



TMJ
Assessment

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TEMPORAL BONE

GREATER WING

ZYGOMATIC BONE

TEMPOROZYGOMATIC ARCH

ARTICULAR TUBERCLE

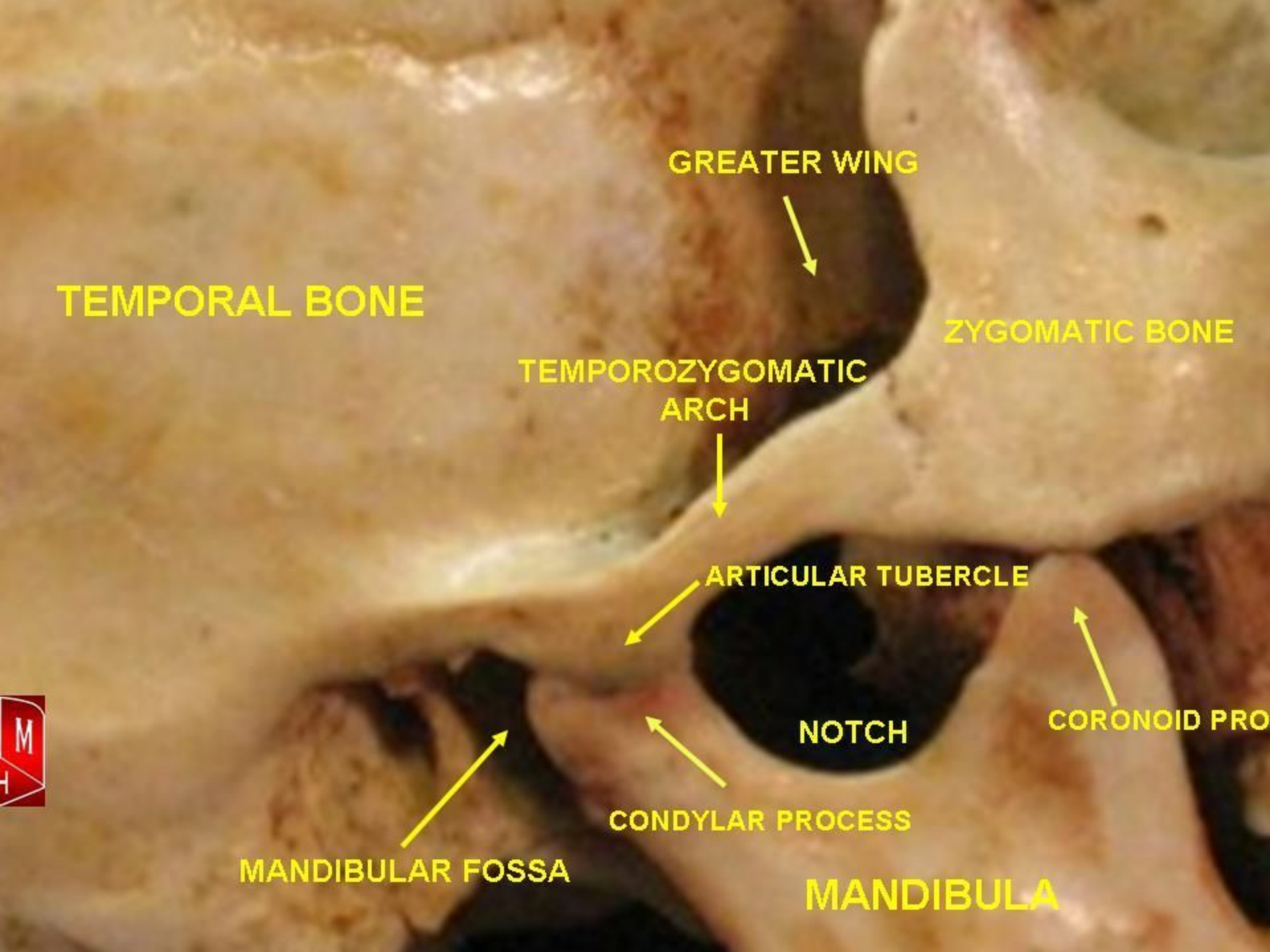
NOTCH

CORONOID PRO

CONDYLAR PROCESS

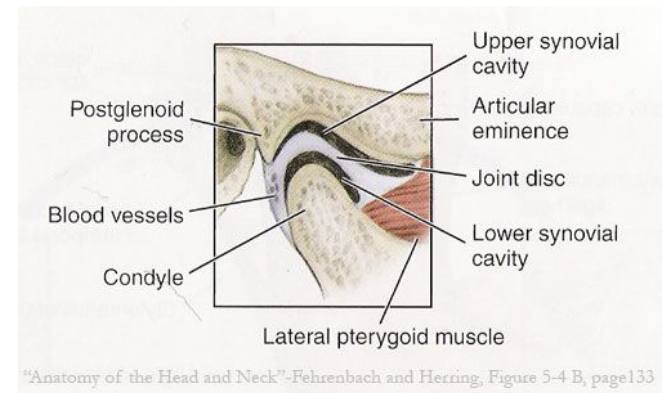
MANDIBULAR FOSSA

MANDIBULA



Anatomy Review

- Synovial, hinge type joint
- Movements that occur at this joint are **gliding** movements in the upper cavity and **rotation** movements in the lower cavity
- Meniscus or disc exists between mandibular fossa and condylar head
- The disc provides:
 - Lubrication to the joint
 - Congruent surface for gliding
 - Rotation of the joint to start when the lateral pterygoid muscle draws the disc anteriorly

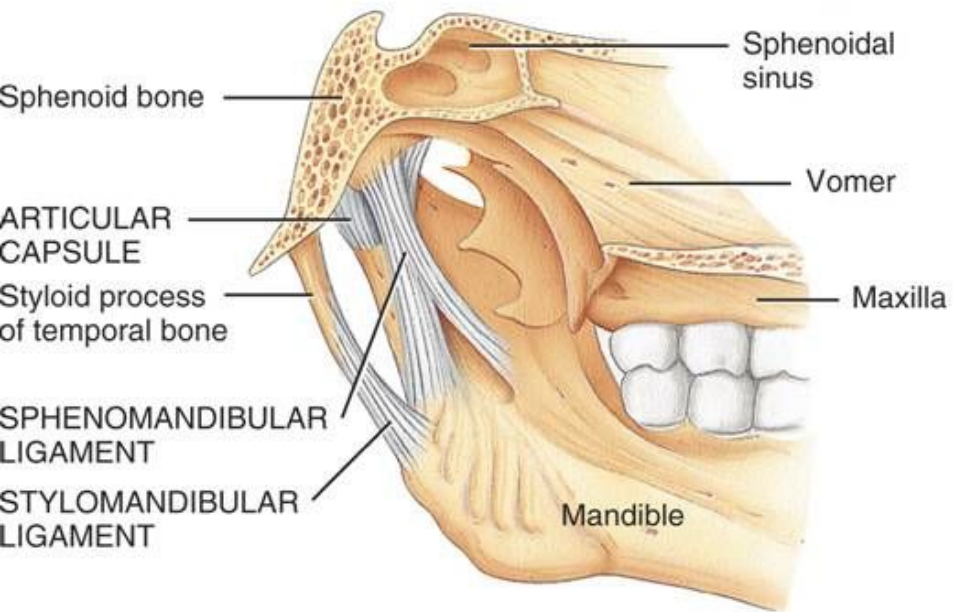


Anatomy Continued

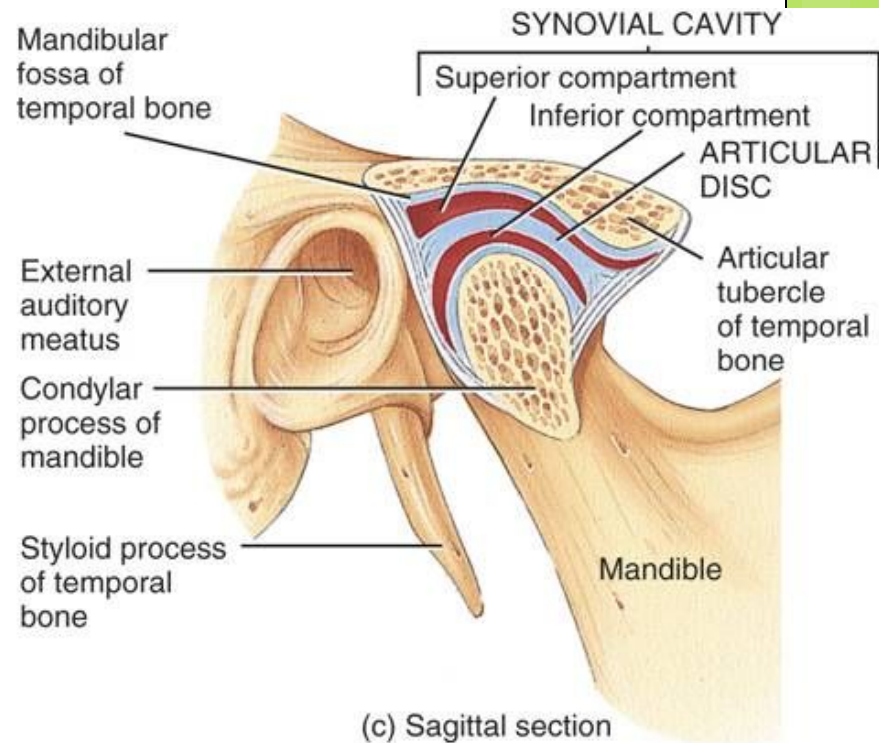
- Hyoid bone exists in the anterior throat
 - Serves as an attachment point for muscles of the tongue
 - Provides reciprocal stabilization during swallowing
 - Can affect cervical spine and shoulder function because of its attachments
- TMJ is innervated by:
 - Branches of the auriculotemporal nerve
 - Masseteric branches of the mandibular nerve
- The disc is innervated in its periphery but aneural and avascular in its intermediate zone (force-bearing)
 - Implications?

Anatomy Continued

- Temporomandibular or lateral ligaments
 - Restrain movement of lower jaw
 - Prevents compression of tissue behind condyles
- Sphenomandibular and stylomandibular ligaments
 - Keep the disc, condyle and temporal bone firmly opposed
- Missing teeth, abnormal tooth eruption, decay, etc. may lead to TMJ dysfunction
- Resting position is mouth slightly open, lips together, teeth not in contact
- Close packed position is teeth lightly clenched
- Capsular pattern is limitation of mouth opening



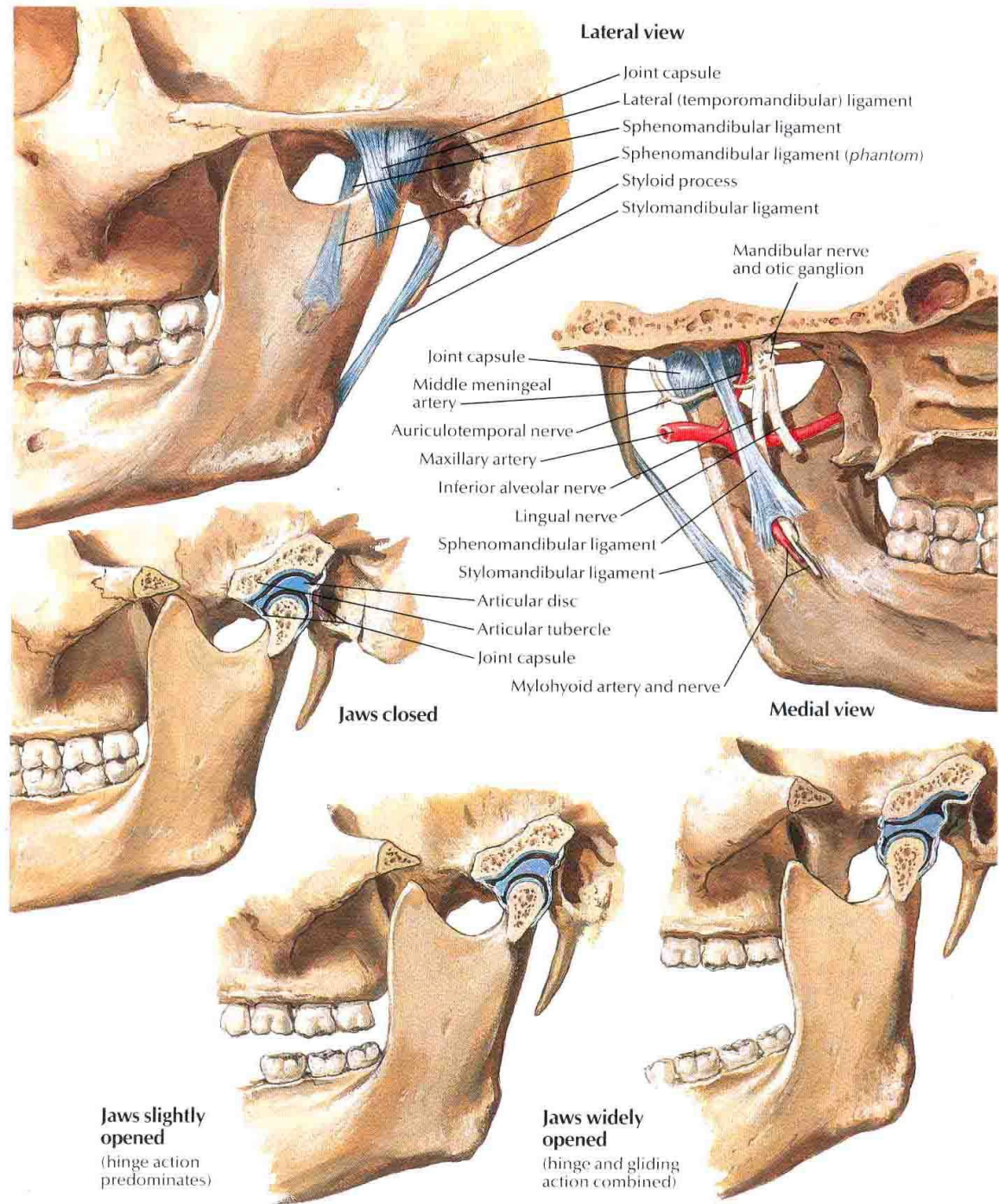
(b) Medial view



(c) Sagittal section

Joint Movement During Opening

- While mouth is opening condyles of the joint rest on the disc in the articular eminence
- **First phase-** rotation in the inferior joint space
 - Disc moves medially and posteriorly until collateral ligaments and lateral pterygoid stop the movement
- **Second phase-** gliding in the superior joint space
 - The disc now remains on the mandible head and both the disc and mandible slide forward to full opening



Forward Head Posture

pg. 245 figure 4-4

- Implications?

AROM

****Palpate joint while client performs ROM**

- Opening and closing of the mouth
 - The normal arc of movement is smooth and unbroken
 - Both joints are moving in unison
 - Movements should be done slowly so that the therapist can note any asymmetries
- Protrusion of the mandible
 - Therapist asks the client to protrude the mandible (jut the jaw forward)
 - Client should be able to do this without difficulty
 - Normal movement is 7mm, measured from the resting position to the protruded position
- Retraction of mandible
 - Therapist asks client to retract the mandible (pull the lower jaw back)
 - Normal movement is 3-4 mm
- Lateral Deviation of mandible
 - Client is asked to move lower jaw from one side to the other
 - A point is picked on upper and lower teeth when jaw is in resting position
 - Those same points are then measured when the jaw is laterally deviated
 - Normal lateral deviation is 10 – 15 mm

****Always assess C/S ROM when assessing the TMJ****

Muscle Action

- Opening the mouth (depression of mandible)
- Closing the mouth (elevation of mandible)
- Protrusion of the mandible
- Retraction of the mandible
- Lateral deviation of the mandible

PROM

- Passive movements are very seldom used for the TMJ except if the therapist needs to determine the end feel of the joint
- The normal end feel of this joint with opening is tissue stretch and closing is bone to bone (teeth)

RRROM

- Opening of the mouth (depression)
 - Can be tested by applying resistance at the chin
- Closing of the mouth (elevation)
 - One hand is placed over the back of the head or neck while the other hand is placed over the lower teeth of the client's slightly opened mouth
 - Client is asked to resist movement of the jaw in a closing direction
- Lateral deviation of the jaw
 - One hand is placed over the side of the head above the TMJ to stabilize the head
 - The other hand is placed along the jaw of the client's slightly opened mouth and the client pushes against the therapist hand
 - Both sides are tested individually

Action	Muscle Acting
Opening of the mouth (depression of mandible)	Lateral pterygoid, mylohyoid, geniohyoid, digastric
Closing of the mouth (elevation of mandible)	Masseter, temporalis, medial pterygoid
Protrusion of mandible	Medial/lateral pterygoid, masseter, mylohyoid, geniohyoid, digastric, stylohyoid, temporalis
Retraction of mandible	Temporalis, masseter, digastric, stylohyoid, mylohyoid, geniohyoid,
Lateral deviation of mandible	Lateral/medial pterygoid, temporalis, masseter

Cranial Nerve Testing

CRANIAL NERVE	TEST
Cranial Nerve 1	Smell something with eyes closed
Cranial Nerve 2 (optic)	Read something with one eye closed
Cranial Nerve 3,4,6	Eye movements, note any drooping
Cranial Nerve 5 (trigeminal)	Contract muscles of mastication
Cranial Nerve 7 (facial)	Move eyebrows up and down, purse lips, show teeth, whistle, wink
Cranial Nerve 8 (auditory)	Eyes closed, talk to client and have then repeat what you said
Cranial Nerve 9	Have client swallow
Cranial Nerve 10 (vagus)	Have client swallow
Cranial Nerve 11 (spinal accessory)	Client contracts SCM
Cranial Nerve 12	Stick out tongue and move it side to side

Cervical Spine Dermatomes

□ Pg. 241 figure 4-33

Referred Pain

- TMJ can refer pain to the teeth, head and neck
- Pg. 263 figure 4-7

Special Tests

Functional Opening (3 Knuckle) Test –

determine the available range of TMJ

- Client is asked to place 2 or 3 flexed PIP joints within the mouth opening
- The mouth opening should be approximately 35 - 55 mm
- If the client has pain opening the jaw the therapist should measure the amount of opening when the pain starts
- If the measurement is less than 25 – 35 mm the jaw is said to be hypomobile

Palpation

- Mandible
- Teeth
- Hyoid bone- anterior to C2-3
- Thyroid cartilage- anterior to C4-5
- Mastoid process
- Cervical spine

Joint Play

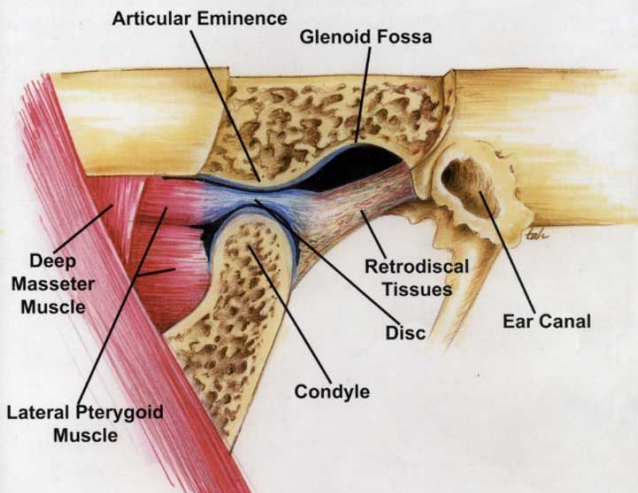
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- Longitudinal cephalad and anterior glide
- Lateral glide of mandible
- Medial glide of mandible
- Posterior glide of mandible

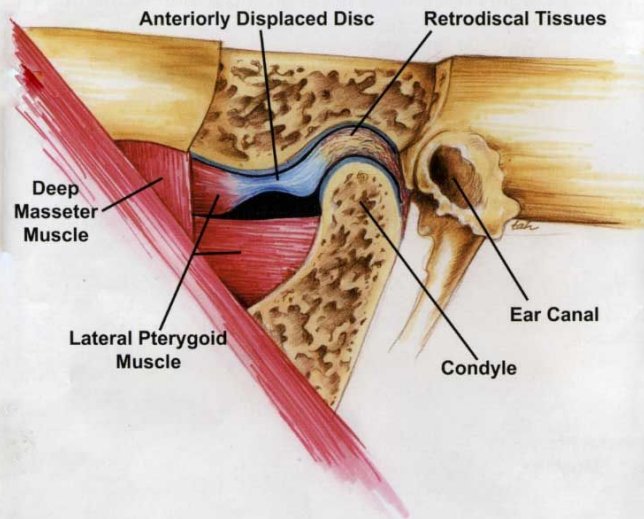
Conditions

- TMJ Syndrome and disorders
- Arthritis
- C/S referral, muscle imbalance

**NORMAL TMJ
MOUTH OPEN**



**ABNORMAL TMJ
ANTERIORLY DISPLACED DISC**



**ANTERIORLY DISPLACED DISC
WITH CHANGES IN SHAPE AND OTHER
DEGENERATIVE CHANGES**

