

Head and Neck Exam

Dr. Gary Mumaugh – Physical Assessment

Common or Concerning Symptoms

- Eyes
 - Visual disturbances, spots (scotomas), flashing lights, use of corrective lenses, pain, redness, excessive tearing, double vision (diplopia)
- Ears
 - Hearing loss, ringing (tinnitus), vertigo, pain, discharge
- Nose
 - Drainage (rhinorrhea, congestion, sneezing, nose bleeds (epistaxis))
- Oropharynx
 - Sore throat, hoarseness, gum bleeding
- Neck
 - Swollen glands, goiter



Observation and Palpation

- Inspection face & neck
 - Does anything appear out of ordinary in Head & Neck?
 - Bumps/lumps, asymmetry, swelling, discoloration, bruising/trauma?
- Anything hidden by hair?
- Inspection & palpation of scalp, hair

Head Inspection

- Hair distribution and quantity
- Scalp – scaling, nevi
- Skull – size, contour
- Face – expression, contours
- Skin – color, pigmentation, hair distribution, lesions

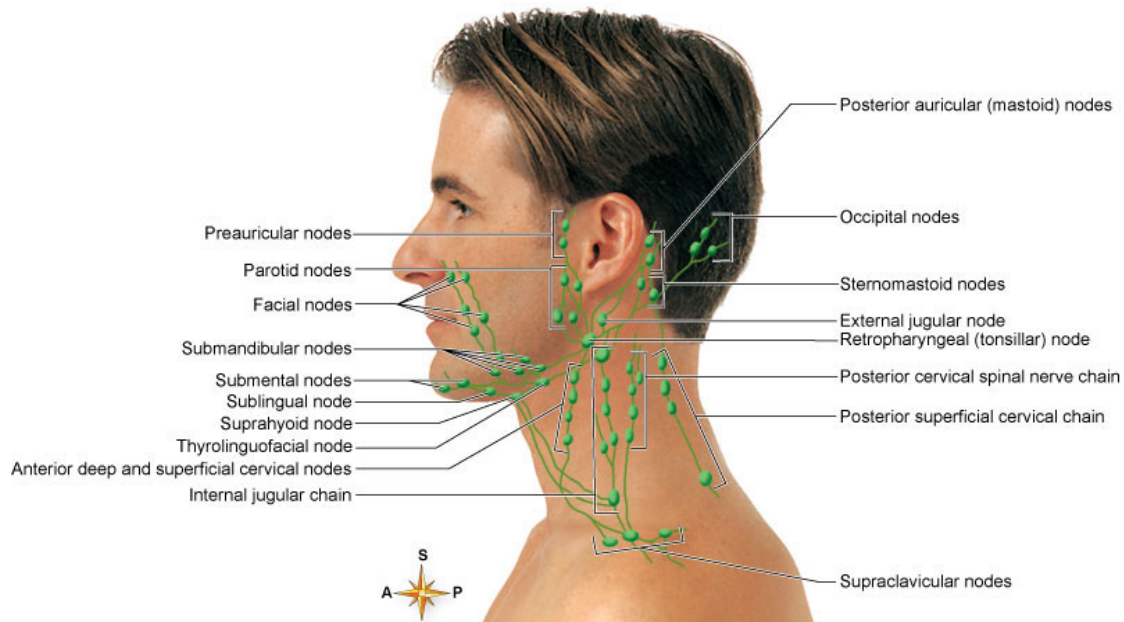


Head Palpation

- Hair texture
- Skull – lumps
- Face – sinuses
- Skin – texture, temperature

Lymph Nodes of Head & Neck Physiology

- Major lymph node groups located symmetrically either side of head & neck.
- Each group drains specific region



Lymph Node Enlargement Major Causes

- Enlarged if inflammation (most commonly infection) or malignancy
- Infection: Acute, tender, warm
 - Primary region drained also involved (e.g. neck nodes w/strep throat)
 - Sometimes get diffuse enlargement in response to generalized infection or systemic inflammatory process (e.g. TB, HIV, Mono)
- Enlarged if inflammation (most commonly infection) or malignancy
 - Malignancy:
 - Slowly progressive, firm, multiple nodes involved, stuck together & to underlying structures.
 - Primary site malignancy could be nodes (e.g. lymphoma) or adjacent region (e.g. squamous cell cancer, breast cancer)

Lymph Node Anatomy & Drainage

- Ant Cervical Nodes drains into throat, tonsils, post pharynx, thyroid
- Post Cervical Nodes drains into back of skull
- Tonsillar Nodes drains into tonsils, posterior pharynx

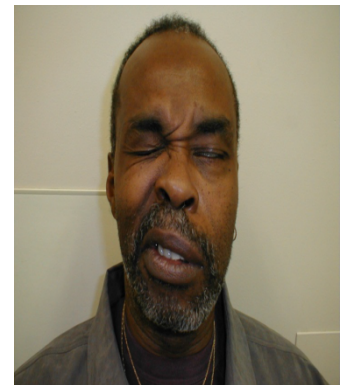
- Sub-Mandibular Nodes drains into floor of mouth
- Sub-Mental Modes drains into teeth
- Supra-Clavicular Nodes drains into thorax
- Pre-Auricular Nodes drains into ear

Lymph Node Exam

- Gently walk fingers along general regions –comparing R to L

Function CN 7 –Facial Nerve

- Observe facial symmetry
 - Motor functions
 - Wrinkle forehead (frontalis)
 - Keep eyes closed against resistance (orbicularis oculi)
 - Smile, puff out cheeks (orbicularis oris)
 - Tense neck muscles (platysma)
- Visceral Motor
 - Lacrimal, submandibular glands, sublingual glands, mucous membranes of nasopharynx, soft and hard palates
- Special Sensory
 - Anterior 2/3 of tongue, soft and hard palates
- General Sensory
 - Small area behind ear



Pathology: Peripheral CN 7 Bell's Palsy

- Patient can't close L eye, wrinkle L forehead or raise L corner mouth
 - L CN 7 (i.e. LMN) Dysfunction

Function CN 5 -Trigeminal

- Sensation: 3 regions of face:
 - Ophthalmic, Maxillary & Mandibular
- Motor
 - Temporalis & Masseter muscles

Function CN 5 –Trigeminal

- Motor
 - Temporalis (clench teeth)
 - Masseter (move jaw side-side)
- Sensory
 - Ophthalmic(V1)
 - Maxillary (V2)
 - Mandibular (V3)

- Corneal Reflex: Blink when cornea touched -Sensory CN 5, Motor CN 7

Testing CN 5 -Trigeminal

- Sensory
 - Ask patient to close eyes
 - Touch each of 3 areas (ophthalmic, maxillary, & mandibular) lightly, noting if patient detects stimulus.
- Motor
 - Palpate temporalis & mandibular areas as patient clenches & grinds teeth

Testing CN 5 -Trigeminal

- Corneal Reflex
 - Tease out bit of cotton from q-tip
 - Sensory CN 5, Motor CN 7
 - Blink when touch cornea with cotton wisp

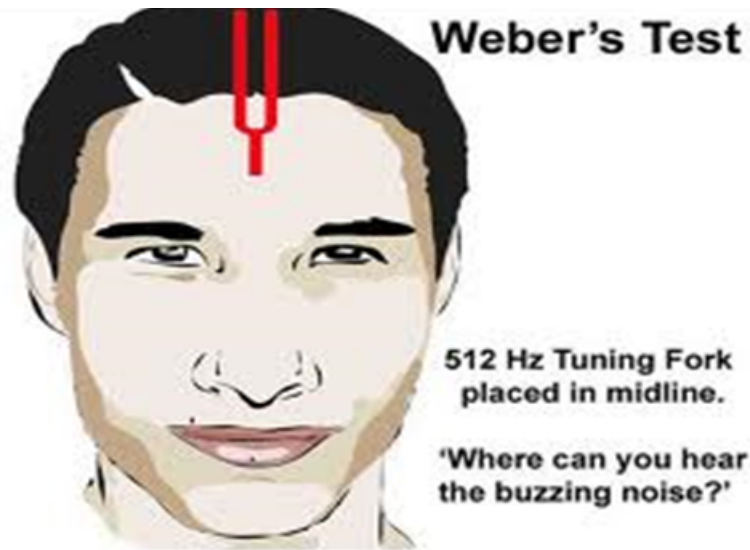


The Ear –Functional Anatomy and Testing (CN 8 –Acoustic)

- Crude tests hearing
 - Rub fingers next to either ear; whisper & ask patient to repeat words
- If significant hearing loss, determine if Conductive (external canal up to but not including CN 8) vs. Sensorineural (CN 8)

CN 8 -Defining Cause of Hearing Loss - Weber Test

- 512 Hz tuning fork - this is well w/in range normal hearing & used for testing
 - Get tuning fork vibrate by striking ends against heel of hand or squeeze tips between thumb & 1st finger
 - Place vibrating fork mid line skull
- Sound should be heard equally R & L which means bone conducts to both sides
- If **conductive** hearing loss (e.g. obstructing wax in canal on L) it will be louder on L as less competing noise.
- If **sensorineural** loss it will be louder on R
- Finger in ear mimics conductive loss



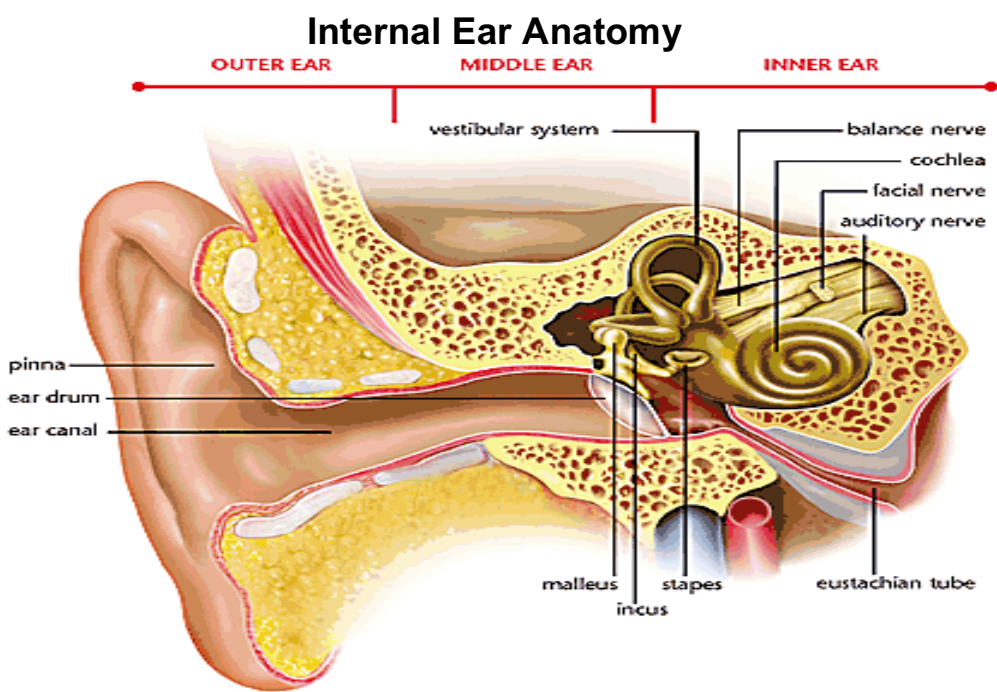
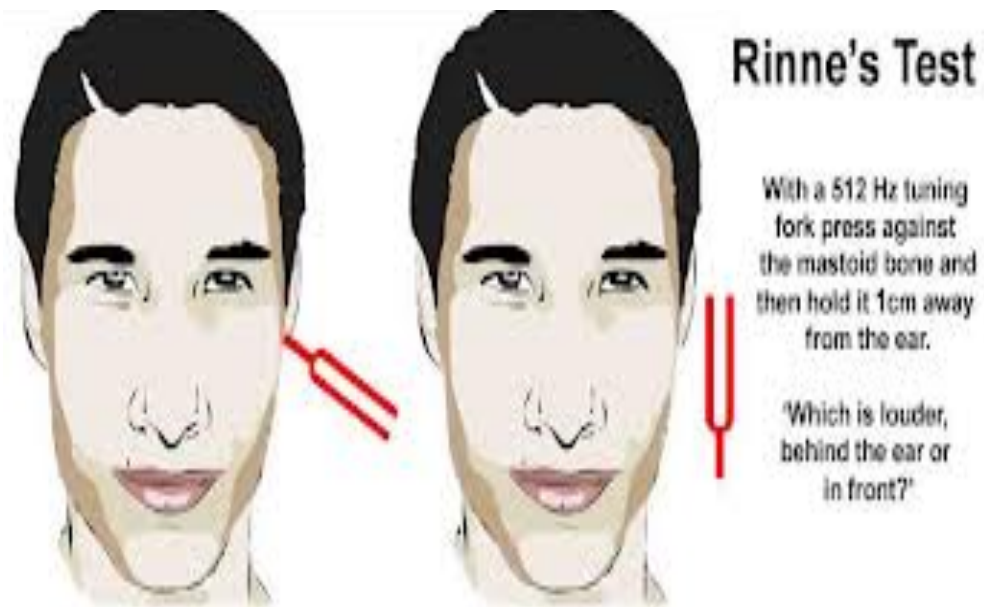
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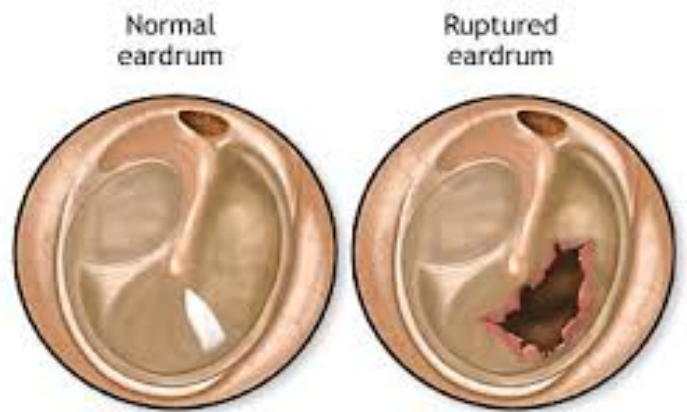
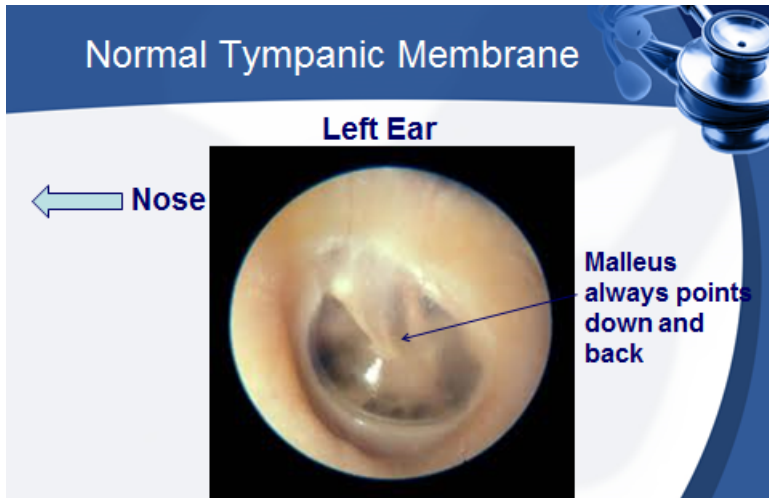
- Place vibrating

512 hz tuning fork on mastoid bone (behind ear).

- Patient states when can't hear sound.
- Place fork next to ear. Should hear it again, as air conducts better than bone.
- If BC better than AC, suggests **conductive** hearing loss.
- If **sensorineural** loss, then AC still > BC







Using Your Otoscope

- Make sure battery's charged!
- Gently twist Otoscopic Head (clockwise) onto handle
- Twist on disposable, medium sized speculum
- Hold in R hand for R ear, L hand for L ear
- Otoscopy Basics
 - Make sure patient seated comfortably & ask them not to move
 - Place tip speculum in external canal under direct vision
 - Gently pull back on top of ear
 - Advance scope slowly as look thru window –extend pinky to brace hand
 - Avoid fast, excessive movement – Stop if painful!





composed of three tunics: sclera, uvea & also is filled with

Eye Anatomy

- Eye layers or retina and vitreous humor.
- **Sclera**- white fibrous tissue, covers the “white” of the eye
- **Uvea** consists of:
 - Choroid- vascular layer
 - Iris- colored part of eye
 - Pupil- contractile center of Iris, responds to light
 - Ciliary body- thickened part of vascular portion of eye between iris and choroid.
 - Lens
 - Anterior/posterior chambers
 - Aqueous humor
- **Retina**- inner most layer of the eye, which receives image formed by the lens
- **Vitreous Humor**- gel-like fluid that fills much of eye, helps maintains curve of cornea

Assessment of Eye: Subjective

- Any visual difficulty- decreased acuity, blurring of vision
- Pain
- Strabismus, diplopia
- Watering of eyes, discharge, redness
- Any history of eye problems
- Use of glasses or contact lenses

Eye Exam - Inspection

- General appearance
- Conjunctiva- pink, moist, without lesions Conjunctiva over sclera- transparent
- Lacrimal gland- palpation, look for excessive tearing, discharge
- Sclera- usually white,even yellowing indicates jaundice
- Orbital area: edema, sagging, lesions, drainage, lacrimal glands
- Eyelids, lashes, brows
- Conjunctivae and sclera
- Movement of eyes: strabismus, nystagmus
- Corneal clarity – shine light directly at persons eyes; should see equal reflection
- Iris – colored part

- Pupils-round,regular,equal, 3-5mm
- Pupillary light reflex- darken room, focus on distant object, shine light from the side results in direct light reflex and consensual light reflex

Eye Inspection

- **Accommodation and convergence:** focus on a distant object then hold finger about 2" from persons' eyes, ask person shift focus to finger as it moves closer to his/her nose...resulting in:
 - Accommodation-pupils constrict
 - Convergence- eyes move inward

Testing Visual Acuity

- 20 feet distance – Snellen eye chart, may wear glasses.
- Visual Acuity is written as a fraction
- Numerator = distance person stood from chart
- Denominator = distance normal eye can read the line of letters

Testing Visual Acuity

- Nearsightedness
- Larger denominator- poorer the vision
- 20/100 = person had to be as close as 20' to read what normal vision person can read at 100'

Testing Visual Fields

- Confrontation Test
 - Face person 2-3' away
 - Person covers L. eye, examiner covers R. look at each others uncovered eyes.
 - Fully extend L. arm – bring your hand in along main axis of visual fields – Superior, inferior, temporal and nasal.
 - Wiggle your fingers and instruct person to indicate when finger is first seen.

Extraocular Muscle Function

- Positions Test
 - Follow finger and keep head stationary, move through 6 fields of gaze, returning to central starting point before going to next field
- Corneal light reflex
 - Reflection of light same spot on each eye.

Inspecting Ocular Fundus

- Ophthalmoscope enlarges view of inner eye
- Beam of light through the pupil illuminates inner structures
- General background of Fundus- color normally varies from light red to dark brown – red, generally corresponding with skin color.

- View should be clear, without lesions obstructing retinal structures.

Ophthalmic Exam

- Darkened room, instruct person to look at distant point and keep focused.
- Hold with your R. hand when inspecting R. eye, lens set at 0. Keep both of your eyes open
- Begin– 15 degrees lateral to person’s line of vision – shine ophthalmoscope toward R. pupil
- Red Reflex – orange red coloration of fundus (anterior chamber) visible through pupil.

Ophthalmic Exam

- Move toward person, till examiners forehead almost touches thumb placed on person’s forehead
- Move scope toward positive numbers, inspect anterior chamber and lens for transparency.
- Rotate lens back to 0, then focus on retinal structures, rotate lens to sharpest focus.
- Inspect optic disc, if can’t find it, follow a vein along and it will lead to disc.

Optic Disc

- **Optic disc-** on nasal side of retina
- **Color-** creamy yellow-orange to pink
- **Shape-** round or oval
- **Margins-** Distinct and sharply demarcated, nasal edge may be slightly fuzzy

Ophthalmic Exam

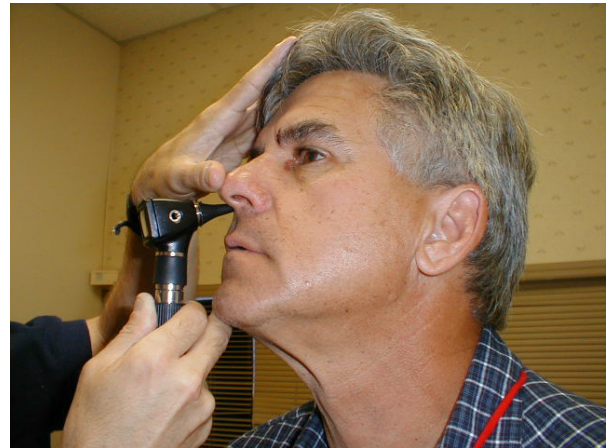
- **Physiologic cup-** is slightly depressed and lighter in color than the remainder of cup; the cup occupies $\frac{1}{2}$ of disc diameter
- **Cup disc ratio-** When visible, physiologic cup is a brighter yellow- white and width is not more than $\frac{1}{2}$ disc diameter.

Summary-Assessment Includes

- Subjective data
- Inspection
- Visual Acuity
- Visual Fields
- EOMuscle functioning
- Ophthalmic Exam

The Nose

- Observe external structure for symmetry
- Check air movement through each nostril separately.
- Smell(CN 1 –Olfactory) not usually assessed
 - Screen w/alcohol pad smell test
 - Detect odor from pad when presented @ 10cm
 - Test each nostril separately
- Look into each nostril using otoscope w/speculum
 - Note color, septum (medial), turbinates (lateral)



Sinuses

- Normally Air filled (cuts down weight of skull), lined w/upper respiratory epithelium
 - Keeps antigens/infection from lung
- Maxillary & frontal accessible to exam (others not)
- Exam only done if concern of sinus infection or pathology

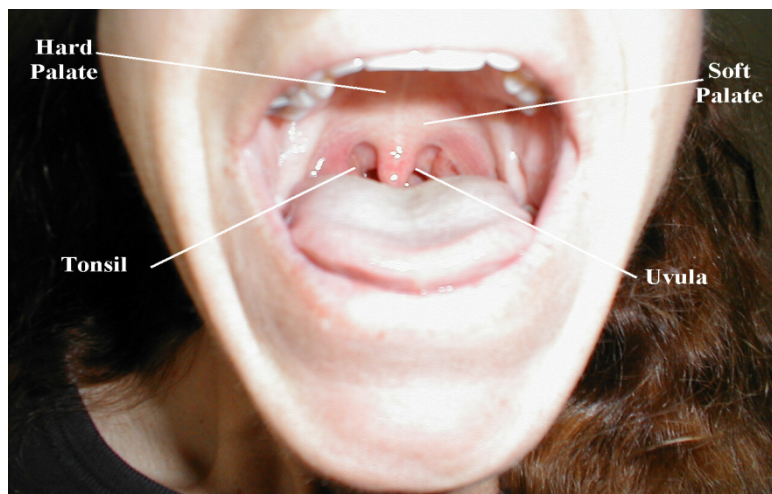
Sinuses Examination

- Palpate (or percuss) sinus
 - elicits pain if inflamed or infected
- Transilluminate
 - room must be dark
 - normally, light passes across sinus
 - visible thru roof of mouth
 - with infection will have swelling & fluid which prevents transmission
- Placed otoscope on infra-orbital rim while look in mouth for light



Oropharynx

- Inspect posterior pharynx(back of throat), tonsils, mucosa, teeth, gums, tongue –use tongue depressor & light–otoscope works as flashlight
- Can grasp tongue w/a gauze pad & move it side to side for better visualization
- Palpate abnormalities(gloved hand)



Oropharynx: Function

- CN 9
- (glossopharyngeal), CN10 (vagus), CN12 (hypoglossal)
- Uvula midline-CN 9
 - Stick out tongue, say “Ahh”–use tongue depressor if can’t see palate/uvula rise -CN 9, 10
 - Gag Reflex–provoked w/tongue blade or q tip -CN 9, 10
 - Tongue midline when patient sticks it out
 - CN 12 check strength by directing patient push tip into inside of either cheek while you push from outside

Anatomy &

Selected Pathology of Oropharynx

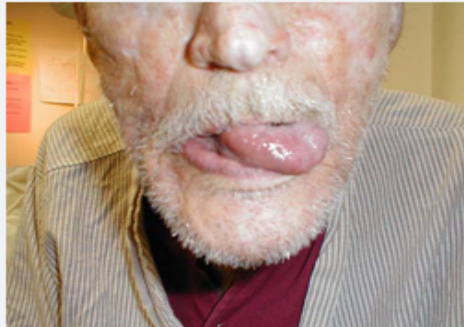
Left CN 9 Palsy – note uvula pulled to right



Left peri-tonsillar abscess –uvula pushed to R

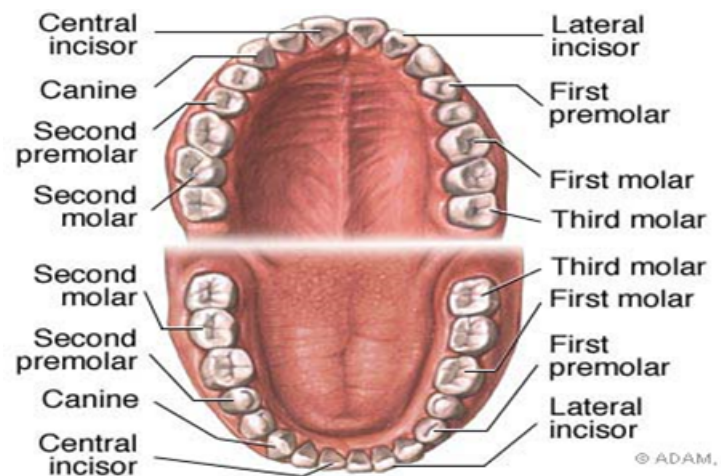


Left CN 12 palsy –tongue deviates Left



What about the Teeth?

- Dental health has big implications
 - Nutrition (ability to eat)
 - Appearance Self esteem
 - Employability
 - Social acceptance
- Systemic disease
 - Endocarditis, ? Other
 - Local problems:Pain, infection
- Profound lack of access to care



Anatomy & Exam

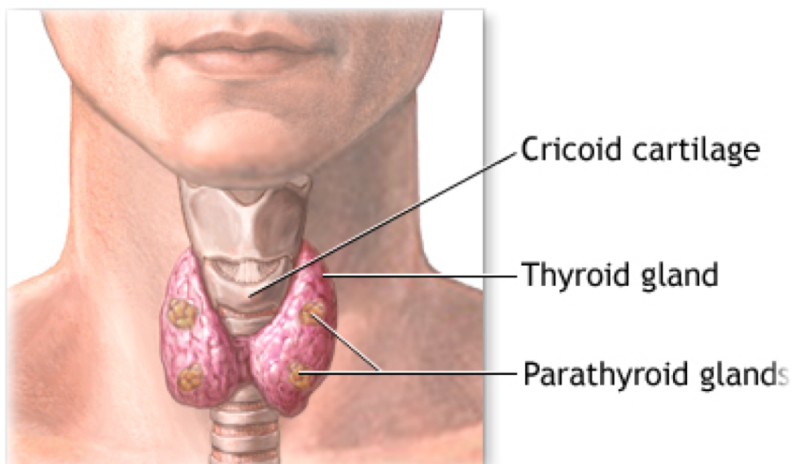
- 16 top, 16 bottom
- Examine all
- Observation teeth, gums
- Gloved hands, gauze, tongue depressor & lighting if abnormal
- Look for
 - General appearance ? All present
 - Broken, Caries, etc?
 - Areas pain, swelling

- ? Infection
- ? Tooth, gum, extent

Meth Teeth



Thyroid Anatomy



Thyroid Exam

- Observe (obvious abnormalities, trachea)
- From front or behind
 - Identify landmarks(touch and vision)
- Palpate as patient swallows(drinking water helps)
- Focal or symmetric enlargement, nodules.

Neck Movement CN 11 –Spinal Accessory

- Turn head to L into R hand for function of R SCM
- Turn head to R into L hand for function of L SCM
- Shrug shoulders into your hands

Summary of Skills

- Wash hands
- Observation head & scalp; palpation lymph nodes
- Facial symmetry, expression (CN 7)

- Facial sensation, muscles mastication (CN 5)
- Auditory acuity; Weber & Rinne Tests (CN 8)
- Ear: external and internal (otoscope)
- Nose: observation, nares/mucosa (otoscope)
 - Smell (CN 1)
- Summary Of Skills
- Sinuses: palpation, transillumination
- Oropharynx: Inspection w/light & tongue depressor□uvula, tonsils, tongue (CNs 9, 10, 12); “Ahh”; Gag reflex; Teeth
- Thyroid: Observation, palpation
- Neck/Shoulders: Observation, range motion, shrug (CN 11)