

BrCA Lab Techniques 2019

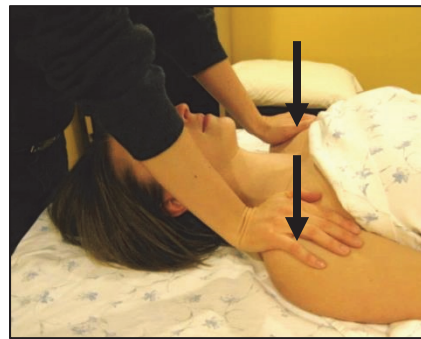
Supine Assessment and Treatments

Ideal for mastectomy with or without reconstruction, tissue expanders, lumpectomy after radiation, and 3 weeks post-lumpectomy.

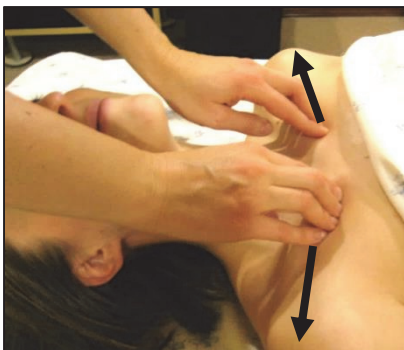
1. Assess forward shoulders in supine (provided there is no excessive kyphosis and/or scoliosis).
 - a. Distance from table to posterior edge of scapula at acromion.
 - b. Ideal: 2 fingers (Pt's-sized fingers) forward.
 - c. Excessive kyphosis or scoliosis makes test unreliable.



2. Assess ability to clavicular posterior rolling/push forward shoulders posterior. If unilateral, compare sides. If bilateral, compare to "normal."



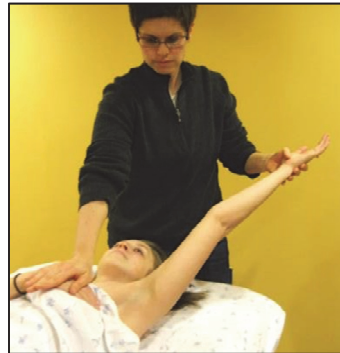
3. If stiff, first treat subclavius with sweeping technique (but avoid treating during or immediately following XRT completion).
 - a. Sit at patient's head and curl fingers around inferior edge of clavicle. Sweep from medial to lateral using treatment cream or oil.
 - b. If your fingers are hypermobile, stand facing the head of the patient and use your thumb over thumb, or your thumb reinforced with fingers, to complete your sweeping. Try to push up under the clavicle during the technique.
 - c. Ensure slow, steady pressure to allow for a deeper technique.



4. Assess intercostal mobility (same techniques as subclavius; use cream) between clavicle and 2nd rib, 2nd and 3rd rib, 3rd and 4th, and 4th and 5th, as able, gliding with fingertips (standing at Pt's head), or with AP compression/gliding with ulnar side of hand (standing at Pt's side). Compare side to side with alternating compression/glides, or to normal if bilateral surgery.

Treat hypomobility with compression or sweeping techniques with your fingertips standing at the patient's head or the ulnar side of your hand, standing at the patient's side, reinforced with the other hand if you have finger hypermobility issues.

5. After STM of subclavius and intercostals, reassess ability to push forward shoulders back/posterior clavicular rolling.
6. If hypomobile, assess pectoralis major length with supine hands behind head ROM testing, or into PNF D2 flexion positioning.



7. If pectoralis major is stiff, treat with pectoralis bending with any of 3 techniques:

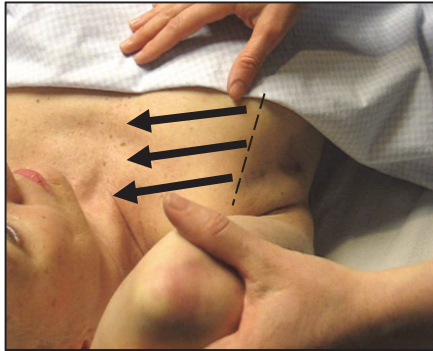
- 7.a Pectoralis major bending/sweeping: Standing at patient's head, apply cream to pectoralis regions and chest. With your fingers, bend and sweep the pectoralis majors at the same time, starting at the distal/lateral axillary region, then pulling towards the center of the clavicle, letting the tissues glide. Compare mobility, if unilateral, or compare to "normal," if bilateral.



- 7.b Hand-behind-head pectoralis major muscle bending (mobilization with movement): Stand at the patient's involved side, facing their head. Be sure the pillow is not under the involved shoulder. Without cream, apply bending pressure to the lateral edge of the pectoralis major in 3 positions superior to the breast/tissue expander. Maintain bending pressure as the patient lowers her elbow to tolerance, stretching the muscle.

- 7.b.1 Two-handed technique - Best for no reconstruction. Stand facing the patient's head and grasp the pectoralis major muscle belly in both hands and bend it towards the opposite ear, with the patient's elbow facing the ceiling, so the muscle is on slack. Maintain your muscle-belly bend as patient lowers her arm towards the treatment table. Repeat 5-10 times. (See photo, next page).

7.b.2 One-handed technique - Best for expanders. Stand facing the patient's head with one hand bending the pectoralis major muscle belly towards the opposite ear as the other hand supports the Pt's elbow as she lowers it down towards the table. You will feel tension on the muscle belly as she lowers her elbow. If expanders are placed, this will be an uncomfortable technique with immediate HBH ROM improvements after 5-10 reps.

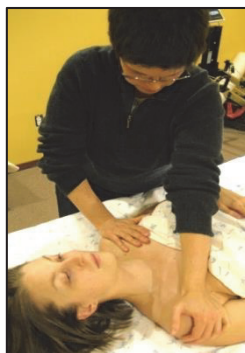
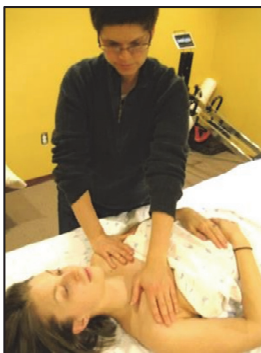


One-Handed Technique



Two-Handed Technique

7.c Deep sweeping of the pectoralis major for post-mastectomy without reconstruction or with tissue expanders (unless during or immediately following XRT completion). Stand on the opposite side to the side you will treat. Apply cream to the involved chest. Fix the uninvolved shoulder down towards the table using one hand. Use your other palm to apply pressure as you glide from just lateral to the sternum towards the coracoid process. Be sure to let up pressure over the coracoid process. Repeat 5-10 times with slow, deep pressure, externally rotating the humeral head towards the end of your stroke. Be sure to begin applying your posterior pressure once your hand is no longer on the sternum. Pts tolerate deeper pressure with a slowly-applied technique. Avoid pressure directly on the clavicle.

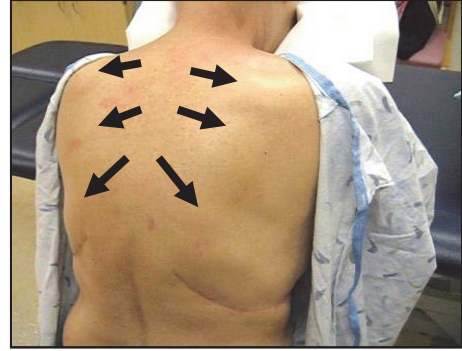


8. Assess diaphragm fascial mobility after mastectomy without reconstruction or with tissue expanders. Assess with deep stationary circle techniques along the rib angles on each side and treat with the same techniques, with or without cream. Add deep breathing tense/relax techniques as needed, holding your deep pressure as they inspire then falling into the softness of each expiration for 3 repetitions. Treat along the entire edge of the rib angle on each side that is stiff.



Seated Assessment and Treatment

Assess posterior intercostal mobility in sitting and treat with same techniques. Have patient lean forward on tabletop massage cradle or facing forward leaning on treatment table with arms and head resting on pillows. Apply cream and sweeping compression from just lateral to the spine to the edge of the scapula of the uppermost ribs, keeping in mind the horizontal orientation of the ribs. Fix the ribs on one side with posterior to anterior compression with one hand, then glide on the other side with the other hand for a true assessment. Alternate sides or treat bilaterally. As you move more inferiorly, keep in mind how the rib angles become more angled and be sure to work around the scapulae, avoiding direct pressure in that region. You can also add paraspinal compressive sweeping techniques in this position.



Sidelying Assessment and Treatment

Treatment frequently needs to begin in supine or sidelying due to most patients being unable to change positions into prone easily, at least initially.

Start with space correction and tissue-bending, soft-tissue techniques that address the flank along the axillary incision, mastectomy incision, drain site, or latissimus flap incision. These techniques are also excellent for post-radiation tissue stiffness, but wait until 3-4 weeks after radiation completion and ensure good skin healing.

1. C-Strokes

- a. Can be completed with or without cream.
- b. Grasp the superficial tissues of the inferior axillary region in your hands, “pinching an inch.”
- c. Bend the tissues into a C, as shown in the photo, or use the “Pac-Man” hand position demonstrated on the video. Be sure to apply equal force between hands, pushing towards each other in the “Pac-Man” position.



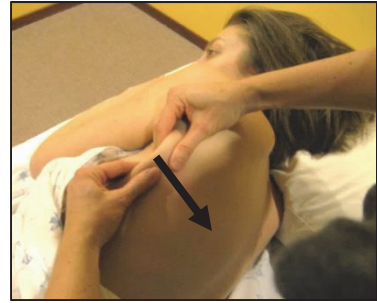
2. S-Strokes

- a. Can be completed with or without cream.
- b. Grasp the superficial tissues of the inferior axillary region in your hands. “pinching an inch.”
- c. Bend the tissues in an “S” shape by moving your hands in opposite directions, then switch directions so the “S” faces the opposite direction. You can complete the technique as in the picture, right, or, to avoid using your thumbs, use your fingers to pull and push the tissues in opposite directions with the fingertips of both hands facing the anterior side of the patient.



3. **Backwards Skin Rolling**

- To be completed with cream.
- Grasp the superficial tissues of the inferior axillary region, or along the axillary incision, in your hands by “pinching an inch.”
- Pull both hands back towards the posterior side of the patient, letting the tissues glide out from within your hands.
- Repeat 5-20 repetitions as needed.



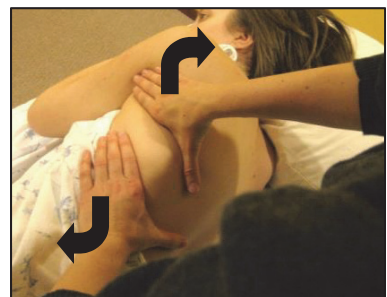
4. **Pinch an Inch** with scapular protraction mobilization with movement (MWM)

- Apply cream to the inferior axillary region.
- Grasp the adhered tissue with the “pinch an inch” technique.
- Hold the tissue as the patient actively protracts her scapula with elbows straight and palms resting on top of each other. Allow the tissue to slide out from within your grasp as the patient stretches.
- Repeat 5-20 repetitions as needed



5. **Circular Mobilizations**. Ideal for post-radiation tissue adhesions and post-surgical scarring. Can be completed with or without cream applied to the inferior axillary region.

- Place your hands side by side on the involved tissue. Apply pressure towards the treatment table to the superficial or deep fascia layers equally with both hands.
- Approximate your hands towards each other for the maximal “space correction” (mound of tissue). If your hands are too far away from each other, or too close, you will not achieve the maximal space correction of the tissues. When you have the correct approximation, you will feel tissue resistance between the first fingers of each of your hands.
- Next, maintain your deep pressure as you move your hands in opposite directions, one forward and one back. As you hold your space correction and move your hands, the tissue will mobilize against itself, resolving adhesions.
- Lastly, stretch the tissues with your hands moving away from each other. Repeat these circular movements. Initiate compression towards the table, then draw your hands in opposite directions, one going forward and one back. Repeat these circular movements 15-20x, changing the orientation of your hands often in order to fully address the disorganized scar tissue in the adhered region.



6. Sidelying Compressive Techniques with Shoulder Scaption.

Ideal for latissimus reconstruction scars/adhesions and inferior axillary adhesions at least 6 weeks post-radiation therapy.

- a. Stand at the head of the bed and apply cream to the inferior axillary region.
- b. Establish superficial or deep pressure towards the adhesions and slowly sweep your hand inferior towards the patient's waist with your foot-hand as you assist the patient's arm into scaption. Repeat 5-20 repetitions.



Axillary Web Syndrome Techniques

Begin proximally at the axilla and work distally directly onto, or surrounding, the cording.

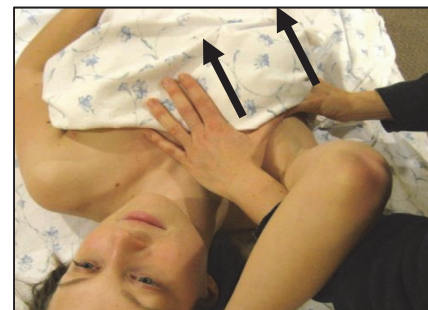
1. Supine hand-behind-head axillary whole-hand technique: Ideal for true/pseudo cording and axillary adhesions, post-surgery.

- a. Ensure the pillow is not under the involved shoulder.
- b. This technique may be completed with or without cream.
- c. Stand on the involved side facing the patient's feet with their involved hand behind their head. Begin with their elbow up towards the ceiling and your head hand supporting them under their elbow. Using your foot-hand, establish whole-hand pressure over their axillary incision or adhesions, stretching their superficial tissues inferiorly. Maintain your pressure as the patient lowers her elbow towards the table, to tolerance. Repeat 5-20 repetitions.

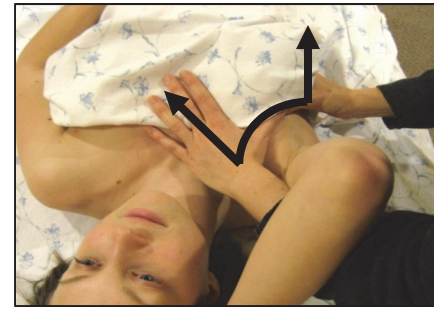


2. Supine hand-behind-head axillary directed techniques: Ideal for true/pseudo cording and axillary adhesions directly on the incision, post-surgery. This is the same as the whole-hand inferior axillary technique but with more directed pressure. It can be completed with or without cream.

- a. Standing on the involved side, facing the Pt's uninvolved side hip, place both hands directly on the axillary incision with thumbs in the "football field goal" position. Stretch the superficial tissues towards the opposite hip, maintaining your pressure as your patient lowers her elbow towards the treatment table. Repeat as needed.
- b. This technique can be done with your hands medial to patient's elbow, lateral to her elbow, or with one hand through the bend of her elbow, as pictured, right.



- c. For more directed pressure on the incision, bend the scar into a “C” (picture at right).
- d. Another option is to use your thumb for more directed pressure, typically in 3 locations on the incision.
- e. Consider adding a self-mobilization to the HEP. The patient completes HBH stretching with a self-stretch of the breast tissue or axillary incision, pulling towards the opposite hip. (Pictured below)



Direct Cording Techniques

1. **Pinch an Inch Shoulder ER.** Ideal for painful cording or least-aggressive technique. Completed without cream.
 - a. Position the patient with her arm either in HBH position or into abduction, with her elbow extended, until there is a stretch of the cording but no pain.
 - b. With your foot-hand, grasp the tissue surrounding the cording at the medial upper arm with a “pinch an inch” hand position. Maintain your grasp of this tissue, pulling gently towards patient’s feet as you externally rotate her shoulder with your head-hand. The cords will be within the mound of tissue being held by your foot-hand. The fatty adhesions will be mobilized off the cording with this technique.
 - c. Complete this technique in 3 positions: (1) Closest to the cording at the proximal 1/3 of the humerus. (2) Mid-humerus. (3) Most distal on the humerus. Repeat the steps proximal, middle, distal or, to facilitate lymphatic drainage, begin proximal, middle, distal, then repeat the steps back towards the axilla: distal, middle and proximally.
 - d. To make the technique more challenging for the patient, position the shoulder into more horizontal abduction or abduct the shoulder closer to the head before you complete the shoulder ER technique.
 - e. You may also complete this technique using elbow extension for the stretch on the tissues.



2. Pinch an Inch “C” Stroke with Stationary Circle

- a. Position the patient with her arm either in HBH position or in abduction with her elbow extended, into a stretch of the cording, but not into pain.
- b. Stand facing the patient’s head. For the patient’s R arm, your left hand will be “pinching an inch” along the cording, beginning just lateral to the axilla. Your right hand will be bending the cords into a “C” initially, pushing superiorly, then stretching the tissues centrally into a stationary circle towards the axilla.



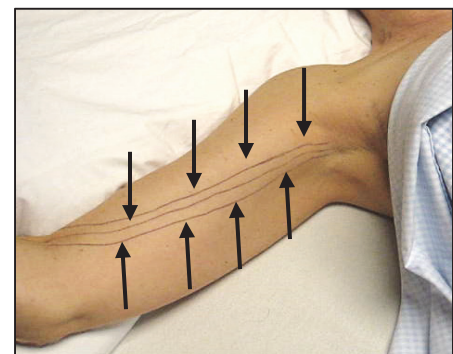
- c. Once the cording is no longer palpable at the elbow, repeat the 4-5 C-strokes along the upper arm from the elbow towards the axilla. With each individual stroke, the direction of the stretch will be towards the axilla.
- d. Once you have completed one set of “C” strokes along the cording, reposition the arm into more abduction, placing the cording on more stretch, and repeat your manual techniques. Try repositioning 3 times for 3 sets of manual techniques down and back up the arm.

3. “S” Strokes along the cording. Ideal for palpable cording in the upper arm. Completed w/o cream.

- a. Position the patient with their arm either in HBH position or in abduction with their elbow extended, into a stretch of the cording, but not into pain.
- b. Stand facing the patients head. Surrounding the cords in the upper arm near the axilla, gently “pinch an inch” of fatty tissues. Then bend the cords into an “S”-one hand bending the tissues superiorly, one hand bending the tissues inferiorly. You will feel the cords being stretched as you bend the fatty tissues and skin. Change direction of stretching with your hands so the “S” faces the opposite direction.

- c. Repeat along the cording in 4-5 locations moving your hands more and more closely to the elbow, alternating directions of the “S” before moving your hands to the next location. Once the cording is no longer palpable near the elbow, repeat your techniques returning the way you began, moving more closely to the axilla with each technique.

- d. Once you have completed 1 set of “S” strokes down and back up along the cording, reposition the arm into more abduction, placing the cording on more stretch, and repeat your manual techniques. Try repositioning 3 times for 3 sets of manual techniques down and back up the arm.



4. Axillary Webbing Fixation with Abduction/Elbow Extension. Ideal for cording that extends past the cubital fossa.

a. Have the patient scoot towards the edge of the table.

b. Stand facing the patient's head, cradling her involved arm against your body.

c. Use your hand to stretch the axillary skin near the cording towards the patient's contralateral hip. Use either your fingertips oriented as in the picture, or your hand facing patient's opposite hip using your webbed space. The patient can also hold her own tissues with her opposite hand.



d. Maintain your fixation pressure as you rock your hips to move the patient's arm into abduction. As you rock back to a neutral position, relax your foot-hand to ease the tension on the cording.

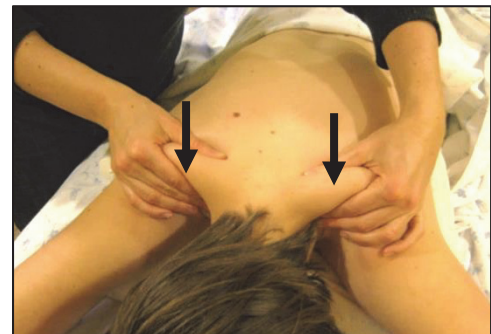
e. Repeat in an on/off manner or with sustained stretching. To increase tension on the cording, add elbow extension by rotating your hips so that your shoulders are parallel with the table.

f. Increase difficulty by lowering patient's arm into more horizontal abduction as the cording becomes more pliable and less symptomatic.

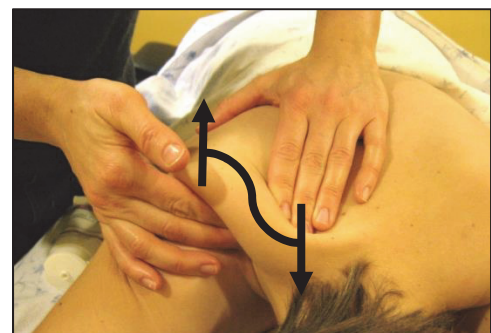
Trapezius Muscle

Treat overused trapezius (more often with tissue expanders) in prone, seated or sidelying with tissue bending and space correction techniques. (Add compressive techniques as needed 4-6 weeks post radiation). Be sure their head is in a neutral position for maximal relaxation of the muscle belly.

1. Trapezius Muscle Bending. Pinch an inch in the supraspinous fossa then bend the trapezius forward and back to mobilize the muscle within the fossa. This technique is very effective beginning 4-6 weeks post supraclavicular radiation therapy to improve adhesions of the trapezius in the supraspinous fossa. Most patients will have poor anterior mobility of the trapezius within the fossa after radiation and do not tolerate compressive techniques initially.



2. Trapezius Muscle Bending. S-Stroke. Place your hands on the patient's upper trapezius, fingers facing their head. Draw your hands in opposite directions, pushing the soft tissue forward with one hand and pulling back with the other to make an "S" with the tissues, with your fingers facing their head. You can complete this technique with or without cream.



3. Complete circulation mobilization assessment and treatment of SCF/upper back.

Serratus Palsy

1. Strengthen substitutions: Triceps and short lateral rotators



2. Stretch triceps and short lateral rotators

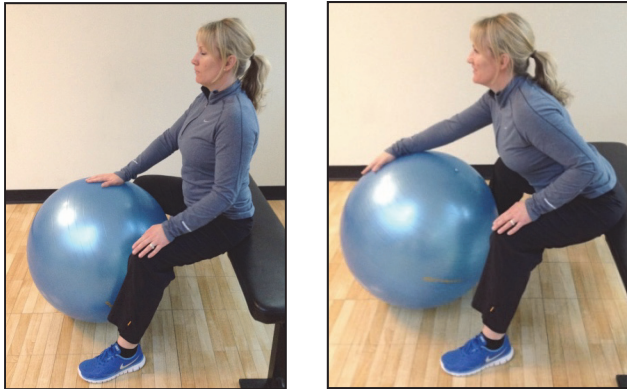


Helpful Hints: Serratus Anterior Palsy

- a. Will take up to 3-4 months for strength to return.
- b. Ensure NO winging is noted during HEP to ensure success.
- c. STM trapezius to deal with compensations.
- d. Start with weekly/every other week visits.
- e. Gradually reduce frequency to every 3-4 weeks to allow strengthening to occur between sessions.

Serratus Anterior Strengthening Progression

1. Gravity Reduced Shoulder Protraction



Sit on a firm surface with your legs on each side of an exercise ball.

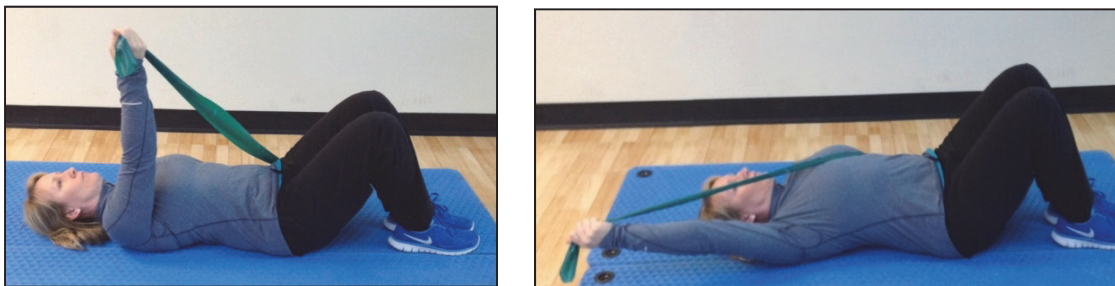
“Stick” your ___L___R___B hand(s) on the top of the ball.

Push the ball forwards, elongating your torso.

Hold 5 seconds.

Repeat ___x___set(s) ___x/day.

2. Gravity Reduced Shoulder Flexion



Lie on your back with your knees bent up.

Grasp a ___white___yellow___red___green___blue___black exercise band in your ___L___R hand with your thumb pointing up towards your head. Begin with your fist facing the ceiling as in the picture above.

Pull the band up over your head. Focus on squeezing your shoulder blade down as you elongate your arm over your head. Then, return your arm to the starting position.

Repeat ___x___set(s) ___x/day.

3. Sidelying Scapular Protraction



Lie on your ___L___R side with your knees bent and your palms together.

Be sure to keep your elbows straight throughout the exercise.

Slowly, slide your top palm forward on the bottom palm, moving your shoulder blades and rotating your spine and ribs.

Return your hand to the starting position.

Repeat ___x___set(s)___x/day.

4. Supine Scapular Protraction with bias for Serratus Anterior



Lie on your back with your knees bent up and your palms together.

Ensure your elbows are straight and your hands are at your eye level.

Slowly slide your ___L___R hand towards the ceiling. Keep your elbows straight. Return your arm to the start position.

Repeat ___x___set(s)___x/day.

5. Hands and Knees Windshield Wipers



Start in hands and knees on a firm surface.

Bring both arms to one side then sit back on your heels.

Hold 5 seconds.

___ Add a deep breath



Then, bring your arms to the midline and once again, sit back on your heels.

Hold 5 seconds.

___ Add a deep breath



Then, bring both arms to the other side then sit back on your heels.

Hold 5 seconds.

___ Add a deep breath

___ Repeat from one side to the other then back ___x___ set(s)

___x/day.

6. Hands and Knees Arm Slides



Begin in hands and knees position on a firm surface.

Without shifting your body weight, unweight your ___L___R arm then slide it forward until your elbow is straight while keeping your body still. Return your arm to the starting position.

___ Alternate sides. ___ Lift your arm and extend your arm forward at the end of the arm slide.

Repeat ___x___ set(s) ___x/day

7. Hands and Knees Leg Slides



Begin in hands and knees position on a firm surface.

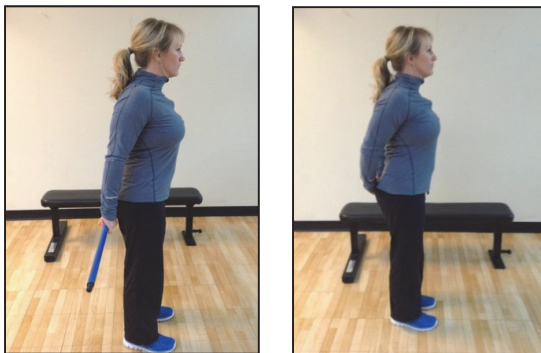
Without shifting your body weight, unweight your ___L___R leg then slide it back until your knee is straight while keeping your body still. Return your leg to the starting position.

___Alternate sides. ___Lift your leg and extend your leg back at the end of the leg slide.

Repeat ___x___set(s)___x/day

Pectoralis Major and Minor Stretching with Upper Back Strengthening

Hands behind back chest opening stretch



Grasp your hands behind your back or grasp a broomstick behind your back.

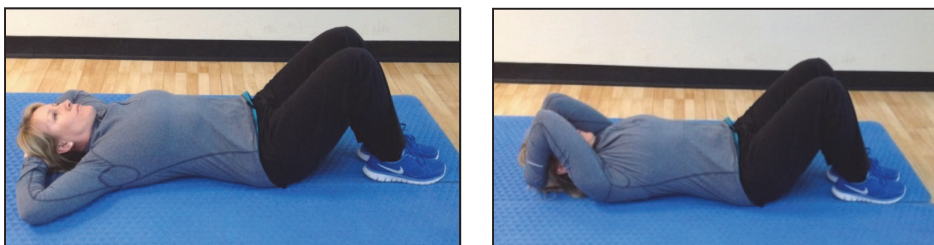
Open your chest by rolling your shoulder heads apart and gently down.

Hold 5 seconds.

Repeat ___x___set(s)___x/day.

Shoulder Stretching and Trunk Elongation

1. Supine hands behind head



Lie on your back with your hands behind your head.

Open your chest by separating your elbows apart and gently down. Hold for 5 seconds.

Then squeeze your elbows in together. Hold 5 seconds.

Repeat ___x___set(s)___x/day.

2. Supine hands overhead



Lie on your back with your hands interlaced.
Elongate your torso and straighten your elbows while you stretch your arms overhead.
Hold for 5 seconds then lower your arms.
Repeat ___x___set(s)___x/day.

3. Supine hands overhead with lower trunk rotation



Lie on your back with your hands interlaced.
Elongate your torso and straighten your elbows while you stretch your arms overhead.
Keep your arms overhead while you rotate your legs to the ___L___R side.
Hold for 5 seconds then ___ rotate to the other direction, or ___repeat to the same side. Be sure to keep your knees together.
Repeat ___x___set(s)___x/day.

4. Hands and knees sit backs



Position yourself in hands and knees.
Slowly sit back on your heels while reaching your arms forwards.
Hold 5 seconds.
Repeat ___x___set(s)___x/day.

5. Seated ball pushes forwards



Sit on a stable surface with both hands “stuck” on an exercise ball.
Keep your chest up as you push the ball forwards. Hold 5 seconds.
Repeat ___x___set(s)___x/day.
___Add a deep breath at the end.

6. Supine hands behind head with lower trunk rotation or sidelying ½ chicken wings



Supine: Lie on your back with your knees bent up and your hands behind your head.

Keeping your knees together, rotate your legs to the ___L___R side. Hold 5 seconds. ___Add a deep breath. Repeat ___x___x/day.

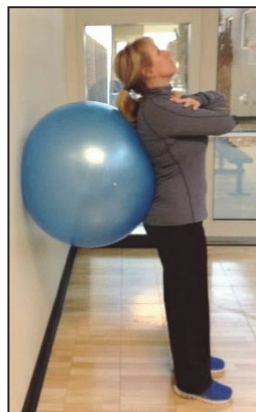
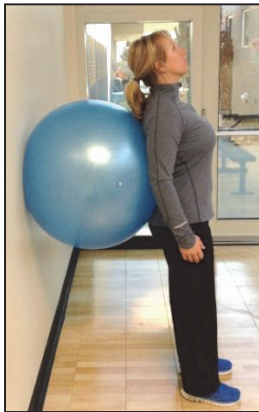
Sidelying: Lie on your ___L___R side with your top arm behind your head.

Keeping your knees together, rotate your torso and chest backwards, opening your top arm and try to touch the mat with your elbow.

Hold 5 seconds. ___Add a deep breath.

Repeat ___x___set(s)___x/day.

7. Chest opening leaning on a ball on the wall progression (Part I & II)



Put an exercise ball in the small of your back so you can lean on it safely.

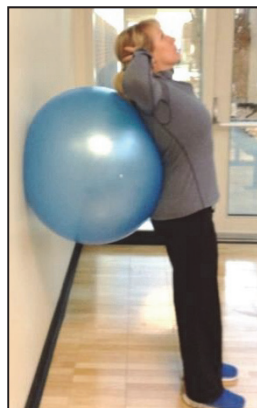
___With arms at your side lift your breastbone away from your belly button.

___With arms crossed lift your belly breastbone away from your belly button.

Hold 5 seconds.

Repeat ___x___set(s)___x/day.

8. Chest opening leaning on a ball on the wall progression (Part III & IV)



___With your hands behind your head and elbows facing front, lift your breastbone away from your belly button.

___With your hands behind your head and elbows back, lift your belly breastbone away from your belly button.

Hold 5 seconds.

Repeat ___x___set(s)___x/day.

Thoracic Spine and Rib Stretching

1. Seated chicken wing twist



Sit with your hands behind your head.
Keep your elbows back as you rotate to the ___L___R side(s).
Hold 5 seconds.
Repeat ___x___set(s)___x/day.
___Add a deep breath at the end.

2. Seated chicken wing sidebends



Sit with your hands behind your head.
Keep your elbows back as you bend to the ___L___R side(s).
Ensure you “lift” your elbow.
Hold 5 seconds.
Repeat ___x___set(s)___x/day.
___Add a deep breath at the end.

3. Seated ball push to side



Sit on a stable surface with ___L___R___B hand(s) “stuck” on an exercise ball.
Keep your chest up as you push the ball to the ___L___R side(s).
Hold 5 seconds.
Repeat ___x___set(s)___x/day.
___Add a deep breath at the end.

4. Overhead “Moose” Stretch



Stand with your thumbs interlaced and resting on your head.
Pull your belly button to your spine then straighten your arms overhead, squeezing your upper arms towards your head.
Hold 5 seconds.
Repeat ___x___set(s)___x/day.

5. Feldenkrais

Reach



Lie on your ___L___R side with your arms out straight and your top hand resting on the bottom hand.

Reach forward with your top hand, sliding it on the bottom, then return it to the starting position.

___Do only this portion of the exercise.

Repeat ___x___set(s)___x/day.

___Continue to the “roll” portion of the exercise.

and Roll



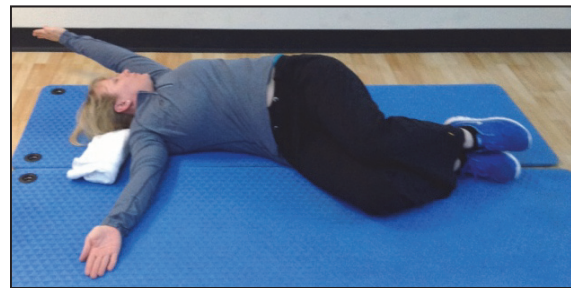
Keeping your knees together, rotate your spine and chest and open your arms. The goal is the top arm being parallel with the bottom.

Hold 5 seconds.

Repeat ___x___set(s)___x/day.

___Also complete ___x___ moving your top arm closer to your ear in a diagonal movement as you open your chest.

6. Sidelying Windmills

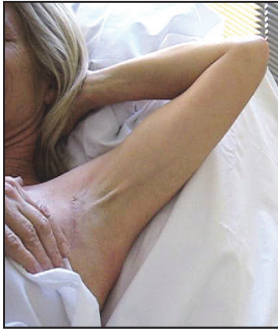


Lie on your side with the involved arm closest to the ceiling. Bend your knees and keep them together throughout the exercise.

Slowly rotate your top arm backwards like a windmill, keeping your elbow straight and try to touch the bed with your top arm as you make your circle. Be sure you move your torso and twist from the waist as you open your chest.

Repeat ___x___set(s)___x/day.

Self-Tissue Stretching



Lie on your back with your involved hand behind your head.
Gently stretch your breast/armpit skin towards the opposite hip.
Lower your elbow towards the bed.
Hold 5 seconds, then release the stretch on your skin and return your arm to the start position.
Repeat ___x ___x/day.



Lie on your back with your involved hand facing the ceiling.
Gently stretch your breast/armpit skin towards the same side hip. Raise your arm overhead while you keep stretching your skin. Hold 5 seconds, then release the stretch on your skin and return your arm to the start position.
Repeat ___x ___x/day.
___Stretch your arm a little more out to the side.



Lie on your back with your involved hand facing the ceiling.
Gently stretch your breast/armpit skin towards the opposite shoulder. Stretch your arm out to the side while you keep stretching your skin. Hold 5 seconds, then release the stretch on your skin and return your arm to the start position.
Repeat ___x ___x/day.