

# Forward head posture

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MAZUMS

# Posture definition

- ▶ Posture is a composite of the **positions of all the joints** of the body at any given moment
- ▶ Posture is the **relative arrangement** of body parts for a specific activity, or a characteristic manner of bearing one's body.
- ▶ **efficient posture** can be defined as the balanced three-dimensional alignment that provides for **optimal functional capacity, shock absorption,** and **weight attenuation.**

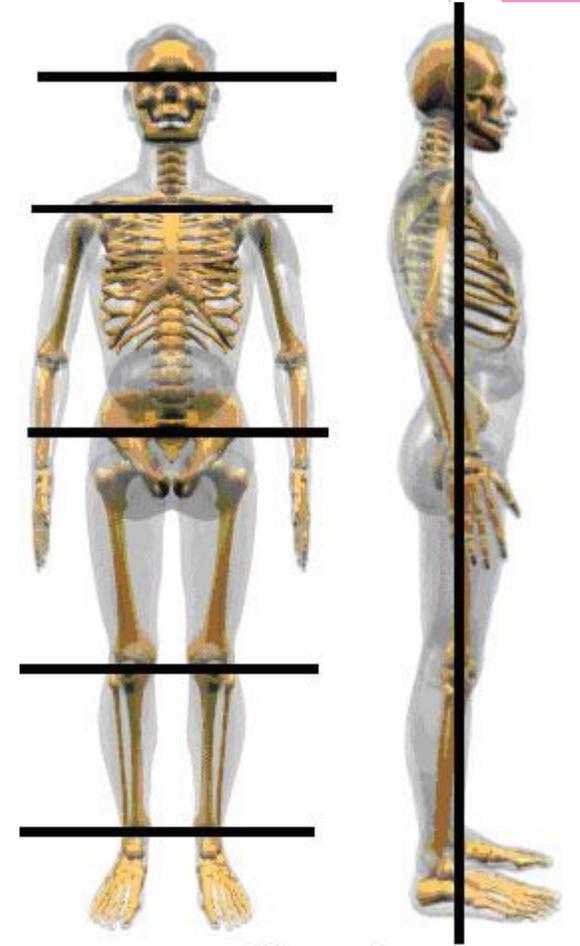


Figure 1

# IDEAL ALIGNMENT: POSTERIOR VIEW

- ▶ **Head:** Neutral position, neither tilted nor rotated. (Slightly tilted toward the right)
- ▶ **Cervical Spine:** Straight in drawing. (Slight lateral flexion toward right.)
- ▶ **Shoulders:** Level, not elevated or depressed.
- ▶ **Scapulae:** Neutral position, medial borders essentially parallel and approximately 3 to 4 inches apart.

# Pain Syndromes Related to Impaired Posture

- ▶ **Postural Dysfunction** : Postural dysfunction differs from the postural pain syndrome
- ▶ **adaptive shortening of soft tissues and muscle weakness**
- ▶ The cause : **prolonged poor postural habits**, or it may be a result of **contractures and adhesions** formed during the healing of tissues after trauma or surgery.
- ▶ Stress to the shortened structures causes pain. In addition, strength and flexibility imbalances may predispose the area to injury or **overuse syndromes** that a normal musculoskeletal system could sustain.

# Postural Habits

**Good postural habits** in the adult are necessary to avoid postural pain syndromes and postural dysfunctions.

Also, careful follow-up in terms of flexibility and posture training exercises is important after **trauma or surgery** to prevent dysfunctions from contractures and adhesions. In the **child**, are important to avoid abnormal stresses on growing bones and adaptive changes in muscle and soft tissue.

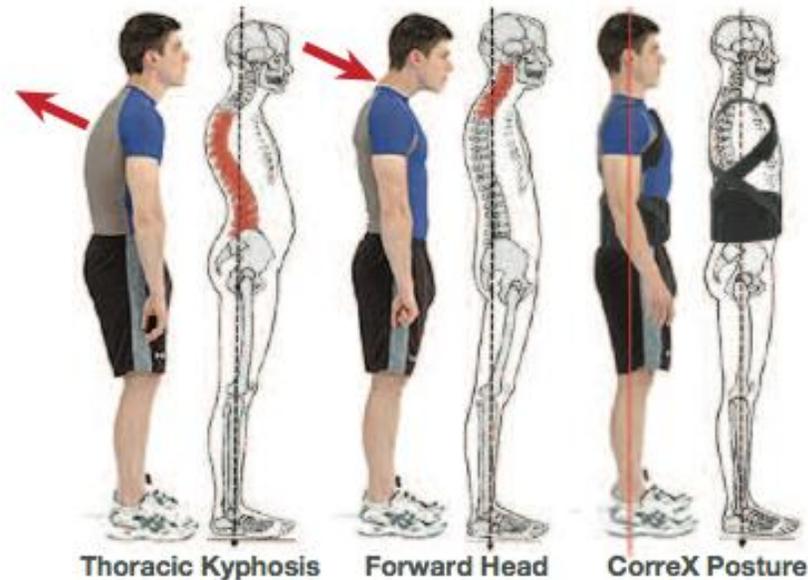
# Forward Head Posture

- ▶ **Forward Head Posture** is where the position of the head is in front of the mid line of the torso.
- ▶ *(Ideally - the ear canal should be aligned with the mid line of the torso.)*
- ▶ It involves a combination of lower neck flexion and upper neck extension.
- ▶ There is also a flattening or loss of the natural curve in the cervical spine.



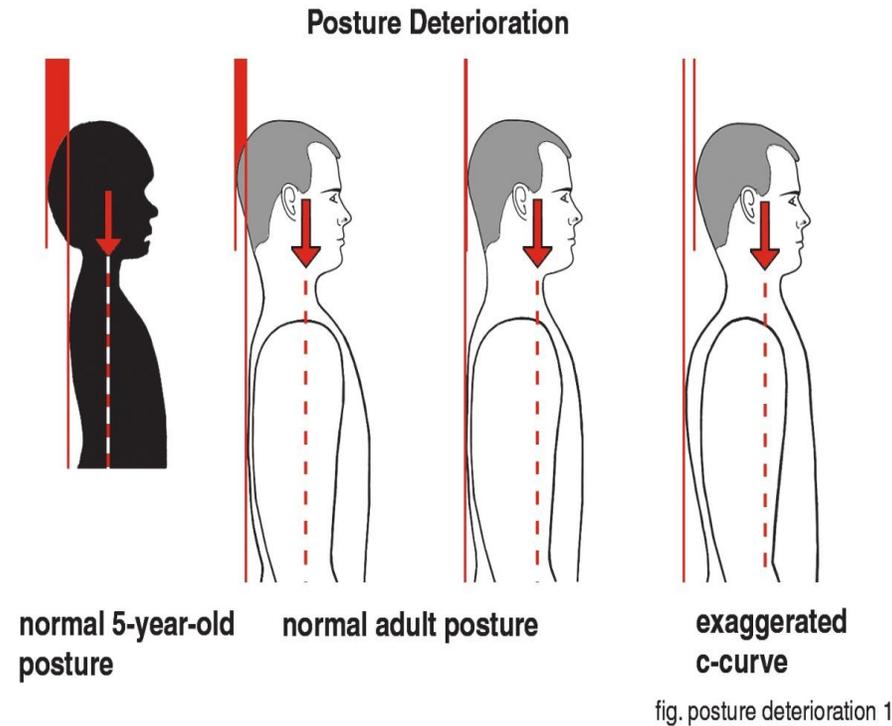
▶ What Causes Forward Head Posture?

- ▶ It's all about your habits.
- ▶ *Are you sitting up tall?.... Or are you letting your head poke forward?*
- ▶ The body will get used to the positions that you *choose* to place it in.
- ▶ Over time - certain muscles will tend to weaken and others get tight.



# Forward-Head Posture

- ▶ poking chin posture or forward head posture is characterized by **increased flexion of the lower cervical** and the upper thoracic regions, increased **extension of the occiput** on the first cervical vertebra, and increased extension of the upper cervical vertebrae.
- ▶ There also may be temporomandibular joint dysfunction with retrusion of the mandible.
- ▶ the distance between **the occiput and the seventh cervical** is **reduced** remarkably. Compared to the separation between the two points in ideal alignment, there may be as much as 2 or 3 inches of difference between the two positions

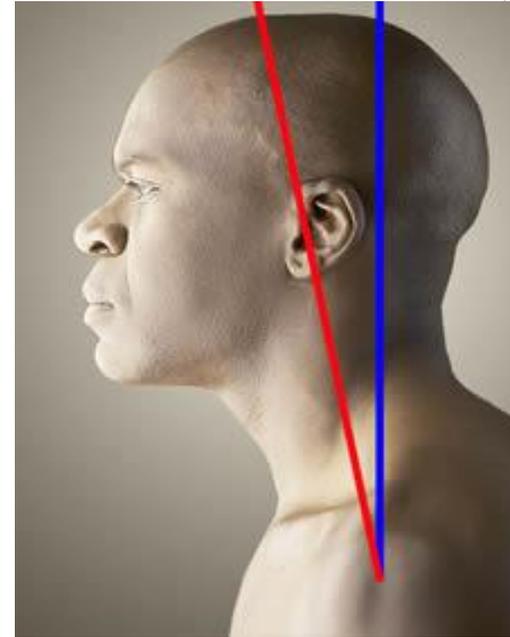


# Muscular imbalance

- ▶ **Decreased flexibility** in the **levator scapulae**, **sternocleidomastoid**, **scalene**, and **suboccipital muscles**.
- ▶ If the scapulae are elevated, there may also be tight **upper trapezius** muscles. With temporomandibular joint symptoms, the muscles of mastication may have increased tension.
- ▶ *the neck extensors* are in a shortened
- ▶ **Stretched and weakened** anterior throat muscles (hyoid becomes fixed because of the stretched position)
- ▶ The **anterior vertebral neck flexors** and **lower cervical and upper thoracic erector spinae** muscles.

# Potential Sources of Pain

- Stress to the **anterior longitudinal ligament** in the upper cervical spine and **posterior longitudinal ligament** in the lower cervical and upper thoracic spine
- **Muscle tension** or fatigue(6 times)
- Irritation **of facet joints** in the upper cervical spine
- Narrowing of the **intervertebral foramina** in the upper cervical region, which may impinge on the blood vessels and nerve roots, especially if there are degenerative changes
- ▶ Impingement on the neurovascular bundle from **anterior scalene** muscle tightness



- ▶ Impingement of the cervical plexus from **levator scapulae** muscle tightness
  - ▶ • Impingement on the greater occipital nerves from tight or **tense upper trapezius** muscle, leading to **tension headaches**
  - **Temporomandibular joint** pain from faulty head, neck, and mandibular alignment and associated facial muscle tension
- Lower cervical **disk lesions** from the faulty flexed Posture

▶ Tight and/or Overactive muscles:

- ▶ Anterior Scalenes
- ▶ Sternocleidomastoid
- ▶ Sub-Occipital muscles
- ▶ Splenius Capitis/Cervicis
- ▶ Semispinalis
- ▶ Longissimus
- ▶ Anterior trapezius
- ▶ *(Tightness in these muscles can sometimes lead to headaches, dizziness and pain behind the eye.)*

▶ b) Weak and/or Inhibited muscles:

- ▶ Deep Neck Flexors
  - ▶ *Longus Capitis*
  - ▶ *Longus Colli*
- ▶ Lower Cervical Extensors
  - ▶ *Multifidus*

# How Do You Know If You Have Forward Head Posture?

- ▶ a) Wall test
- ▶ Place your back completely flat against the wall.
  - ▶ Make sure your pelvis and shoulder blades are in contact with the wall.
  - ▶ Do not over arch your lower back.
  - ▶ The back of your heels do not have to be touching the wall.
- ▶ Do not tilt your head backwards.
- ▶ Whilst standing in this position, does the back of your head *naturally* come in contact with the wall?



▶ **b) Side profile**

- ▶ Take a side profile photo of yourself.
- ▶ Draw a line down the mid line of your torso.
- ▶ Draw a line down from your ear canal.
  - ▶ *This line should be parallel to the mid line of the torso.*



# Flat-Neck Posture

- ▶ This posture is characterized by a **decreased cervical lordosis** and **increased flexion of the occiput on atlas** (this is an exaggeration of axial extension). It may be seen with an exaggerated **military posture** (flat upper back). There may be **temporomandibular joint** dysfunction with protraction of the mandible.
- ▶ *Potential Sources of Pain*
- ▶ • **Temporomandibular** joint pain and occlusive changes.
- ▶ • Decrease in the **shock-absorbing** function of the lordotic curve, which may predispose the neck to injury.
- ▶ • Stress to the **ligamentum nuchae**.

# Potential Muscle Impairments

- ▶ • Decreased flexibility of the anterior neck muscles .
- ▶ • the levator scapulae, sternocleidomastoid, and scalene muscles become stretched and weakened.
- ▶ *Common Causes*
- ▶ Exaggeration of the posture for extended periods of time is the common cause of flat-neck posture.
- ▶ This posture is uncommon

# SHOULDER

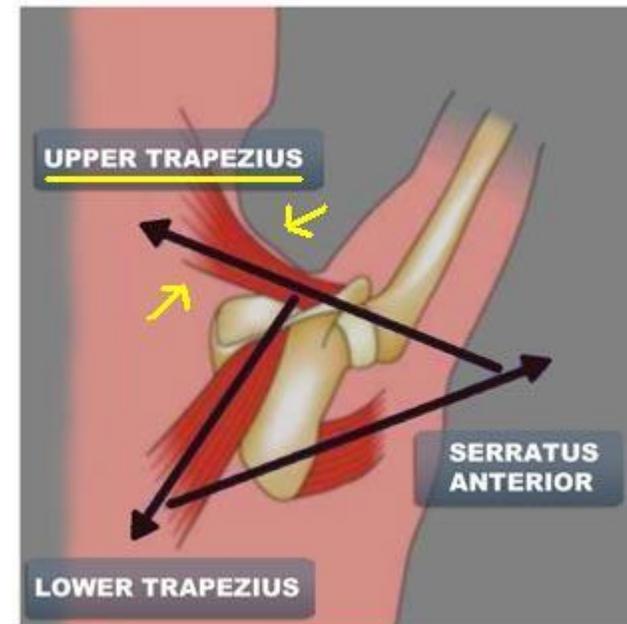
- ▶ In ideal alignment of the shoulder, the side-view line of reference passes **midway through the joint**.
- ▶ position of the arm and shoulder depends on the positions of the scapulae and upper back. Faulty positions of the scapulae adversely affect the position of the shoulder, and malalignment of the glenohumeral joint can predispose to injury and chronic pain.

# Posterior alignment

- ▶ The shoulders should **ideally be level**, but for a **right handed person** the right shoulder is often held lower than the left, and vice versa. Elevation of the shoulder girdle may be due to **tightness or overactivity in the levator scapulae** or the **upper fibres of trapezius**, and **lengthening or weakness in the lower fibres of trapezius**.
- ▶ **acromion processes** should be horizontal to, or slightly higher than, the point at the root of the scapula. If the root of the scapula is higher this indicates **tightness or overactivity of the levator scapulae and rhomboid** musculature, which causes a downward rotation of the glenoid fossa. This may be a precursor **to impingement** syndromes and rotator cuff pathologies. Moreover, the levator scapulae may cause anterior shear on the cervical spine and give rise to **cervical and scapula pain**.

# scapulae

- ▶ In good alignment, the scapulae lie **flat against the upper back**, approximately between the **second and seventh** thoracic vertebrae, and approximately **4 inches** apart (more or less depending on the size of the individual). the medial borders lie approximately **50-75 mm** lateral to the spine.
- ▶ **Winging** of the scapulae is observed when the whole length of the medial border of the scapula is displaced laterally and posteriorly from the wall of the thorax. This may result from weakness in the **serratus anterior muscle** or a lesion of the **long thoracic nerve**.
- ▶ Pseudowinging of the scapulae occurs when the inferior angle of the scapula is displaced from the thorax
- ▶ Observe the symmetry of the scapulae.



# scapula

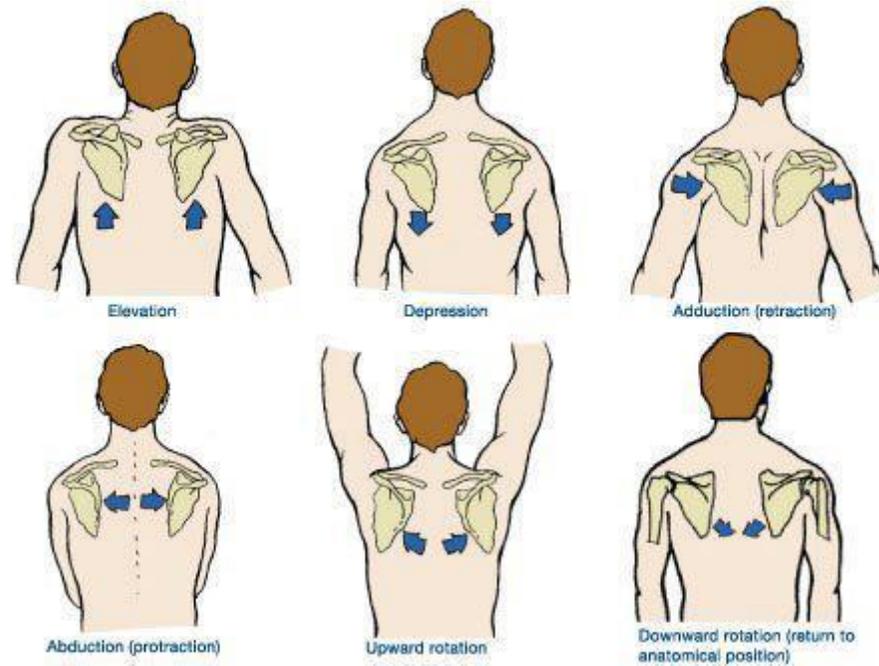
In a person with a **thoracic kyphosis**, the scapula follows the contour of the thorax and assumes a **downward rotated** position; the glenoid cavity no longer faces upward. Also, in this position the freely hanging humerus assumes a position of **relative abduction** with respect to the scapula, and **tension is lost in the superior joint capsule**. In this situation, the rotator cuff muscles must contract to maintain joint integrity with the arm at the side, thus preventing inferior subluxation of the humerus. Therefore, the person with a thoracic kyphotic deformity must maintain **increased tone in the rotator cuff** muscles to compensate for the loss of capsular stabilization

The increased tone of the rotator cuff muscles results in **increased tensile stresses to the joint capsule**, with which the rotator cuff tendons blend

The increased stress to the capsule stimulates an increase in collagen production, which leads to a **capsular fibrosis**

# scapula

- ▶ **Protraction of the scapulae** often accompanies poor posture in which the rhomboids and the lower fibers of the trapezius are lengthened and weak bilaterally. shortened **serratus anterior**, **pectoralis minor** and **upper trapezius**
- ▶ **Retraction of the scapulae** is much less common and occurs when people adopt a **military-style** posture: **chest pushed up** and out, **shoulders drawn back** and down. In this case **rhomboids** might be shortened on both the left and right sides of the body. Clients engaged in sporting activity in which retraction predominates on one or both sides of the body (e.g., **javelin throwers and archers**) might demonstrate **unilateral shortness in the rhomboids** on the side of the retraction. Observation of clients who regularly engage in sporting activities involving bilateral retraction of the scapulae—such as **rock climbing** and **rowing**—may reveal hypertrophy in both left and right rhomboids.



# Anterior alignment

- ▶ Note any irregularities of the clavicle, sternoclavicular and acromioclavicular joints resulting from previous fractures or dislocations. Note the soft-tissue contours
- ▶ regarding **symmetry atrophy** and **hypertrophy**, particularly in the **deltoid**, **upper trapezius** and **sternocleidomastoid** muscles.

# lateral alignment

- ▶ Note the relative positions of the humeral head: **no more than one-third** of the humeral head should lie anteriorly to the acromion process.
- ▶ Excessive forward translation may result from **tightness in the pectoral** muscles and elongation of the **posterior shoulder capsule**. (Tightness of pectoralis minor can cause increased protraction of the scapula which decreases the subacromial space).
- ▶ The patient's arms should lie comfortably at the side with the **thumbs facing almost forwards**.
- ▶ Excessive medial rotation of the shoulders will result in the **thumbs facing inwards** towards the body.
- ▶ Excessive protraction of the shoulders with an increased thoracic kyphosis and tightness in the pectoral muscles is a common faulty posture.



# Muscle length tests

- ▶ *Levator scapulae*

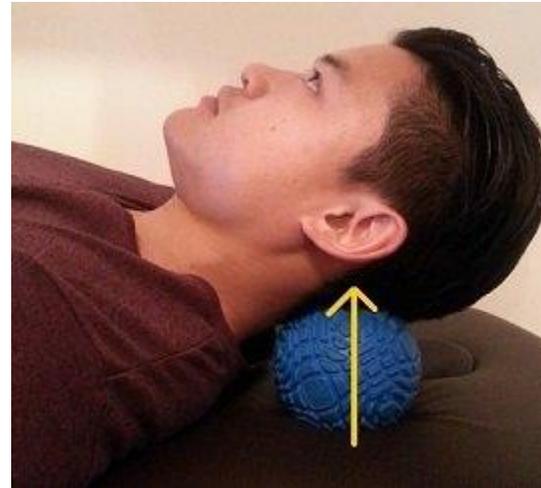
With the patient supine, flex and lateral flex the cervical spine away to resistance and add ipsilateral rotation (rotation to the same side as side flexion). Depress the shoulder girdle and compare range and pain response on both sides.

- ▶ *Pectoralis minor*

With the patient supine, the lateral border of the spine of the scapula should be within 25 mm of the plinth. If pectoralis minor is shortened, the lateral border of the spine of the scapula is more than 25 mm from the plinth since the shoulder girdle is protracted

## a) Sub-Occipital/Posterior Neck

- ▶ Place a massage ball under the back of your neck.
  - ▶ *Do not place it directly under the spine.*
  - ▶ You are aiming for the muscles on either side of the spine.
- ▶ Apply an appropriate amount of pressure onto the massage ball.
- ▶ Gently rotate your head from side to side to emphasize certain areas.
- ▶ Make sure to cover the muscle from the base of the skull to the base of the neck.
- ▶ Continue for **2-3 minutes** on each side.



## b) Sternocleidomastoid

- ▶ Instructions:
- ▶ Locate the Sternocleidomastoid muscle.
- ▶ You should be able to feel a prominent band of muscle on each side of the neck. (*see above*)
- ▶ Do not press too deep as you may hit other sensitive structures of the neck.
- ▶ Gently massage these muscles with a pinch grip.
- ▶ Make sure to cover the entire length of the muscle.
- ▶ Duration: 1 minute per side.



# Neck Stretches

- ▶ **Sub-Occipital (Upper neck)**
- ▶ Place your hand at the front of your chin and the other at the back of your head.
- ▶ Apply a force to the front of your chin as to gently glide the chin backwards.
- ▶ Whilst maintaining this pressure, proceed to pull your head forward/down.
- ▶ Aim to feel a stretch at the back of your Upper neck.
- ▶ Hold for **30 seconds**.
- ▶ Repeat **3** times.



# Posterior neck (middle neck)

- ▶ Gently tuck your chin in.
- ▶ Look down.
- ▶ Place both hands behind your head and pull your head downwards.
- ▶ Aim to feel the stretch at the back of your Middle neck.
- ▶ Hold for **30 seconds**.
- ▶ Repeat **3** times.



# Sternocleidomastoid

- ▶ Gently tuck your chin in.
- ▶ Rotate your head towards the side that you want to stretch.
- ▶ Tilt your head to the side away from the side you want to stretch.
- ▶ Use your hand to pull your head further into the tilt.
- ▶ Aim to feel a stretch on the side of your neck.
- ▶ Hold for **30 seconds**.
- ▶ Repeat **3 times**.
- ▶ Do both sides.



# Chin tuck (*with resistance band*)

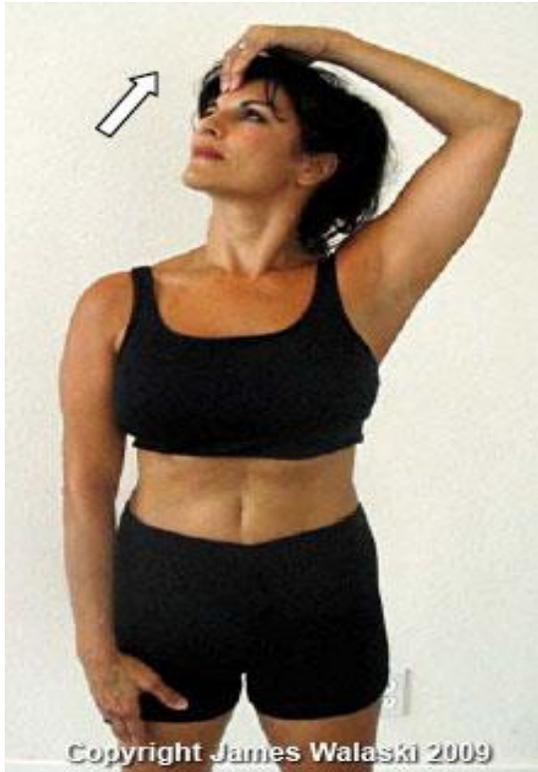
- ▶ Apply a resistance band around the back of your neck. (*see above*)
- ▶ Pull the band forwards as to increase the tension on the band.
- ▶ Proceed to do a chin tuck against the resistance band.
- ▶ Hold for **5 seconds**.
- ▶ Repeat **20 times**.



# Use your mobile phone properly

- ▶ Optimize your head position by bringing your mobile closer up to your eye level





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**Sit in a straight backed chair in a comfortable position. Turn your head slightly to one side and sidebend to the same side. Keep your shoulders down. Reach over your head and pull slowly in the direction of the sidebend. You should feel a stretch on the front side of your neck under your ear opposite to the side to which you turned. Repeat.**



## Chin Tucks

1



2



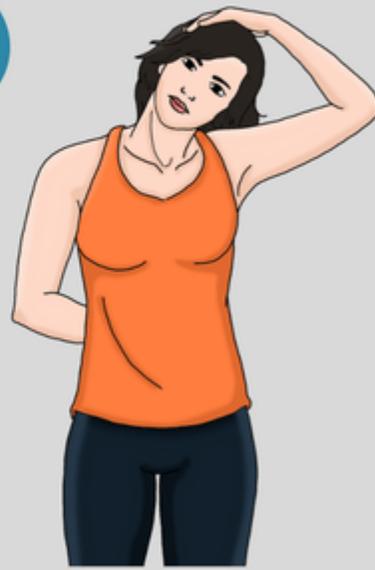
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## Upper Trapezius Stretch

1



2



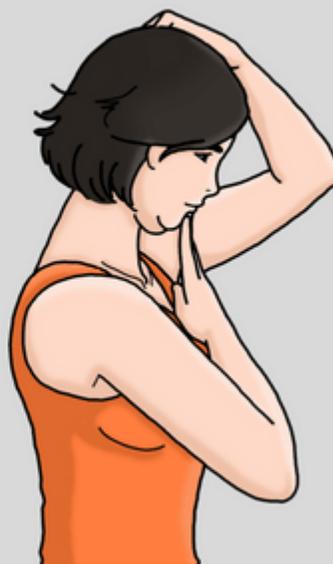
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## Neck Fwd Flexion

1

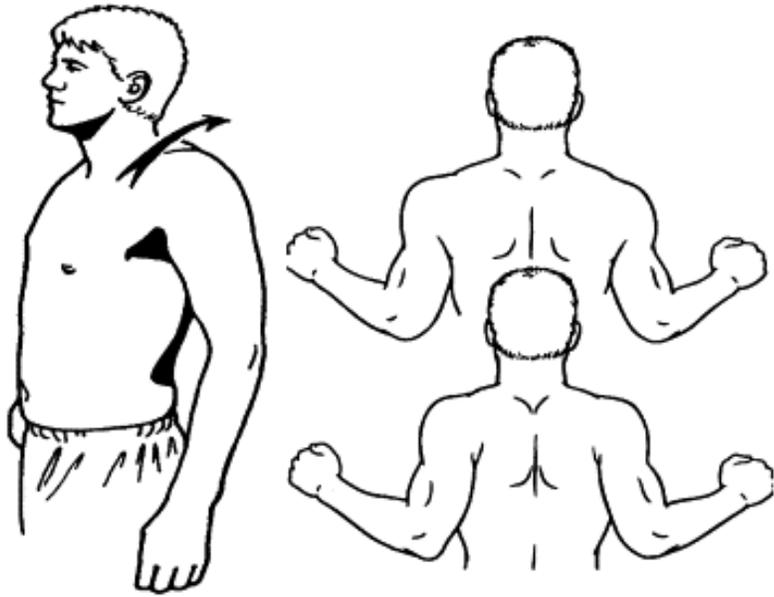


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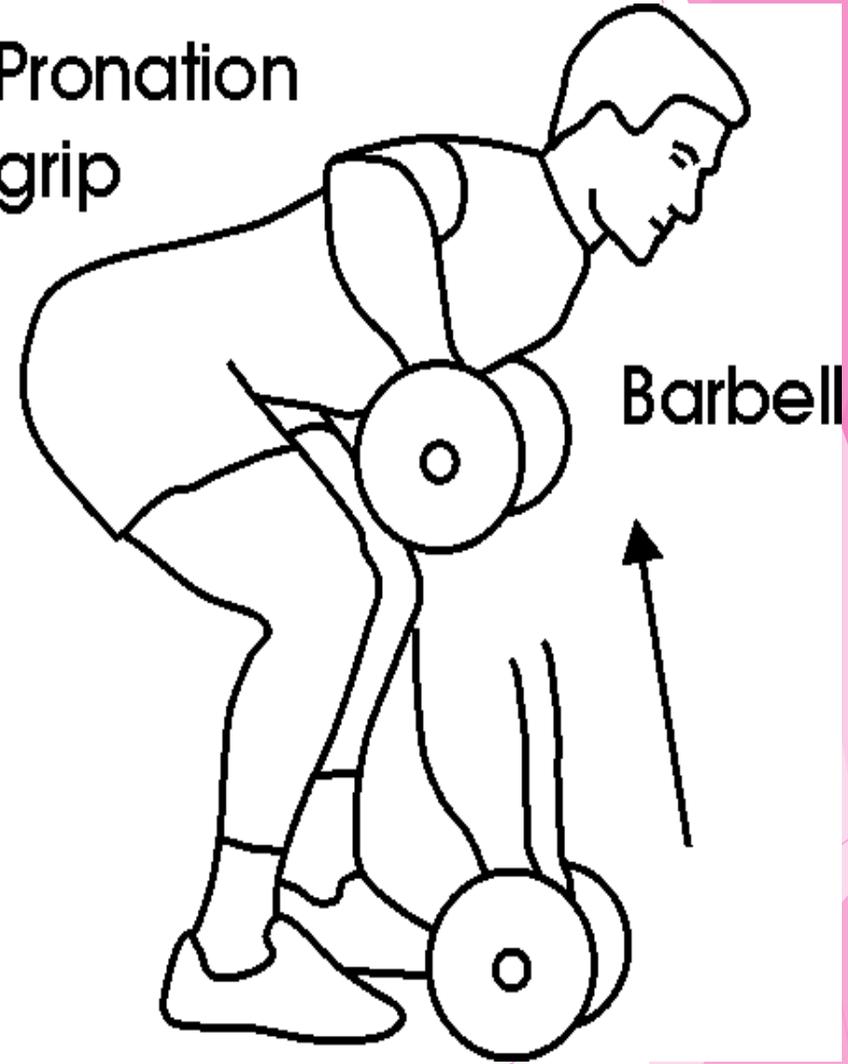


BackIntelligence.com





Pronation  
grip



Barbell

## Doorway Stretch



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## Shoulder Blade Squeeze (Brugger's Relief Pose)

1



2



\* Squeeze shoulder blades together.

Good luck

