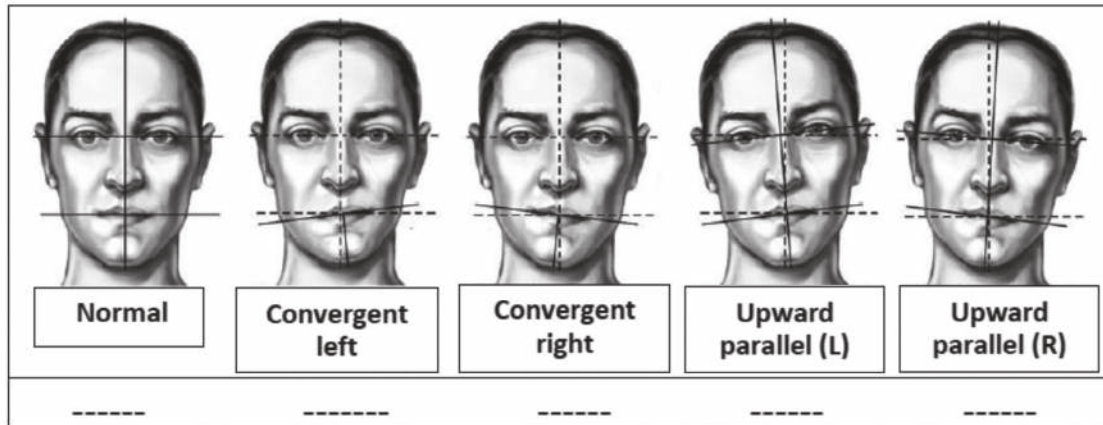


Physical Therapy Airway Screener

I. Static Postural Assessment

Have the patient standing with their back to a blank wall. (A graphing grid on the wall can be very helpful.) Ask the patient to relax and look straight ahead. Taking pictures with a digital camera is recommended to measure facial symmetry and track changes throughout the course of care.

A. Frontal Plane Assessment



(© 2015 Bill Esser, MS, PT, CCTT) (illustrations by Samuel J. Higdon, DDS)

B. Determination if convergence and a mandible shift is present:

1. Draw a line through the pupils and across the lip line
2. Determine if the lines converge to one side. A high correlation exists between disc displacement and a lack of development of the condyle and ramus and the side of convergence. Condylar movement posterior and superior onto the retrodiscal tissue is felt to affect arterial flow and joint nutrition.

C. Determining altered chin position from midline

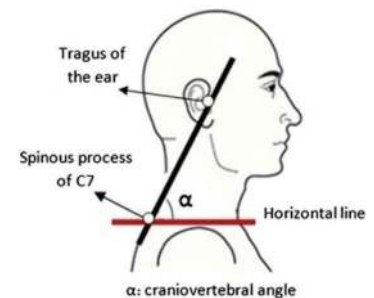
1. Mark a point between the eyes and the middle of the bridge of the nose (Nasion)
2. Mark a point in midline just under the nose (Subnasion)
3. Mark a point in the middle of the chin
4. Drop an imaginary line cephalad to caudal to see if the chin is in line or shifted to one side
 R mandible shift L mandible shift
5. Correlate chin deviation with convergence to that side and also the labial frenulum

D. Additional observations in the frontal plane

1. Ear Height Level Right higher Left higher
2. Ear show Equal Right greater Left greater
3. Eyebrow height Level Right greater Left greater
4. Lip seal Sealed no chin strain Sealed chin strain Apart
5. Pupil Height Level Right greater Left greater
6. Nasal bone Midline Right deviated Left deviated
7. Chin Midline Right deviated Left deviated
8. Throat Midline Right deviated Left deviated
9. Shoulder Height Level Right higher Left higher

E. Sagittal Plane Assessment

1. Forward Head Position - Craniovertebral Angle (CVA) - Acute Angle that formed from tragus of the ear to C7 with horizontal line at C7 > 50 degrees < 50 degrees = FHP
2. Mandibular Skeletal Class: with the lips lightly closed, a line drawn superior to inferior should touch the forehead, maxilla, and chin.
 - a. Class I - aligned forehead, maxilla and mandible
 - b. Class II - retruded mandible
 - c. Class III - protruded mandible
3. Shoulder Position Level Right forward Left forward
4. Sternum relationship to floor perpendicular to floor Elevated Depressed



Physical Therapy Airway Screener (continued)

II. Soft tissue and Intra-oral Inspection

A. Note Scar(s) on Face/Chin sign of previous macrotrauma to the face.

*Scar often opposite the side of disc displacement and convergence

- Scar present on chin Right Left

B. Scalloping of Tongue

Scalloping usually indicates lower tongue resting posture and potential for patient using tongue against/between teeth at night to brace. This is an indication of airway compromise.

- Stick tongue out to assess scalloping none mild moderate severe

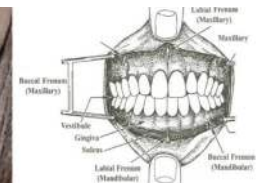
C. Labial/Buccal Inspection

- With the teeth lightly touching, lift the upper and lower lips away from one another and inspect the alignment of the lower frenulum. Lower frenulum in line with upper frenulum Lower frenulum to the right of upper frenulum Lower frenulum to the left with upper frenulum
- Is the frenulum/buccal tie limiting lip mobility No Yes, upper Yes Lower Upper and lower limited

D. Dentition

Observation of the relationship between lower teeth to the upper teeth with the teeth in light contact.

- Overbite: How far do the top incisors extend beyond the bottom incisors from cephalad/caudal relationship (Ideal is 2-3 mm) _____ mm
- Overjet: How far do the top incisors extend over the bottom incisors from an anterior to posterior relationship (Ideal is 2-3 mm) _____ mm
- Tori: Assessment for extra bone at the center of maxilla and inside the lower mandibular teeth. Tori are compensatory bony depositions by the musculoskeletal system found midline superiorly on the maxilla or inferiorly medial to the lower teeth of the mandible. The extra bone deposition results from exorbitant stresses applied to the teeth during night parafunction particularly to grinding activity which applies a torsional stress to the teeth. None Maxillary Tori Mandibular Tori
- Clench Lines: are fibrotic lines inside lateral borders of the cheeks. The dental term for clench lines is linea alba – white line. They are best observed with the use of a flashlight. Pull the cheeks out away from the teeth with a tongue blade and record if present. Since they are epithelial versus fibrotic changes, they may disappear over time if clenching behavior can be decreased. Not Present Present
- Additional comments regarding dentition (tooth wear, gum health)



E. Tongue Position and Mobility

- Tongue Resting position - ask patient where their tongue is at rest Roof of mouth Bottom jaw Front of teeth Not touching anything
- Jaw and Tongue ROM - Measure with calipers
 - Total jaw range of motion (from upper to lower incisor) _____ mm
 - Tongue tip on palate measure opening TIP _____ mm
 - Tongue Suctioned to Palate Lingual Palatal Suction LPS _____ mm
 - Ratio of TRMR/TIP x 100 _____%
 - Ratio of TRMR/LSP x 100 _____%

FUNCTIONAL CLASSIFICATION OF ANKYLOGLOSSIA BASED ON TONGUE RANGE OF MOTION RATIO (TRMR)

TRMR-TIP Assessment of Anterior Tongue Mobility Tongue to Incisive Papilla (TIP)				TRMR-LPS Assessment of Posterior Tongue Mobility Lingual Palatal Suction (LPS)			
Grade 1, TRMR-TIP > 80% TIP/Range about average	Grade 2, TRMR-TIP 50-80% Average	Grade 1, TRMR-LPS > 60% 50%/Range about average	Grade 2, TRMR-LPS 30-60% Average	Grade 3, TRMR-TIP < 50% Below average	Grade 4, TRMR-TIP < 25% Significantly below average	Grade 3, TRMR-LPS < 50% Below average	Grade 4, TRMR-LPS < 25% or unable to perform Below average

Physical Therapy Airway Screener (continued)

III. Range of Motion Assessment

A. Cervical

1. Upper cervical rotation test - Determine if C1 is rotated out of neutral
 - a. Have the patient flex head to chest, then have them rotate right and mark an imaginary line on the clavicle. Keeping head flexed, have them rotate left and mark an imaginary line on the clavicle.
Compare the difference. Rotation equal Rotation right > Rotation Left >
 - b. Full Cervical Rotation - turn head toward each shoulder
 - i. Right non limited pain-free limited pain free limited painful
 - ii. Left non limited pain-free limited pain free limited painful
2. Side bending - Bring ear to shoulder, keep the shoulder relaxed
 - a. Right non limited pain-free limited pain free limited painful
 - b. Left non limited pain-free limited pain free limited painful
3. Flexion - Look down to floor with mouth closed - can chin touch chest
 non limited pain-free limited pain free limited painful
4. Extension - Look up to ceiling non limited pain-free limited pain free limited painful

B. Facial Muscles

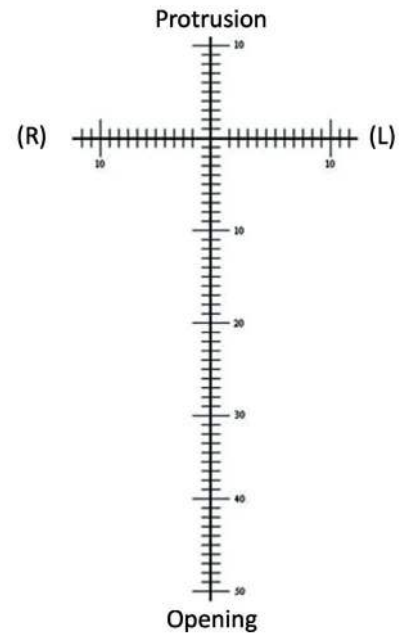
1. Smile - Have the patient smile and note right to left lip excursion Even Right higher Left higher
2. Eyebrow Lift Even Right higher Left higher

C. TMJ Charting

Having an easy and consistent way of charting temporomandibular joint triplanar range of motion is essential to diagnose and track progress.

1. Mark on the chart opening, protrusion and lateral movement noting deflection, deviation, time of clicks and if pain not present (NPOP), painful (POP) [Normal opening is measured from right top and bottom central incisor as are lateral movements]
 - a. Initial oral opening, rotation should be the primary movement first 25 mm followed by translation. Note if translation occurs early
 - b. Normal opening 0 - 45 mm checked with slight overpressure - Record total range and pain with overpressure (POP)
 - c. Deviations - Movement to one side then return to midline. Typically caused by a displaced disc on the side, the patient deviates toward. At time of reduction (click), jaw will return to midline. Record clicks at mm of opening and side they occurred.
 - d. Deflections - movement to one side without return to midline typically caused by displaced disc which does not reduce or tight joint capsule on side of deflection - Record ROM and pattern.
 - e. Lateral movement (Trusion) - normal is 10 mm without pain at end movement with overpressure (NPOP), or Painful with overpressure (POP). mark total range and mm at which a click is palpated/heard
 - f. Protrusion - normal is straight ahead movement without deflection or deviation. Mark total range and click at mm palpated/heard
 - g. Jaw Closing: Is the patient able to close jaw completely. Dentist lightly place both pinkies in each ear and notate the following
 - i. Full closure no pain pain right ear pain left ear
 - ii. Condylar pressure
 no pressure pressure right ear pressure left ear

See example at right of a normal bilateral TMJ function chart.



TMJ charting – Normal

- Normal Joint
- Palpate over the condylar poles
- Slight translation then rotation to 25 mm
- Opens 3 fingers width approximately 40mm without deviation or deflection
- No clicks – pops
- Lateral movement ¼ ratio to opening.
 - 40 mm opening = 10mm lateral
- Protrusive movements ¼ opening (10mm - and straight)

Physical Therapy Airway Screener (continued)

D. Palpation of facial muscle trigger points and retrodiscitis - Developed by Mariano Racabado, DPT.

The dentist should palpate each point on the face using enough pressure to blanch the nail bed. Maintain this consistent pressure throughout the examination. have the patient raise their hand when the pain is elicited and provide a 1-10 number describing severity of pain. A number 1 represents minimal pain and 10 represents worst possible pain. Ask the patient to lightly bite down on teeth during each palpation, then relax.

1. (R)____ (L)____ Anterior temporalis (behind orbit of eye)
2. (R)____ (L)____ Middle portion of temporalis
3. (R)____ (L)____ Posterior portion of temporalis
4. (R)____ (L)____ Tendon of the temporalis muscle found above zygomatic arch
5. (R)____ (L)____ Temporalis tendon's sttachment to the coronoid process. Place your index fingers anteriorly, under the zygomatic arch, and have the patient open their mouth into your fingers.
6. (R)____ (L)____ Superficial masseter at the angle of mandible
7. (R)____ (L)____ Aponeurosis attachment of the superficial masseter muscle found just under the zygomatic arch
8. (R)____ (L)____ Deep masseter muscle found with strong clenching just anterior to the condyle
9. (R)____ (L)____ Retrodiscal tissue externally – pinky in ear, open mouth slightly to gain access and have patient close gently and condyle will move posterior
10. (R)____ (L)____ Medial pterygoid – Palpate internally, bottom of mouth between tongue and mandible as posterior as possible. Can also palate externally just beneath and medial to the ramus of the mandible
11. (R)____ (L)____ Lateral pterygoid – using pinky, palpate internally, lateral and posterior between upper cheek and molars. Proceed posterior into the pocket

