

Assessment for

Range of Motion Part 2

Very Important!!!

Please note: This slide deck shows both STRENGTHENING and STRETCHING poses/exercises. The ROM testing indicates restrictions for RANGE OF MOTION (ROM) ONLY! For example, if a slide tells you that if the client has restrictions with the ROM test that the muscle that is probably restricted is the subscapularis, that means you need to STRETCH (NOT strengthen) the subscapularis.

So, why did I also list strengthening exercises in this slide deck?

#1) Because we will eventually test for lack of strength to determine which muscles are weak. When we do cover this, you will already know how to strengthen those muscles. This saves time for both of us.

#2) Because many people who need to stretch muscles in a particular area may also be weak in that area. NOT NECESSARILY...so don't automatically assume they need strengthening, but use common sense (and TEST for strength – which we will learn later). For example, if a client is tight in their pecs, but they are a weight lifter, they probably only need stretching for the pecs. But, if a client is tight in their pecs and they are very sedentary, chances are good that they will need both stretching and strengthening.

Very Important!!!

Also note: I have not specified to “repeat on opposite side” for tests that should be done on both sides. It is a given that you will do the tests on both sides. For example, if you test neck rotation on one side, you will always do it on both sides.

I didn't note this in the slides for brevity, but please remember that you'll always test both sides.

Key to Slides

- Refer to Thomas Myers Anatomy Trains
- BFL – Back Functional Line
- LL – Lateral Lines
- DFAL – Deep Front Arm Line
- DFL – Deep Front Line
- DBAL – Deep Back Arm Line
- FFL – Front Functional Line

Key to Slides (cont'd)

- LL – Lateral Line
- SBAL – Superficial Back Arm Line
- SBL – Superficial Back Line
- SFAL – Superficial Front Arm Line
- SFL – Superficial Front Line
- SL – Spiral Line

Links: Please Note

Please note that all links in this deck are active at the time of publication. Links are removed and changed frequently, so if a link is broken, please Google to try to find it and notify us if you have a moment so we can update the slide deck.

Thanks!

The link below contains tests for:

Backrub

Hand to Shoulder Blade

<http://round-earth.com/RotatorCuffTests.html>

Back Rub Restrictions - Major

Coracobrachialis

Anterior Deltoid (covered in ROM Weekend 4)

Look these up in TGB

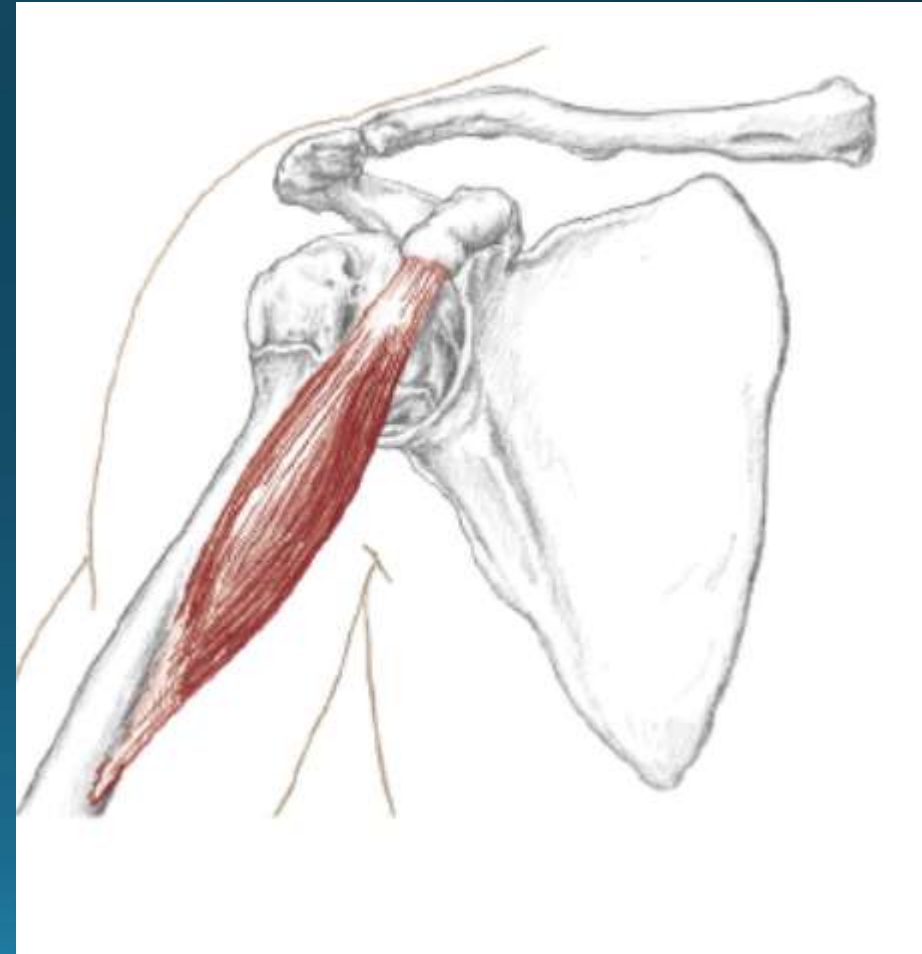
Back Rub Restrictions - Coracobrachialis

Coracobrachialis TBG

- A** Flex the shoulder (glenohumeral joint)
Adduct the shoulder (G/H joint)
- O** Coracoid process of the scapula
- I** Medial surface of mid-humeral shaft
- N** Musculocutaneous C6, 7

When Do You Use Your Coracobrachialis?

- Reaching around your face to scratch your opposite ear
- Weightlifting—doing a bench press
- In martial arts—a forearm block in front of your chest



Back Rub Restrictions - Coracobrachialis

Coracobrachialis

Yoga poses that strengthen/contract the coracobrachialis are any movements that take the arms overhead, such as Uttitha Tadasana

Good ways to stretch (much harder to get to):

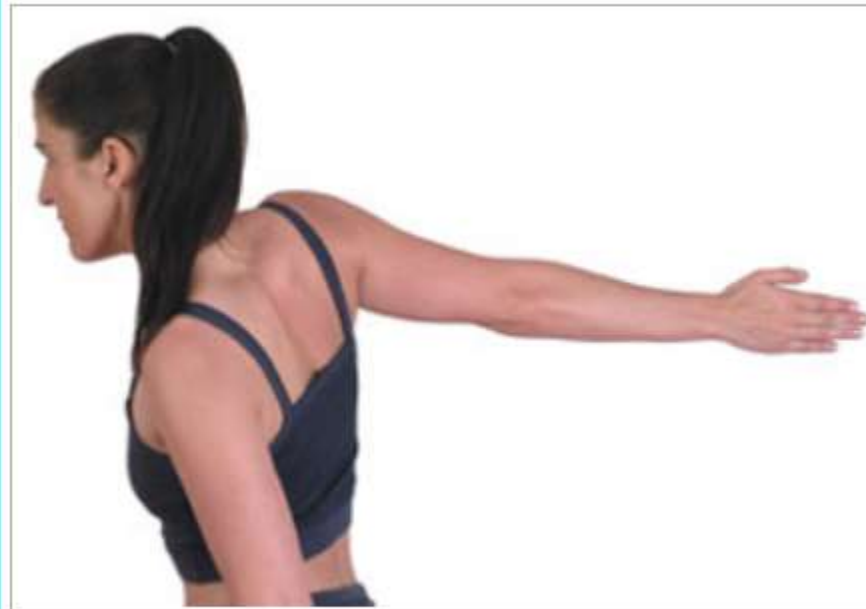
<https://www.youtube.com/watch?v=YUHafTkKe8o>

Back Rub Restrictions - Coracobrachialis

Coracobrachialis

This stretches the bicep, but also the coracobrachialis

Source: netfit.co.uk



Easy Bicep-Wall Stretch

1. Place the palm, inner elbow, and shoulder of one arm against the wall.
2. Keeping the arm in contact with the wall, exhale and slowly turn your body ↗ around, to feel the stretch in your biceps and pectoral muscles.
3. Adjust the hand position either higher or lower and repeat to stretch the multiple biceps and chest muscles.

Back Rub Restrictions – Anterior Deltoid - SBAL

Anterior Delt: Flex, medially rotate and horizontally adduct shoulder at g/h joint

Yoga Poses that Contract/Strengthen Anterior Delt:

Gomukasana (Cow Face)

Utkatasana (Chair) with arms in standard chair position

Vrksasana (Tree) with arms overhead (esp. with hands clasped)

Yoga Poses that Stretch Anterior Deltoid:

Sun Worshipper

Purvottanasana (Incline or Reverse Plank – Upward Plank)

Back Rub Restrictions – Posterior Deltoid

Posterior Delt: Extend, laterally rotate and horizontally abduct shoulder at g/h joint (AB-duct)

Poses and Exercises that Contract/Strengthen Posterior Delt:

Urdhva Mukha Svanasana (Up Dog) by assisting Lats
Chakrasana (wheel)

Yoga Poses that Stretch Posterior Deltoid:

Vrksasana (Tree) with arms overhead (esp. with hands clasped)
Thread the Needle (standing, seated, on all 4's)

Hand to Shoulder Blade Restrictions - Major

Infraspinatus (previously covered)

Anterior Deltoid (previously covered)

Supraspinatus (previously covered)

Subscapularis (previously covered)

Arm Abduction

1. Client lets arm hang by side.
2. **Anterior Delt: Thumb up**, client abducts arm to 90 degrees while tester applies gentle pressure above wrist. Keep elbow straight but not locked
3. **Posterior Delt: Thumb down**, client abducts arm to 90 degrees while tester applies gentle pressure above wrist. Keep elbow straight but not locked

No Restrictions: Pain free to shoulder level (90 degrees)

Restriction: Painful or unable to go to shoulder level

Deltoid SBAL

Exercises/asanas already covered for anterior/posterior delts



Scapular Mobility

1. Client raises arm slowly overhead
2. Put hand on scapula to feel for movement.

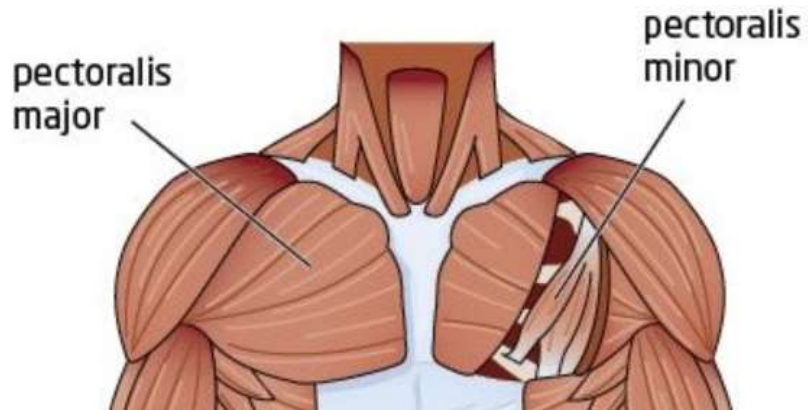
No Restrictions: Pain free and there should be a 2:1 ratio of movement between scapula and arm. Scapula moves half as far as arm does as the arm raises

Restriction: Proper ration of movement may be inhibited by any muscle attaching to scapula. Subscapularis does not restrict scapular motion: it restricts arm abduction

Pec Minor DFAL, **Lower Traps** SBAL, **Serratus Anterior** SL,
Rhomboids SL and DBAL, **Levator Scapula** DBAL, **Middle Traps** SBAL

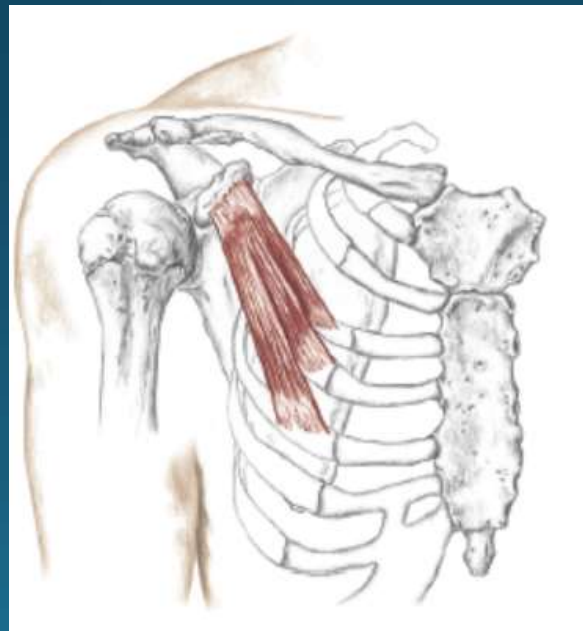


Scapular Mobility Restriction Pec Minor – DFAL (TBG p.92)



When Do You Use Your Pec Minor?

- *Throwing a punch*
- *Reaching into a deep front pocket*
- *Taking a deep inhalation*



- A** **Depress** the scapula (scapulothoracic joint)
- Abduct** the scapula (S/T joint)
- Downwardly rotate** the scapula (S/T joint)
- With the scapula fixed:*
 - Assist to **elevate** the thorax during forced inhalation
- O** Third, fourth and fifth ribs
- I** Medial surface of coracoid process of the scapula
- N** Medial pectoral, with fibers from a communicating branch of the lateral pectoral C(6), 7, 8, T1

Scapular Mobility Restriction Pec Minor – DFAL

Yoga poses that strengthen pec minor:

Works with rhomboids to lift the chest in poses such as tadasana, boat pose (navasana), headstand and warrior II. Also, poses that target pec major, such as plank, 4 Limbed staff pose, etc. will target pec minor, too.

Stretches for pec minor:

Fish pose and door frame stretches

Door Frame Stretches

- While doing this stretch, as you breathe in and out, think of your ribcage expanding in ALL directions – 360 degrees – almost like a balloon inflating and deflating.
- Try to focus on keeping your abs engaged and your spine neutral. This will help prevent your ribcage from flaring out and keep the stretch focused on the pecs.

Part 1: The Setup

Place your elbows on a doorframe, a little bit higher than your shoulders, and step through the doorway with your feet in a split stance

Part 2: Agonist Contract Relax

Contract your pec muscles as you push into the door with your forearms

Hold for 5 seconds as you keep the pecs activated

Release and relax into the doorway stretch for 5 seconds

Part 3: Antagonist Contract Relax

Lift your arms away from the doorframe, contracting your deltoid muscles

Keep your delts active as you hold for 5 seconds

Release and relax into the passive stretch for 5 seconds

Door Frame Stretches (continued)

Part 4: Stabilizer Contract Relax (external rotators)

Next, lift only your hands away from the doorframe to activate your shoulders' external rotators

Hold and actively contract for 5 seconds

Release and relax back into the stretch for 5 seconds

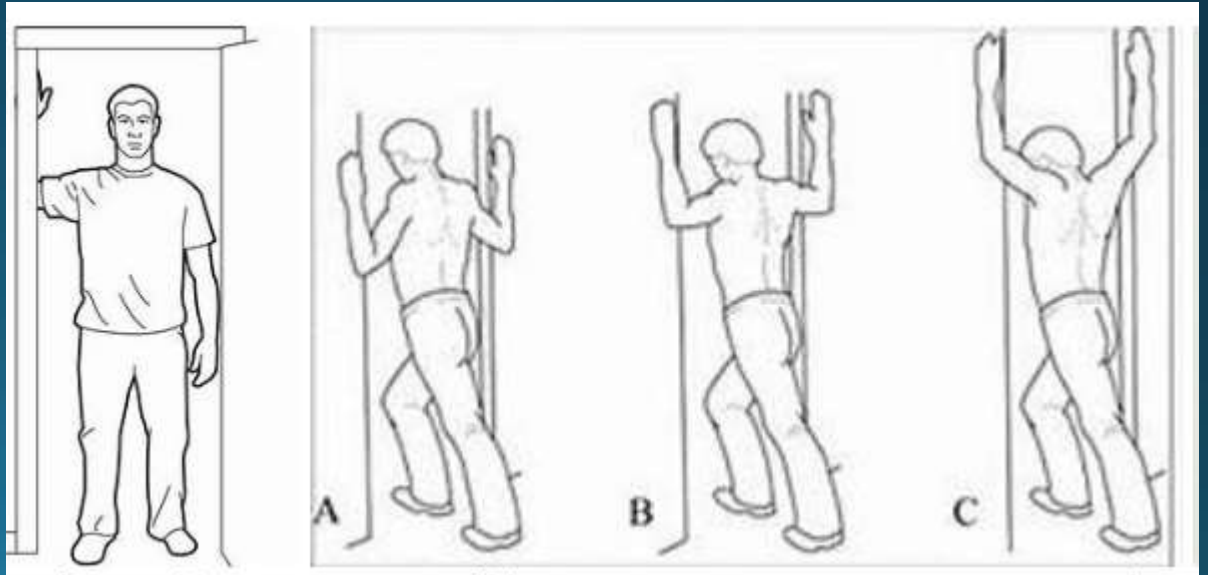
Part 5: Stabilizer Contract Relax (internal rotators)

Press your hands forward into the door frame like you were rotating your hands down (your elbows might pop off the door frame a bit)

Hold for 5 seconds, activating your shoulders' internal rotators

Release and relax into the passive stretch

Note: This photo shows progression and regression for this stretch. For less intensity, use one arm and do not lean into it. The instructions provided ask you to place the elbows a little higher than shoulders. As depicted in the photos, you can try different positions to vary the intensity.



Scapular Mobility Restriction - Lower Traps

Lower Traps SBAL – Contraction of lower traps draws scapulae downward

Poses/Exercises to Strengthen lower (and mid) traps:

Tolasana/Uttitha Padmasana (Scales/Lifted Lotus)

Specific exercises - prone

<https://www.youtube.com/watch?v=oRB1sku8fx8>

Poses/Exercises to Stretch lower traps:

Balasana (Child's Pose)

Twisted Balasana (shift hips to one side, arms to other)

Adho Mukha Shavasana (Down Dog)

Scapular Mobility Restriction – Serratus Anterior SL

Poses/Exercises that Strengthen Serratus Anterior:

Down Dog at Wall, Dolphin, Forearm Balances

Wheel, Handstands, Crow with straight arms

Tolasana, Deep Breathing, Trikonasana (see Key Muscles)

Chaturanga Dandasana (assists pecs), side plank

Think “boxer’s punch” – allows us to quickly extend arm and draw back in

Poses/Exercises that Stretch Serratus Anterior:

Wall Press (elbows straight, press into wall and contract rhomboids while stretching serratus anterior)

Konasana

Lie prone over large fitness ball, relax and stretch arms overhead and then at a “V” shape angle

Scapular Mobility Restriction – Rhomboids SL and DBAL

Poses/Exercises that Strengthen:

Marichyasana I (opens chest)

Trikonasana (opens chest)

Virabhadrasana II (opens chest)

Salabhasana (Locust – draws shoulder blades together)

Poses/Exercises that Stretch:

Garudasana (Eagle)

Balasana (Child's)

Thread the Needle

Scapular Mobility Restriction

Levator Scapula, DBAL

Middle Traps, SBAL

Traps and Levator were previously covered

Arm Pull-Back

1. While seated, client rotates thumb down; raises 90 degrees to side
2. Holding shoulders/trunk still, bring an arm back on the diagonal and lift up toward shoulder level. Do not take elbow/wrist beyond shoulder level.
3. Note position and side to side differences

No Restrictions: Arm reaches straight back in line level with opposite shoulder

Restriction: Arm does not reach straight back

Major Restriction - Biceps DFAL (see previous bicep stretch in this deck; to strengthen, straight arm Crane perhaps, or utilize traditional exercises such as bicep curls)

Strengthen/Contract Bicep:

Sarvangasana (shoulder stand)

Stretch Bicep:

Purvotanasana (reverse plank)



The link below contains tests for:

Over Shoulder Reach

Overhead Reach

<http://round-earth.com/RotatorCuffTests.html>

Both these tests determine if client has a major restriction in **triceps**.

Stretch the triceps with Gomukasana (top arm) and strengthen the triceps with Chaturanga Dandasana

Hands and Fingers

Hand Grip

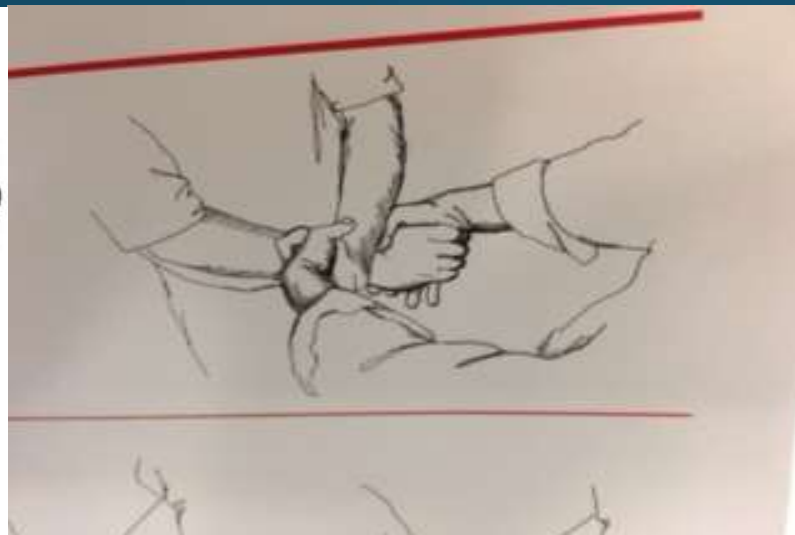
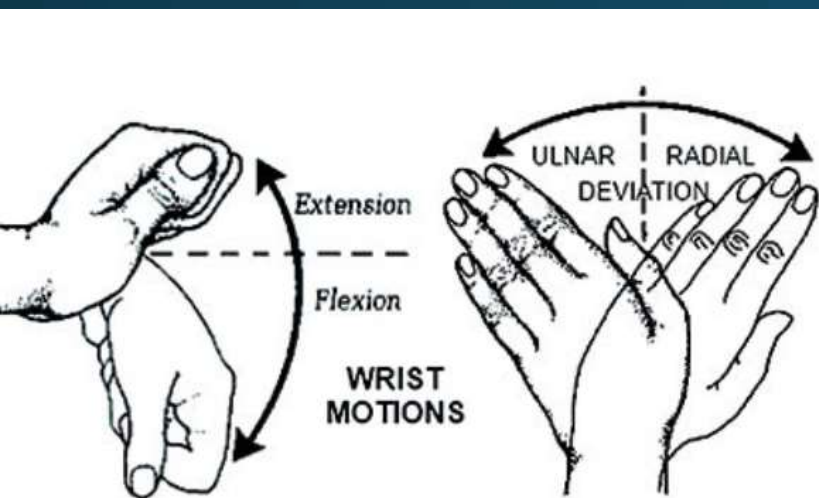
1. With crossed hands, shake hands with client and relax
2. Test handgrip bilaterally, with wrist in ulnar deviation and flexion

No Restrictions: Strong grip on each side

Restriction: Weak grip on affected side

Note: This is more of a strength than ROM test, but lack of grip can be caused by either issue – lack of strength or lack of ROM.

Hand Extensors SBAL, **Brachioradialis** SBAL and DBAL



Hand Grip - Restrictions

Hand Extensors – Recommend working all finger/hand muscles for hand-grip restriction. Note, the exercises shown in the link below both stretch and strengthen. Additionally, roll the hands using small balls.

<http://www.webmd.com/osteoarthritis/oa-treatment-options-12/slideshow-hand-finger-exercises>

Brachioradialis (look up in TGB) - To stretch – see photos below, or visit

https://www.youtube.com/watch?v=WrgGrL_SaTo



Pronation and Supination

1. Client holds arms directly out in front and pronate (palms down)
2. Take client's hands and supinate (turn palms up)

No Restrictions: Full pronation and supination; palm horizontal

Restriction: Palms/thumbs at angle/palms not horizontal

Main test restrictions: Pronator Teres , Supinators

Remember, supination test (turning palm up) contracts supinators,
So the pronators are the restricted (shortened) muscles.

Below shows supination, opposite direction is
pronation

Pronator Teres , SFAL Supinator



Pronator Teres, Supinator

Yoga Poses/Exercises that Stretch Pronator Teres and Supinator

Supinator: Parsvottanasana (Pyramid Pose) with palms down on floor, reaching toward back foot (supinators)

Below – stretches for both supinator and pronator teres

http://www.naspspa.org/AcuCustom/Sitenam/DAM/o18/Forearm_Pronator_Stretch.pdf

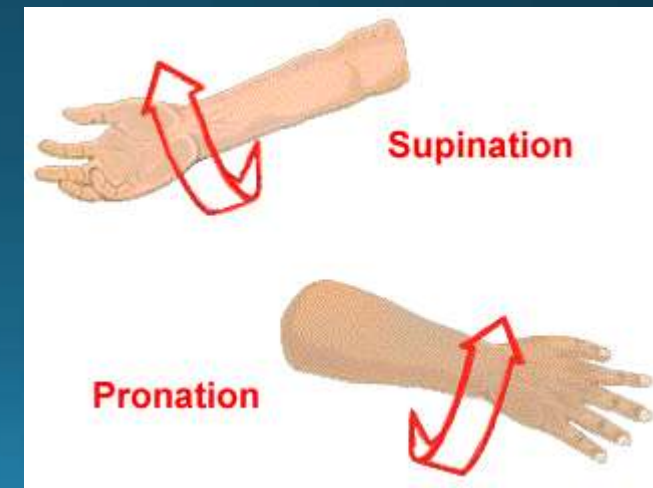
<https://www.youtube.com/watch?v=Bk1cfcDwTtM>

Yoga Poses/Exercises that Contract/Strengthen Pronator Teres and Supinator:

Down Dog (contracts pronator teres)

Motion like you are turning a door knob both directions (supinator and pronator teres)

Purvottanasana (Upward Plank or Incline/Reverse Plank – contracts pronator teres)



Finger Press

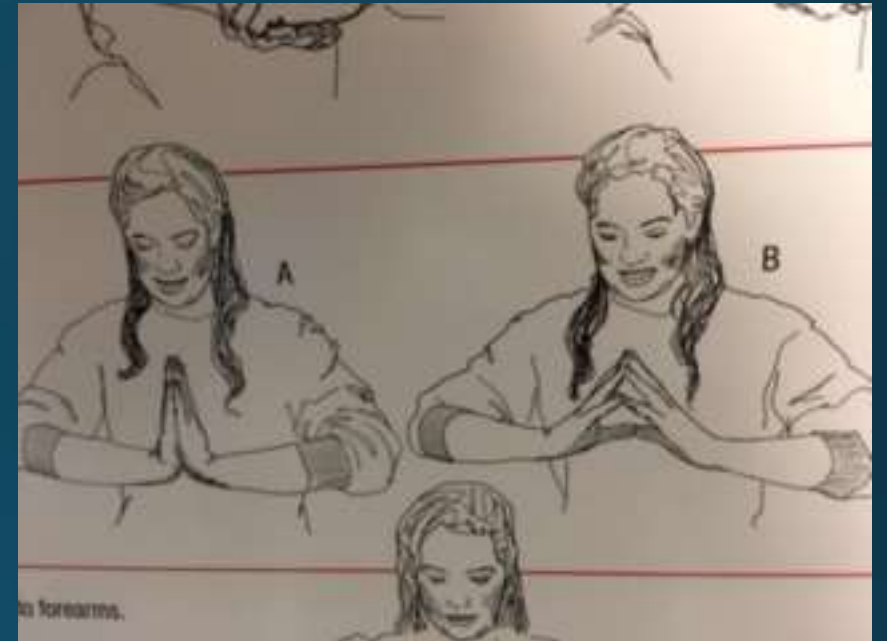
1. Client touches fingertips together – think “Namaste hands” with elbows pointed out laterally away from body and hands brought into center of chest
2. Press palms together, forearms horizontal

No Restrictions: Fingers and palms meet with no tightness or pain

Restriction: Difficult or painful to join fingers and palms

Finger Flexors, SFAL Wrist Flexors (see TGB book)

These are both strengthened and stretched by many poses and exercises we've reviewed, such as doorway stretches, wall stretches, down dog, plank, rolling (esp. with balls).



Phalen's

1. Client presses backs of hands together, flexing both wrists to 90 degrees relative to forearms
2. Hold for 60 seconds
3. Note any numbness or tingling of thumb, index or middle fingers

No Restrictions: Full rotation, no pain, numbness, tingling

Restriction: Numbness and tingling suggest compression of median nerve.



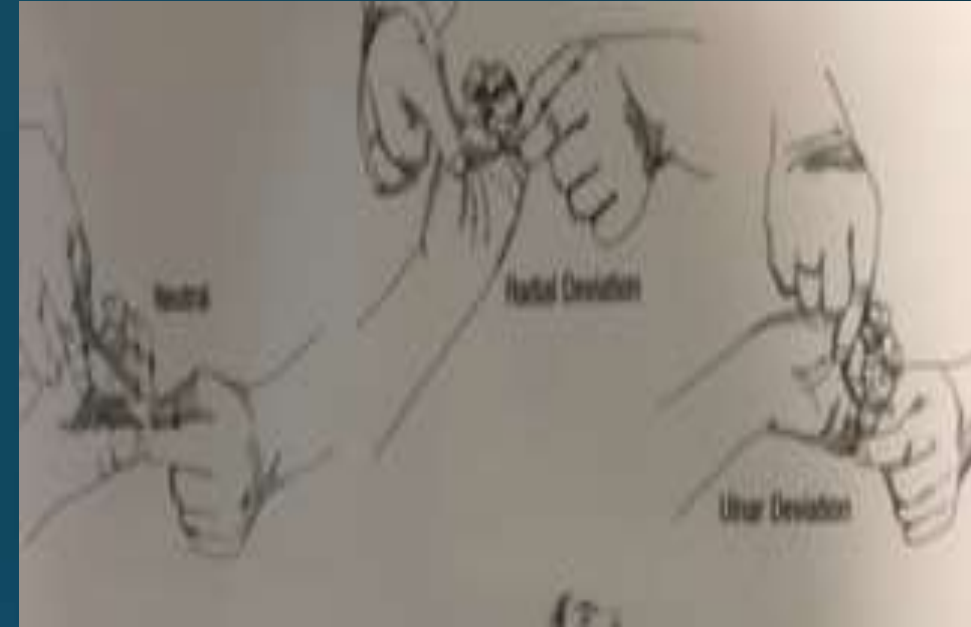
Finger Extensors, SFAL (see TGB book)

These are stretched by many poses and exercises we've reviewed, such as doorway stretches, wall stretches, reverse Namaste hands, rolling (esp. with balls).

These are contracted/strengthened when we use a "jar opening" motion

Pinkie/Thumb

1. With hand in neutral position (wrist straight), client presses thumb and little finger together.
2. Tester will use index finger and thumb to try to pull apart the client's pinkie and thumb, judging how much effort it takes to do so (without being aggressive)
3. Do this same test in wrist extension, wrist flexion, ulnar deviation, radial deviation



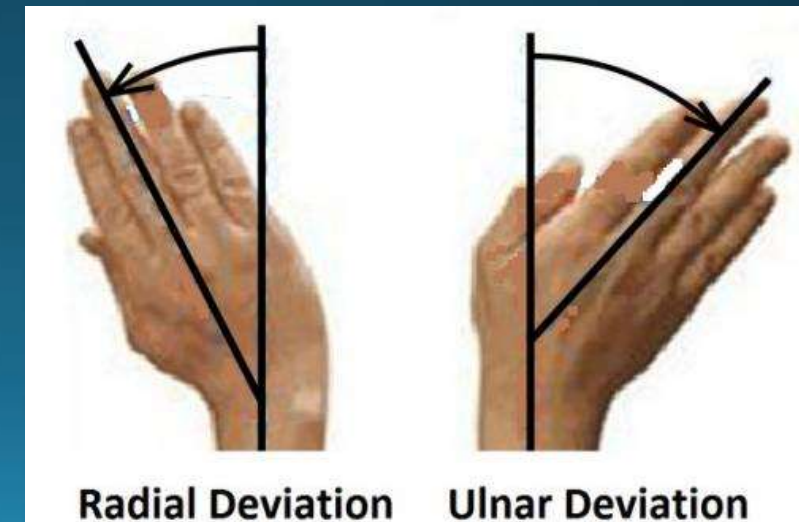
No restrictions: All positions equally strong with no weakness

Restrictions: Variable weaknesses

Muscles: **Hypothenar Muscles, DBAL**

Thenar Muscles (Opponens Pollicis, Adductor Pollicis, Flexor Pollicis Brevis, Abductor Pollicis Brevis), DFAL

Use ball exercises/rolling/stretches to strengthen and stretch

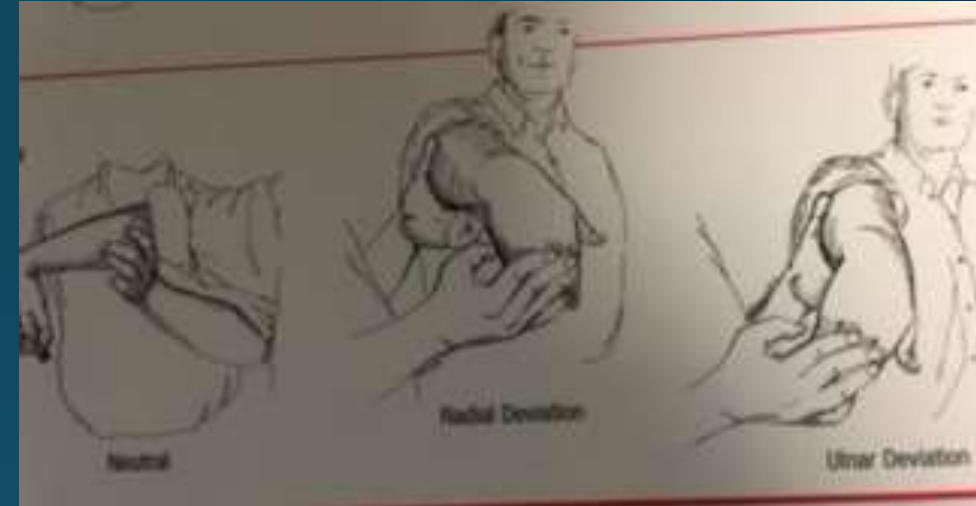


Wrist and Finger Extensors

1. Ask client to bring arm in front of body to shoulder level (as if doing anterior delt lift) with the elbow straight and wrist flexed
2. Support client's arm below elbow with one hand while using other hand to press gently on back of client's palm to flex wrist to 90 degrees

No Restrictions: Wrists flexes to 90 degrees with no pain or restriction

Restriction: Wrist fails to flex to 90 degrees or is painful



Muscles Restricted: Extensors of the Wrists and Fingers

Use ball exercises/rolling/stretches to strengthen and stretch