tongue, beneath the mucous membrane of the floor of the mouth
- Thyroid gland - located at the midline of the neck, over the trachea and just above the clavicles
- *Normal* glands are usually not detectible.
- The TMJ connects the mandible to the temporal bone at the side of the head.
- The joint allows the jaw to open and close and perform excursions.
- Normal findings are smooth, symmetrical motions as the jaw is opened and closed.

*Patient Assessment
Tutorials*

Module 14:

Oral Examination

DEN 1100



Oral Examination

- A systemic inspection of the oral structures
- Allows the detection of **abnormalities and potentially life-threatening oral malignancies**
- Tissue changes in the mouth that signal the beginnings of cancer **often can be seen and felt easily.**

Oral Cancer

Malignancies of the lip, tongue, gingiva, all of the oral mucosa, oropharynx, and pharynx

- When detected at the **earliest stages**, oral cancer has an **80% survival rate**.
- The ADA recommends that a thorough oral examination should be **a routine part of each patient's dental visit**.
- Oral cancer is the sixth deadliest type of cancer.
- Over 48,000 new cases are estimated to be diagnosed in the United States in 2016.
- **One person** in the United States dies from oral cancer **every hour of every day**.
- The tongue is the site with the highest incidence.

Improving Patient Understanding

Evidence shows that patient satisfaction increased when given information about oral cancer screenings during their appointment.

BOX
14-1

Answering Patient Questions

Why Haven't I Had This (Cancer Screening) Done Before?

Evidence shows that cases of oral cancer are increasing. We believe we should be taking a more active role by extending the scope of health care provided at this clinic/dental practice. Remember, I can see parts of your mouth that you cannot easily see yourself.

What Is Cancer of the Mouth?

Oral cancer is a serious growth that can occur in any part of the mouth.

How Can I Tell if I Have Mouth Cancer?

Most cancers appear as a painless ulcer that does not heal normally. Less often, a white or red patch in the mouth may develop into a cancer.

Am I at Risk for Mouth Cancer?

Anyone can be affected by mouth cancer, whether they have teeth or not. Smoking greatly increases your risk of mouth cancer. Heavy drinking is also a risk.

How Can Mouth Cancer Be Detected Early?

Mouth cancer can often be spotted early by the dentist or dental hygienist.

What Is Involved In Checking the Mouth for Cancer?

I will examine the inside of your mouth with the help of a small mirror.

Risk Factors for Oral Cancer

1. **Age** - Incidence peaks in persons 55 to 74 years.
2. **Gender** - Men are 2 times more likely than women to develop it.
3. **Sunlight** - Exposure is a risk factor for lip cancer.
4. **Tobacco and Alcohol Use** - Use of either one increases risk; use in combination poses even higher risk.

**Tobacco + Alcohol =
Higher risk than
using either alone**

What YOU Can Do

- Provide a complete and **thorough oral examination**.
- Ask the patient about **tobacco and alcohol** use.
- **Inform** the patient about the relationship between tobacco and alcohol use, and oral cancer.
- **Follow up** to determine if patient has followed through on referrals to specialist for suspicious lesions.

Lesions that Might Signal Oral Cancer

- **Leukoplakia (white lesions)** - possible precursor to cancer
- **Erythroplakia (red lesions)** - greater potential for becoming cancerous than leukoplakia



- Any white or red lesions should be reevaluated in **2 weeks**.
- If lesions have not resolved in **2 weeks**, then a biopsy is necessary.
- Any symptom lasting more than **2 weeks** indicates need for a referral to a specialist.

Symptoms the Patient Might Report

- Soreness
- Lump or thickening
- Numbness
- Hoarseness
- Feeling as if something is caught in throat
- Difficulty chewing or swallowing
- Ear pain
- Difficulty moving jaw or tongue
- Jaw swelling that causes ill-fitting dentures

Oral Examination: Seven Subgroups

1. Lips and vermillion border
2. Oral cavity and mucosal surfaces
3. Underlying structures of lips and cheeks
4. Floor of the mouth
5. Salivary gland function
6. Tongue
7. Palate, tonsils, and oropharynx

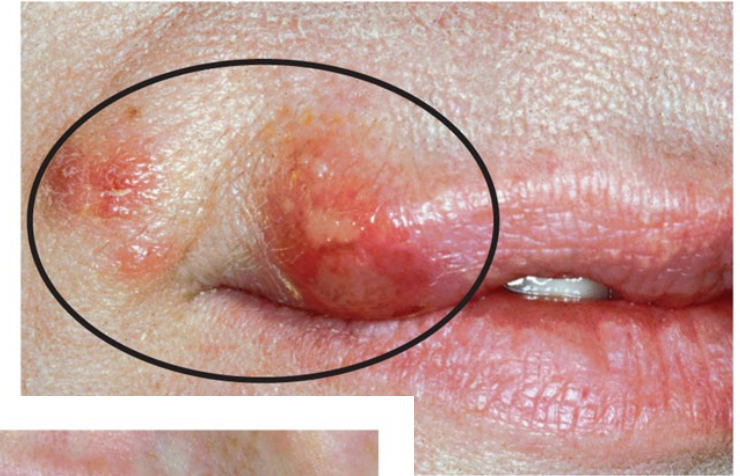
Preparation for Intraoral Examination

- Explain procedure to patient.
- Ask patient to remove dentures; ask female patients to remove lipstick.
- Place patient in **supine position**.



Lips and Vermillion Border: Inspection

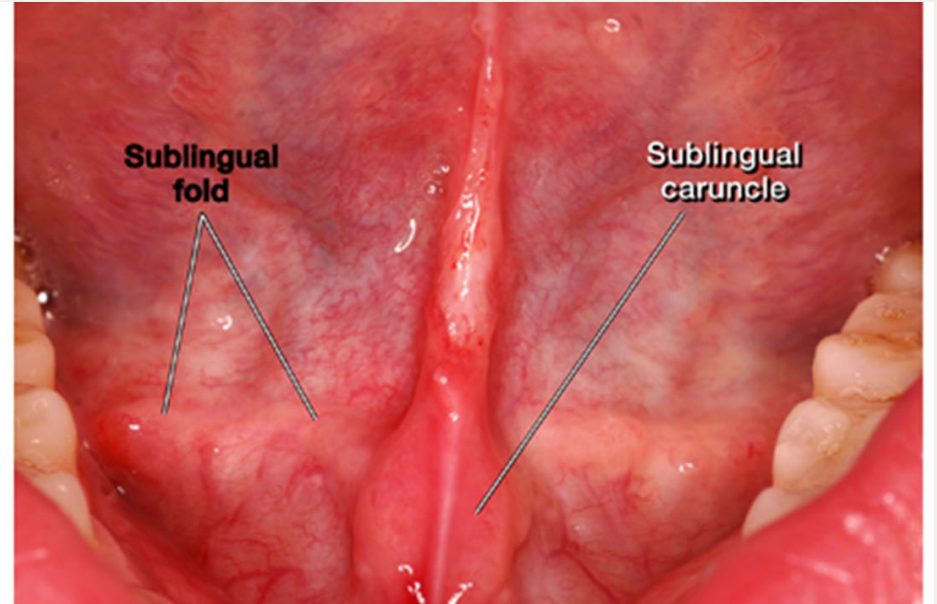
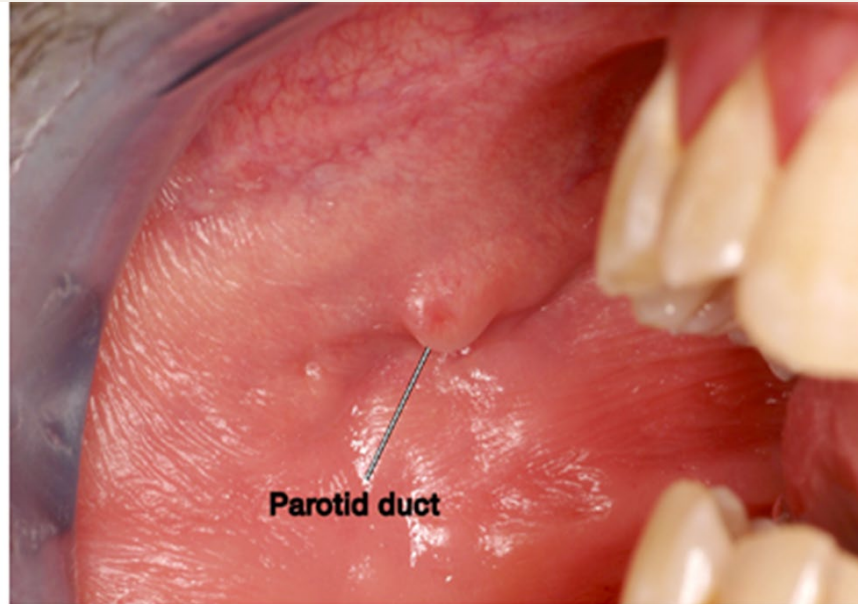
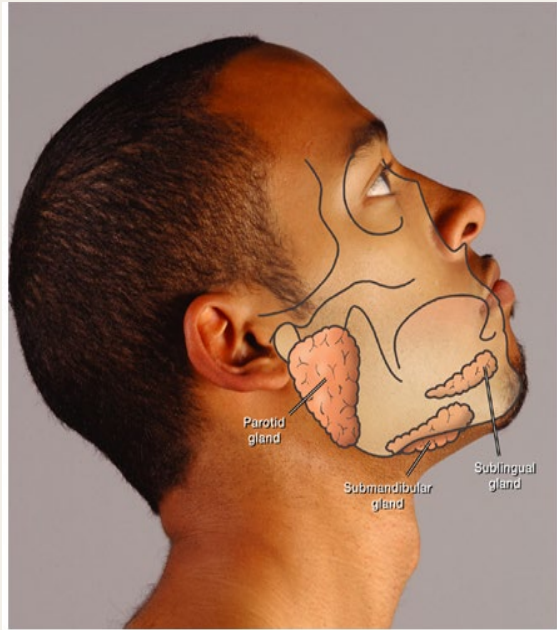
- Visually inspect the lips and vermillion border.
- At rest, the lips touch.
- The surface of the lips is smooth and intact with normal color and texture.
- The vermillion border is even and not raised.
- An example of a notable common finding is a herpetic lesion.



Lips/Vermillion Border: Notable Findings

- Changes in shape or texture (fissuring, crusts)
- Chapped or cracked lips
- Pigment changes or variation in color
- Lip pits
- Irregular vermillion border
- Lips that do not meet
- Cheilosis at commissures
- Herpetic lesions
- Soft tissue lesions
- Swelling of lips
- Trauma, lip biting
- Asymmetrical mouth may indicate neurologic condition, tumor, or infection.

Salivary Glands



Anterior Floor of Mouth: Inspection

- Ask patient to touch tip of tongue to roof of mouth.
- Visually inspect the anterior portion of floor of mouth.



Posterior Region Floor: Inspect

- Ask patient to relax tongue and protrude it.
- Fold damp gauze square in half; grasp tongue between sides of gauze.
- Use **right hand** to pull tongue gently to the left commissure of lip.
- Use **left hand** to apply gentle pressure upward against the submandibular gland.
- This pressure makes it easier to see the posterior floor of mouth.
- Visually inspect floor of mouth.
- Repeat on left side.



Floor of Mouth: Palpation

- **Right index finger** on floor of mouth
- **Left middle and ring fingers** under chin
- Gently move tongue out of way using your index finger.
- Press upward with your extraoral fingers and press downward with your index finger as if you are trying to make the fingers meet.
- Palpate right posterior floor. Repeat on left side.



Floor of the Mouth Notable Findings

- Changes in color or texture
- Lesions or other abnormalities
- Swelling, especially unilateral swelling
- Mucocele or ranula
- Salivary calculi or stones that obscure flow of saliva
- Leukoplakia on floor of mouth
- Hard areas or discomfort

Submandibular/Sublingual Ducts

- Ask patient to raise tongue.
- Use gauze to gently dry area.
- Press down gently with applicator in region of the caruncles.
- A drop or stream of saliva should be evident.



Parotid Salivary Ducts: Examine

- Retract right cheek.
- Dry papilla with gauze.
- Roll applicator from area slightly above papilla down to papilla while applying pressure.
- A drop of saliva will be expressed from papilla.
- Repeat on left side.



Labial Mucosa

Lower Lip: Inspect

- Visually inspect.
- Use **index fingers inside** the mouth, **thumbs on outside**.
- Evert and retract the lip **fully away** from teeth and alveolar ridge.



Upper Lip

- Visually inspect.
- Use **index fingers inside** the mouth, **thumbs on outside**.
- Evert and retract the lip **fully away** from teeth and alveolar ridge.



Buccal Mucosa

Maxilla: Visual Inspection

- Begin with right side of mouth.
- Stretch right cheek **up and away** from maxillary teeth.
- Extend tissue so that no folds remain to conceal a lesion or abnormality.



Mandible: Visual Inspection

- Stretch cheek **down and away** from mandible.
- Next, inspect the buccal mucosa on the **left** side of the mouth.



Mucosal Surfaces:

Normal Findings

- Smooth, intact tissue
- Coral pink or bluish brown in color
- No lesions
- Intact frenum on both arches
- Normal variation: Fordyce granules (ectopic sebaceous glands)

Notable Findings

- Changes in color or texture
- Swelling
- Trauma
- Lesions
- Pale or reddened mucosa
- Dry mucosa
- Linea alba
- Leukoplakia
- Lichen planus

Lips: Palpate

- Palpate lower lip by **compressing the tissues between your index fingers and thumbs.**
- Next, reposition your fingers to palpate the right cheek.
- Move your fingers up to the upper lip.
- Compress the lip **between the index fingers and thumbs.**



Right Cheek: Palpate

- **Left hand** - middle and ring finger extraorally
- **Right hand** - index finger intraorally
- Compress tissue **between your fingers.**
- Palpate the entire length of the buccal mucosa.



Lips and Cheeks: Findings

Normal

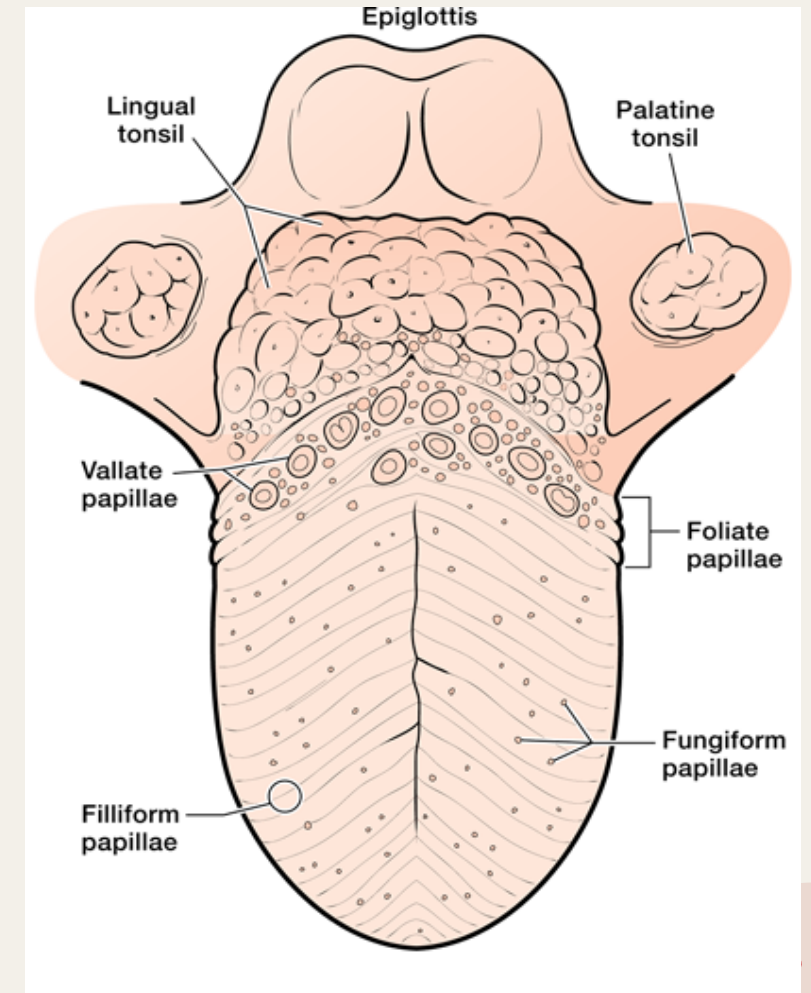
- Firm tissue
- Moist tissue
- Intact tissue
- Minor salivary glands in the lips feel like small beads when palpated.

Notable Findings

- Swellings or nodules
- Changes in texture
- Tenderness upon palpation

Dorsal Surface of the Tongue and Papillae

- Filiform papillae - hairlike, cover anterior 2/3 surface of tongue, taste sensitive
- Fungiform papillae - mushroom-shaped
- Foliate papillae - on lateral border of the posterior 1/3 of tongue, 3 to 5 large, red projections
- Circumvallate papillae - V-shaped row of 8-12 large papillae on posterior surface



Tongue

Ventral Surface: Inspection

- Ask patient to touch tongue to roof of mouth.
- Visually inspect the ventral surface.



Dorsal Surface: Inspection

- Grasp the tongue with damp gauze.
- Visually inspect the entire dorsal surface.



Lateral Borders: Inspect

- Gently pull tongue to the left commissure.
- Evert it to obtain a clear view of the lateral surface.
- Repeat to inspect the other side of tongue.



Tongue: Palpation

- Palpate between your index finger and thumb.
- Be alert for swellings or nodules.



Tongue: Findings

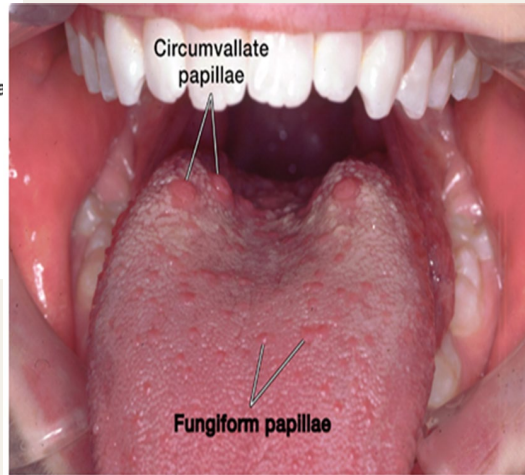
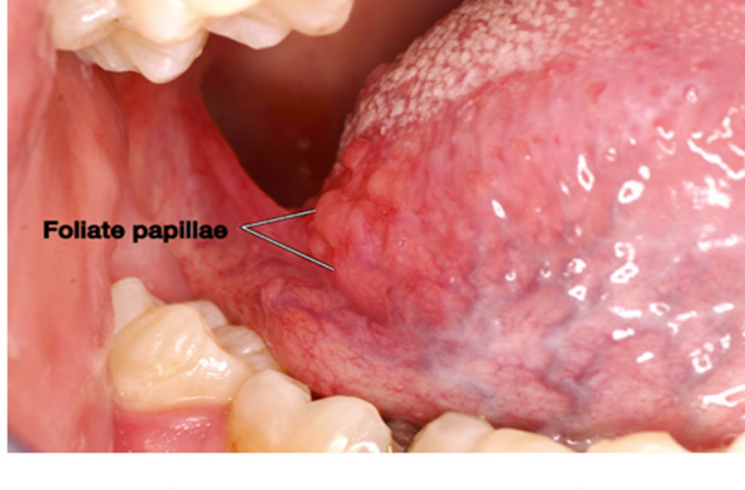
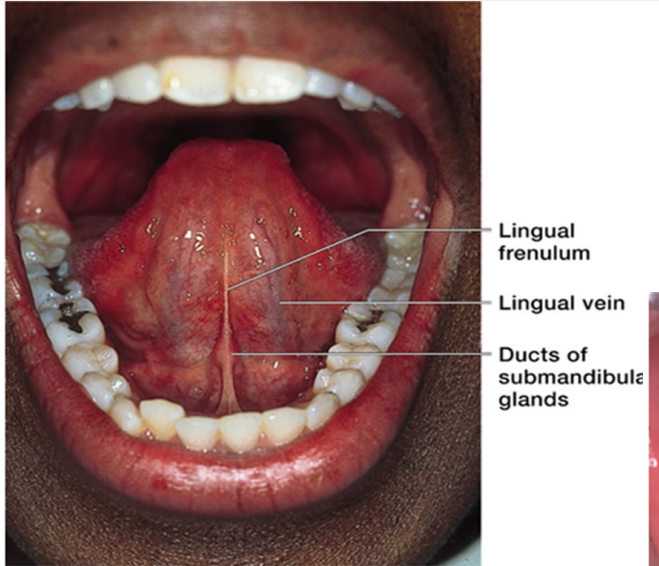
Normal Findings

- Moist, pink, freckled pigmentation
- Symmetrical
- Lingual veins on ventral surface
- Median groove on dorsum
- Three types of papillae on dorsum
- Foliate papillae on lateral surface
- Scalloped edges

Notable Findings

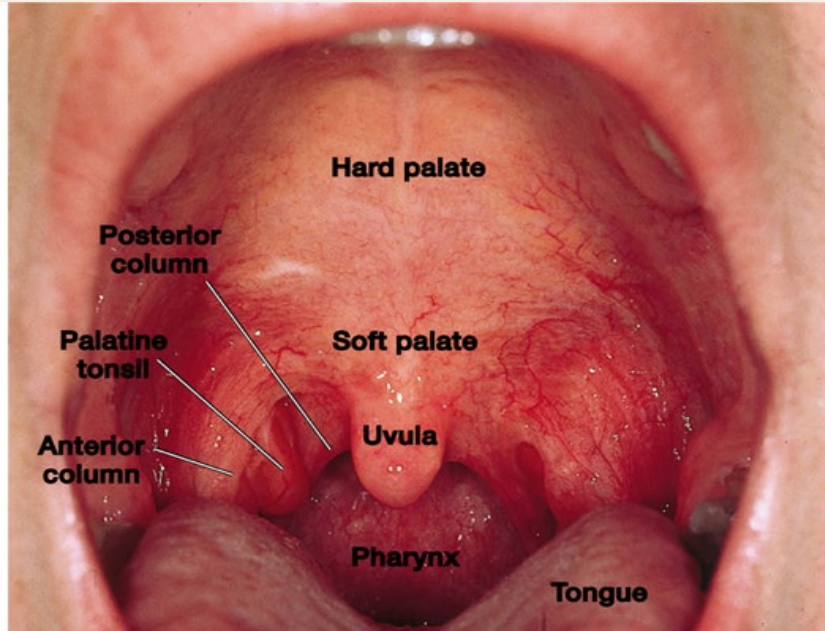
- Ulceration
- Lesions
- Swelling
- Variation in color
- Black, hairy
- Variation in texture
- Asymmetrical shape
- Dry mouth
- Denuded
- Fissured
- Geographic
- Macroglossia
- Ankyloglossia

Landmarks of the Tongue and some Notable Findings



Landmarks of the Hard and Soft Palate, Tonsils, and Oropharynx

Example of Notable Finding



Hard/Soft Palate: Palpate

- Avoid sliding your finger across the palate . . . GAG!
- Use intermittent pressure with the index finger against the hard palate.



Tonsils/Oropharynx: Inspect

- Mirror (reflecting surface down)
- Ask patient to say "ahhhh."
- Apply firm downward and forward pressure with mirror.



Palate/Oropharynx:

Normal Findings

- Pale pink color
- Palatine raphae and rugae
- Firm
- Palatine torus
- Soft palate symmetrical
- Absent, small, or large tonsils
- Uvula at midline

Notable Findings

- Swelling
- Lesions
- Tumors
- Cleft palate
- Changes in color
- Changes in texture
- Spit patch
- Petechiae
- Ulcerations
- Inflamed or enlarged tonsils
- Pus balls on tonsils
- Red and sore throat
- Deviated uvula

Recap: Oral Examination

- A **systemic inspection** of the oral structures allows the detection of **abnormalities and potentially life-threatening oral malignancies**.
- Tissue changes in the mouth that signal the beginnings of cancer **often can be seen and felt easily**.
- One person in the United States dies from oral cancer every hour of every day.
- When detected at the earliest stages, oral cancer has an 80% survival rate.
- The ADA recommends that a thorough oral examination should be **a routine part of each patient's dental visit**.
- A **red or white lesion** should be reevaluated in 2 weeks.