



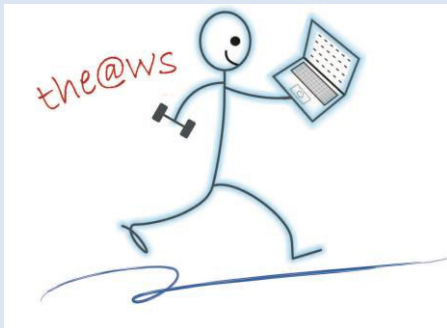
Application of THEWS protocol

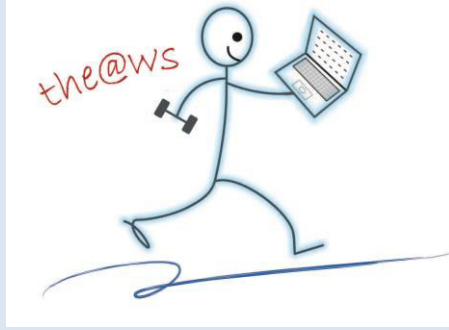
Anastasia Beneka, *Associate Professor DUTH*

Paraskevi Malliou, *Professor DUTH*

Every one has to “pay attention” to its
body pain signal !

Pain occurrence = a problem is coming



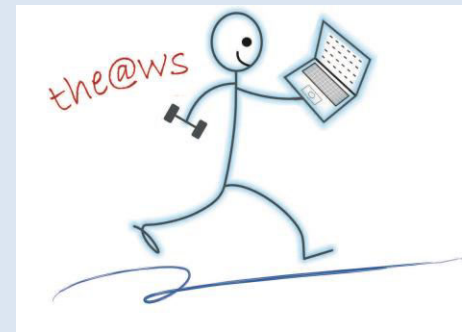


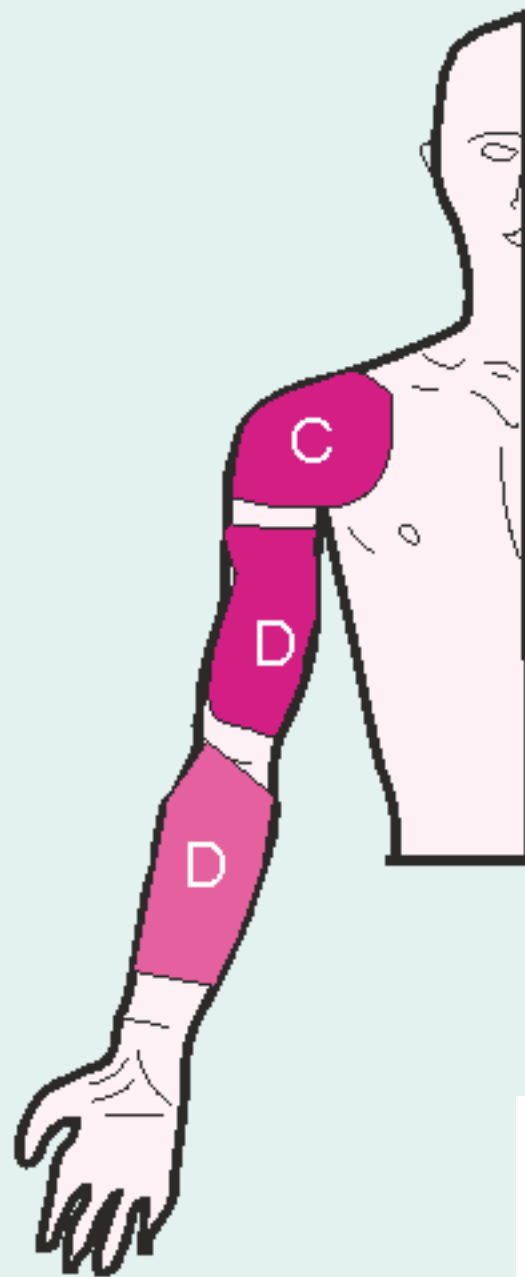
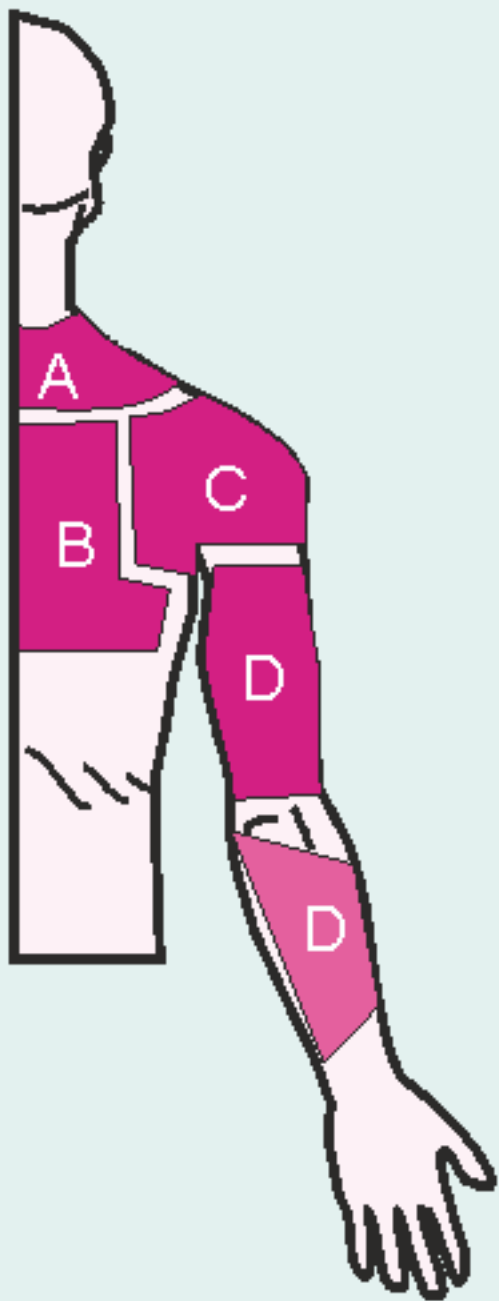
THEWS goals !

- Decrease neck and upper back pain area
- Improve muscle elasticity
- Improve muscle strength
- Achieve normal range of motion
- Improve functional ability at the work space

Types of exercise

- Proper position's (sitting and standing) adaptation exercises
- Stretching exercises
- Strength exercises
- Functional exercises





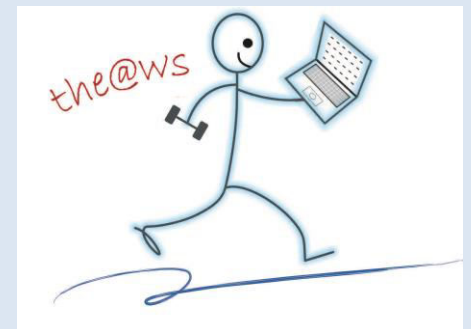
Some rules

- First, relaxation techniques.
- Next, perform positioning exercises.
- Then, stretching exercises.
- Simple strengthening exercises.
- After combination of stretching & strengthening exercises.
- Finally functional exercises in workspace.



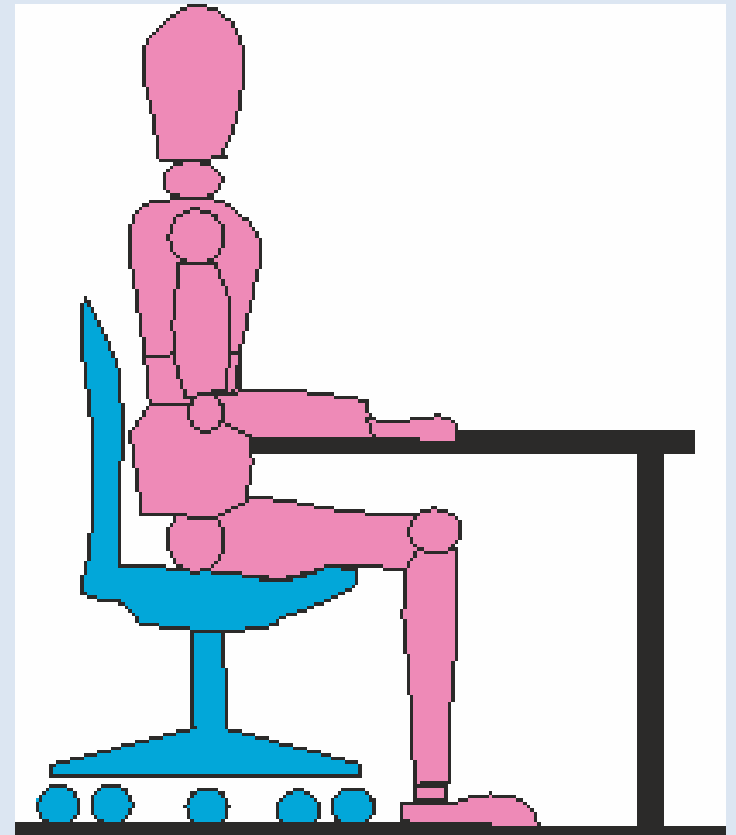
First, relaxation techniques !

- Small improvement in decrease of pain in some cases when they applied relaxation techniques (psychogenetic pain !) *(Misailidiou 2012)*



Next, perform positioning exercises (Segmental muscles).

- Activate the segmental muscles so someone can tolerate the proper sitting or standing position for a period of time.



Next, perform positioning exercises (Segmental muscles).

Sitting position.....

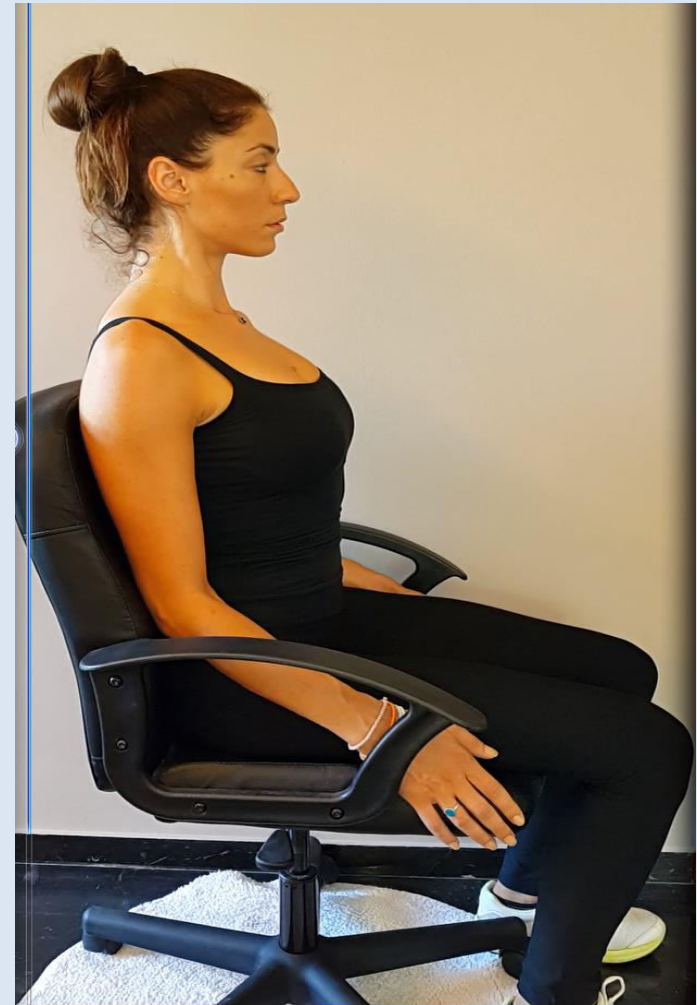
- Roll the pelvis forward to create a normal lumbar lordosis
- Lift the sternum, so the shoulders fall back into a neutral position.



Next, perform positioning exercises (Segmental muscles).

.....Sitting position

- Tuck the chin as if making a double chin and lift the head while maintain the chin tuck.
- Hold for 10 sec and relax.
Repeat.



Next, perform positioning exercises (Segmental muscles).

Standing position.....

- Perform pelvis tilt position in order to eliminate the lumbar extension and hold for 10 seconds.

(Check point: The lumbar spine should be flat and touching the wall).



Next, perform positioning exercises (Segmental muscles).

.....Standing position

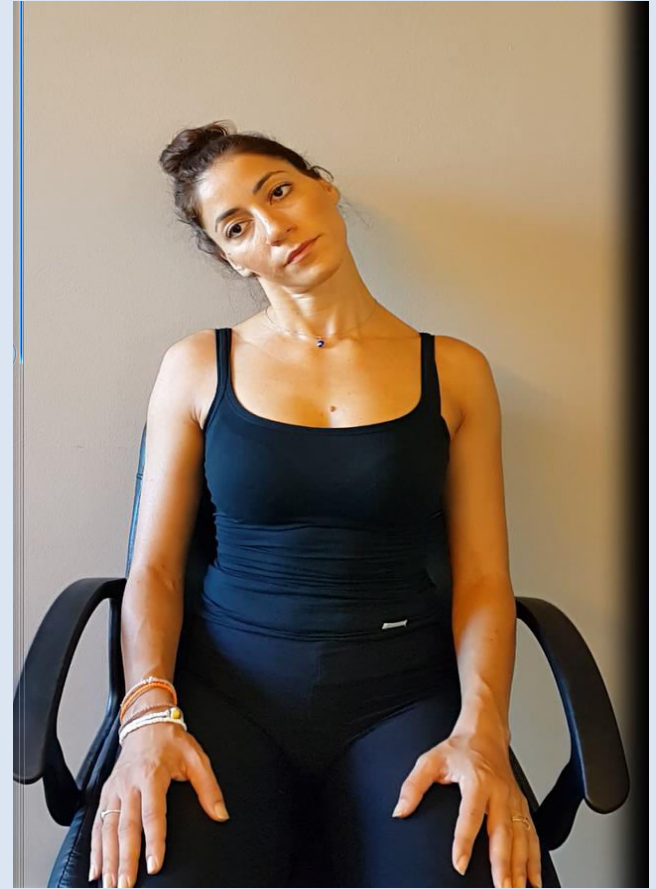
- While maintaining pelvis tilt (isometrically) bring the shoulders in contact with the wall and hold this position for 10 seconds. Check point: Shoulders should touch the wall and remain there.
- Tuck the chin and finally lift the head while maintain the chin tuck, pelvis tilt and shoulder mentioned position.

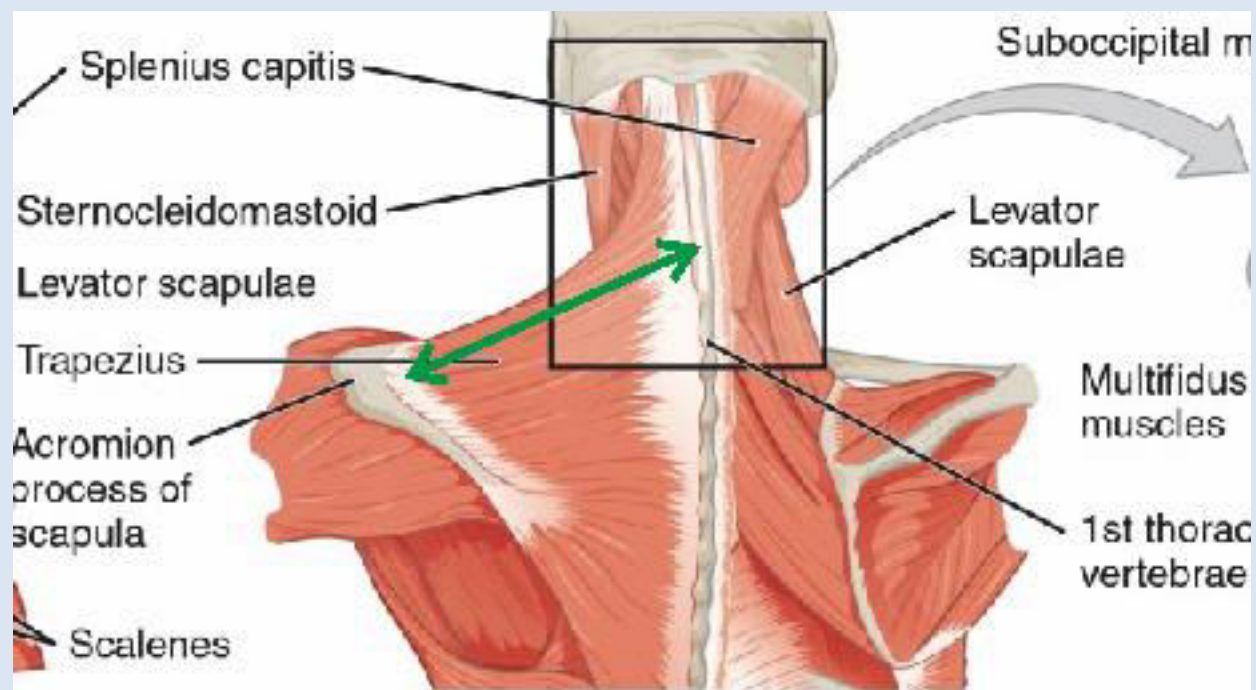


Then, stretching exercises.

Lateral neck flexors muscles' stretching 1

- Sit properly.
- Hold your upper back on the chair (your scapulas touch the chair).
- As you hold this position, bend laterally your head.
- Feel a mild stretch on the other side of the neck. Hold it for 12 s.
- Return to the initial position, and repeat to the other side.



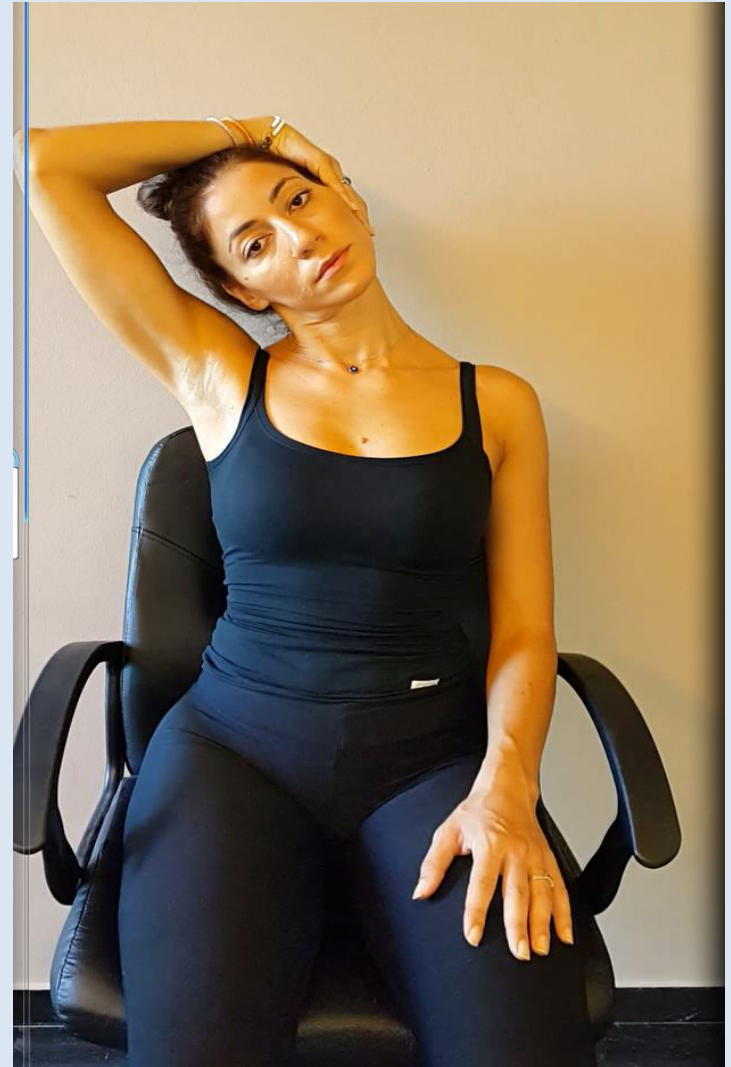


Superficial neck muscles:
right side trapezius removed
(posterior view)

Then, stretching exercises.

Lateral neck flexors muscles' stretching 2

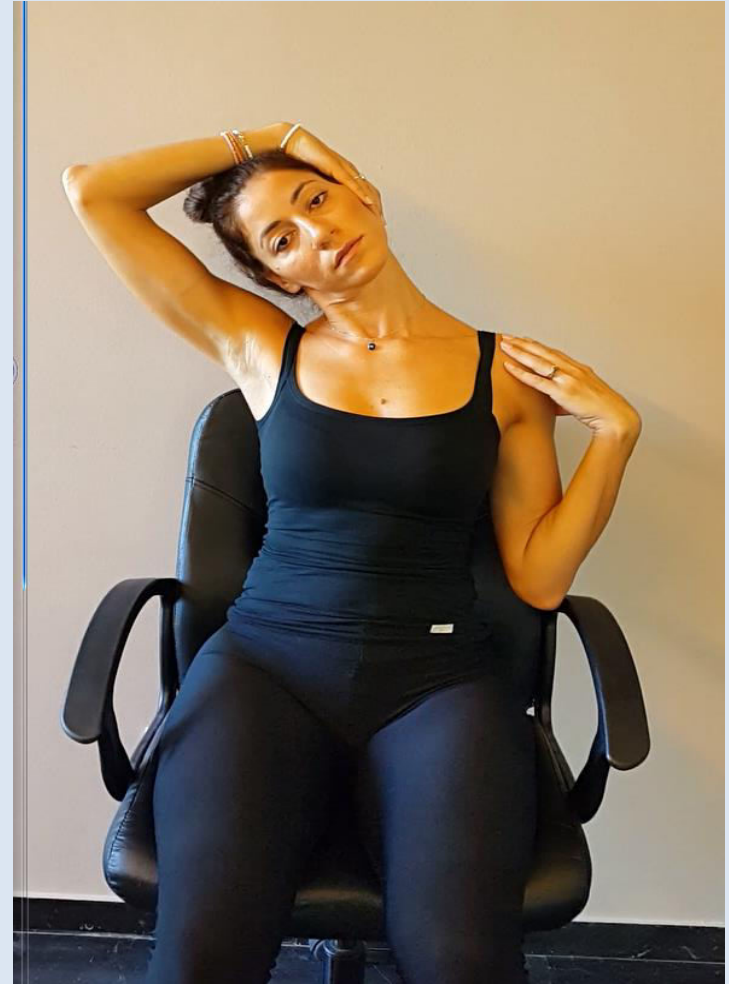
- Sit properly.
- Hold your upper back on the chair (your scapulas touch the chair).
- Place your arm over your head and touch with your hand the other side ear.
- As you hold this position, bend laterally your head while you help with your same side arm pushing your hand to increase the stretch.
- Feel a stretch on the other side of the neck. Hold it for 12 s.
- Return to the initial position, and repeat to the other side.



Then, stretching exercises.

Lateral neck flexors muscles' stretching 3....

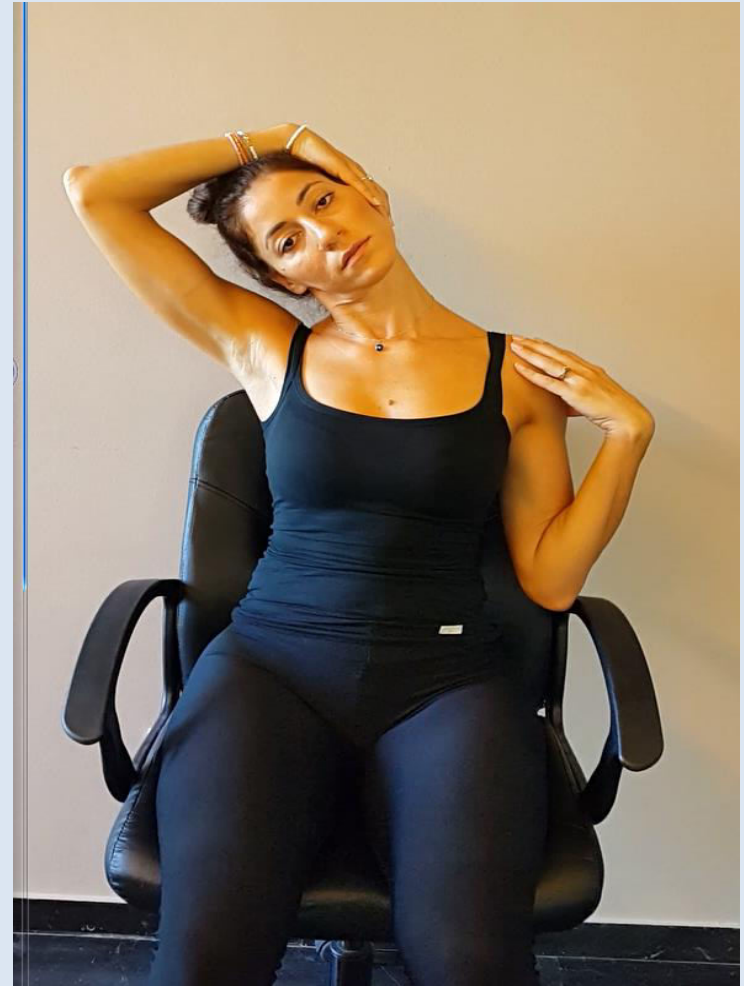
- Sit properly.
- Hold your upper back on the chair (your scapulas touch the chair).
- Place your same side arm over your head and touch with your hand the other side ear.
- Place the other side hand over the other arm and hold it.
- to the other side.



Then, stretching exercises.

.....Lateral neck flexors muscles' stretching 3

- As you hold this position, bend laterally your head while you help with your same side arm pushing your hand to increase the stretch. At the same time the other hand hold the other arm to stay still.
- Feel a stretch on the other side of the neck. Hold it for 12 s.
- Return to the initial position, and repeat to the other side.

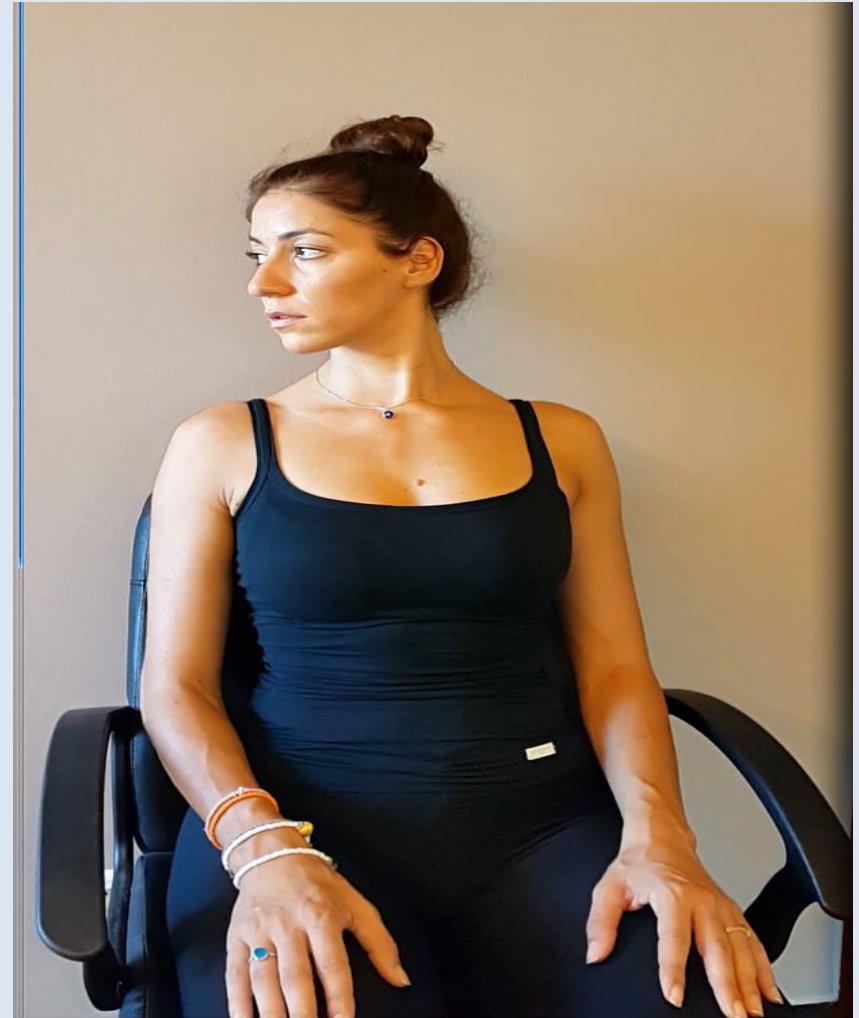


Then, stretching exercises.

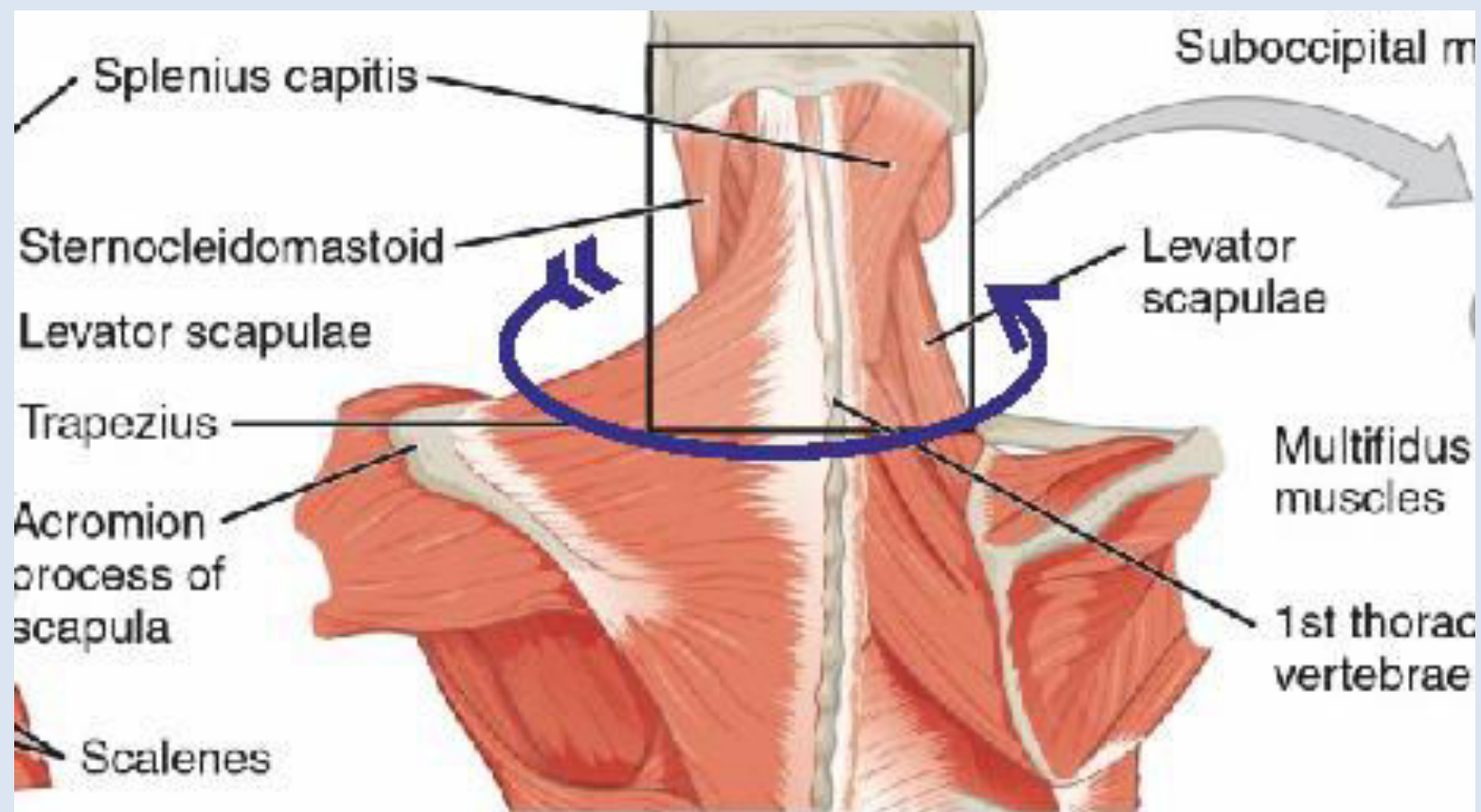
Rotator neck muscles stretching

Sitting position (as we mentioned before)

- Sit properly.
- Hold your upper back on the chair (your scapulas touch the chair).
- As you hold this position, rotate your head.
- Feel a mild stretch on the back side of the neck. Hold it for 12 s.
- Return to the initial position, relax and repeat to the other side.







Superficial neck muscles:
right side trapezius removed
(posterior view)

Then, stretching exercises.

Rotator neck muscles stretching with isometric activation

Sitting position (as we mentioned before)

- Sit properly.
- Hold your upper back on the chair (your scapulas touch the chair).
- As you hold this position, rotate your head.
- Feel a mild stretch on the back side of the neck.

Then, stretching exercises.

..... Rotator neck muscles stretching with isometric activation

Sitting position (as we mentioned before)

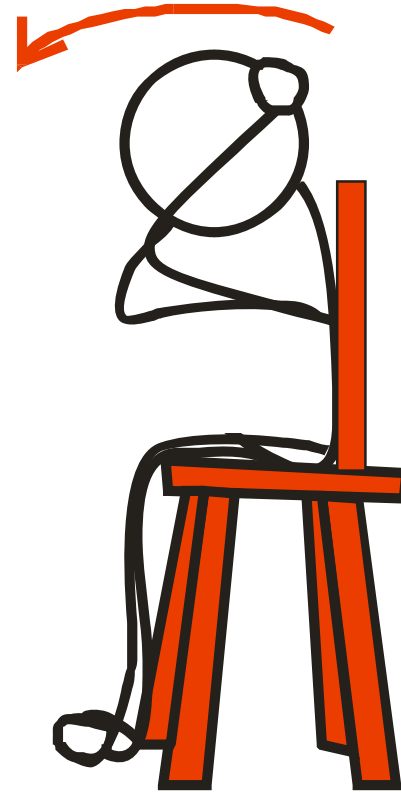
- Place your hand against your chin (right rotation – right hand).
- Try to return to initial position but your hand gently holds the head still.
- Hold it for 6 s. Relax.
- Then try to rotate more in the stretching position.
- Hold it for 12 s.
- Return to the initial position, relax and repeat to the other side.

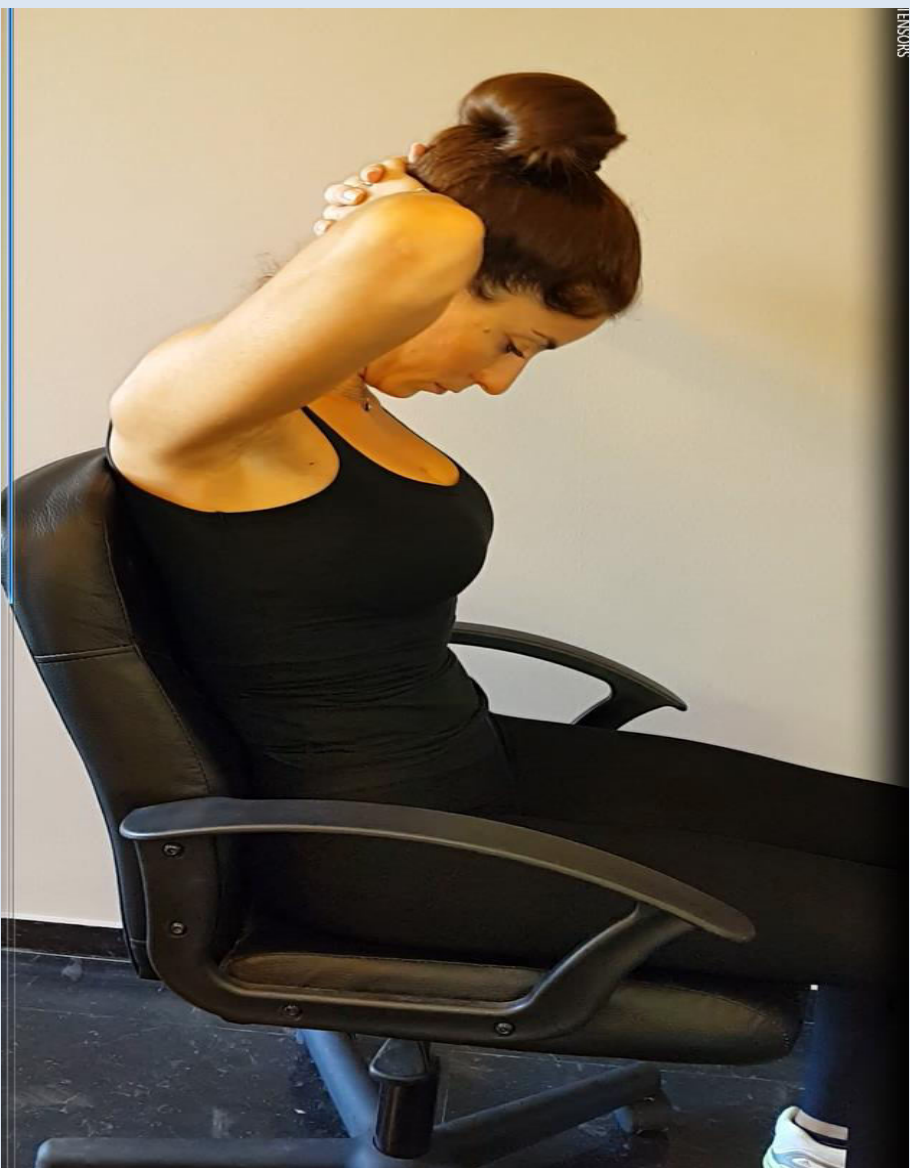
Then, stretching exercises.

Neck extensors muscles' stretching

Sitting position (as we mentioned before)

- Sit properly.
- Hold your upper back on the chair (your scapulas touch the chair).
- Place your hands over your head.
- Flex gently your head while you feel a mild stretch on the back side of the neck.
- Hold it for 12 s.
- Return to the initial position, relax and repeat.



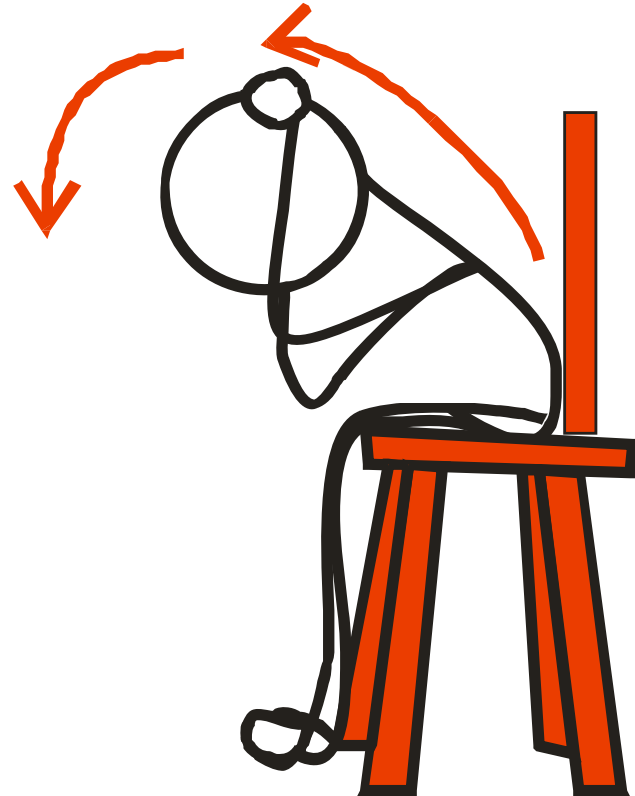


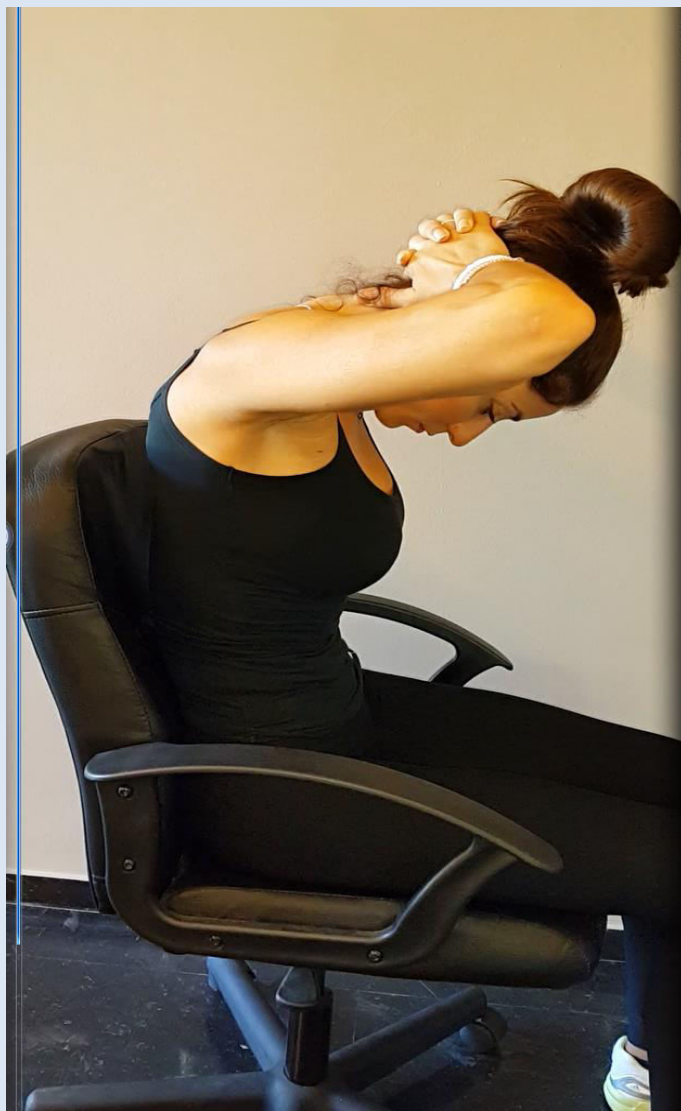
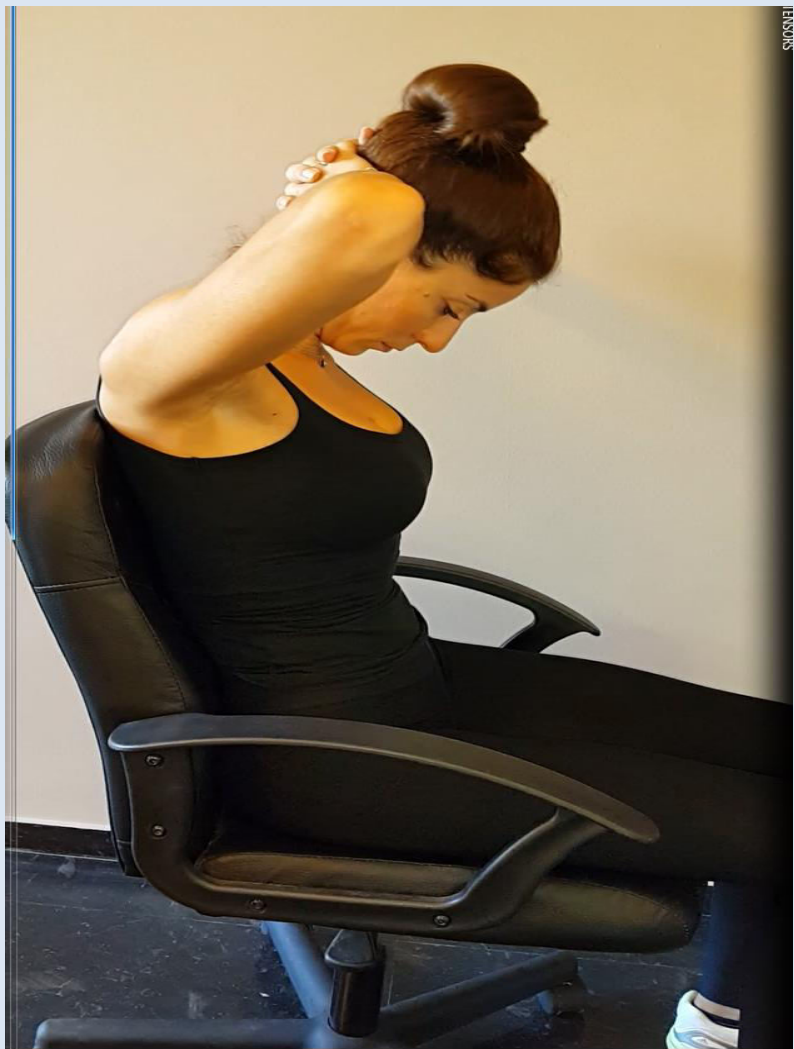
Then, stretching exercises.

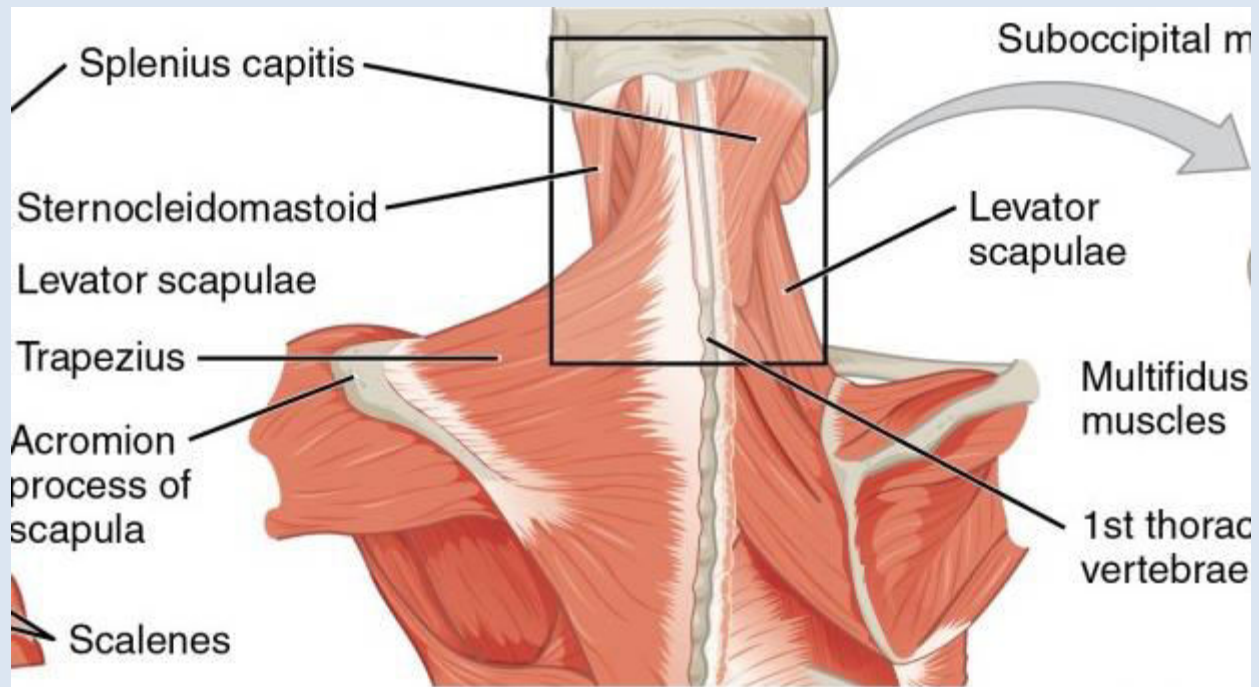
Neck extensors and upper back muscles' stretching

Sitting position (as we mentioned before)

- Sit properly.
- Hold your upper back on the chair (your scapulas touch the chair).
- Place your hands over your head.
- Flex gently your head while you feel a mild stretch on the back side of the neck.
- Then move slowly your torso forward (torso flexion, no more than 30cm away from the chair) while you feel the stretching is moving lower.
- Hold it for 12 s.
- Return to the initial position, relax and repeat.







Superficial neck muscles:
right side trapezius removed
(posterior view)

Then, stretching exercises.

Neck extensors muscles' stretching with isometric activation

Sitting position (as we mentioned before)

- Sit properly.
- Hold your upper back on the chair (your scapulas touch the chair).
- Place your hands over your head.
- Flex gently your head while you feel a mild stretch on the back side of the neck.

Then, stretching exercises.

.....Neck extensors muscles' stretching with isometric activation

Sitting position (as we mentioned before)

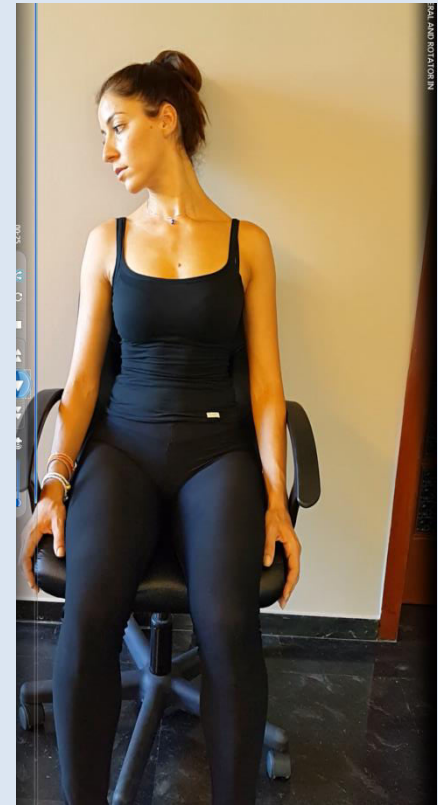
- Try to extent your head while you place a mild and controlled resistance with your hands without moving.
- Hold it for 6 s.
- Relax and try to stretch more to initial direction.
- Hold it for 12 s.
- Return to the initial position, relax and repeat to the other side.

Then, stretching exercises.

Lateral flexors and rotator muscles of the neck stretching

Sitting position (as we mentioned before)

- Sit properly.
- Hold your upper back on the chair (your scapulas touch the chair).
- As you hold this position, bend laterally your head.
- Feel a mild stretch on the other side of the neck.
- Then rotate your head to the same direction so you can try to look at the floor.
- Feel a mild stretch and hold it for 12 s.
- Return to the initial position, and repeat to the other side.



Then, stretching exercises.

Lateral flexors and rotator muscles of the neck stretching

Sitting position (as we mentioned before)

- Sit properly.
- Hold your upper back on the chair (your scapulas touch the chair).
- As you hold this position, bend laterally your head.
- Feel a mild stretch on the other side of the neck.
- Then rotate your head to the other direction so you can try to look at the ceiling.
- Feel a mild stretch and hold it for 12 s.
- Return to the initial position, and repeat to the other side.

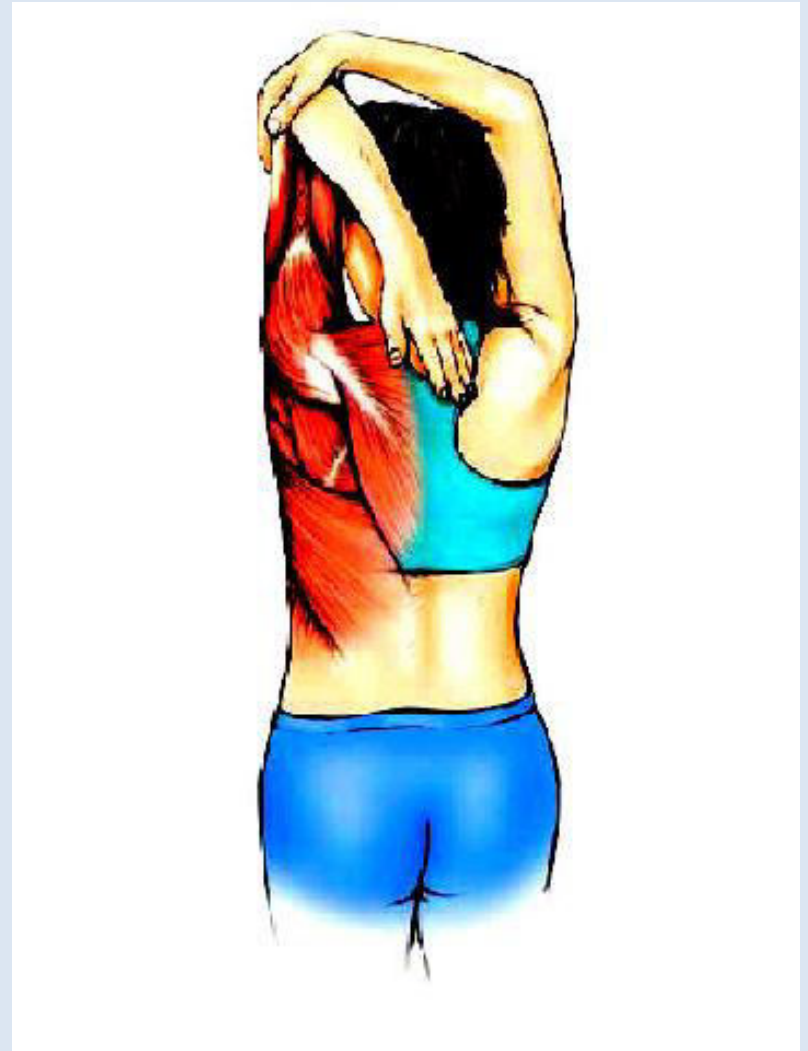


Then, stretching exercises.

Triceps stretching I

Sitting position

- Place your arm above and back your head and bend the elbow.
- Place the other hand above the other elbow while you move it to the center line of the body.
- Feel the stretch in the back area of the arm and hold it for 12 s.
- Return to the initial position, and repeat to the other side.

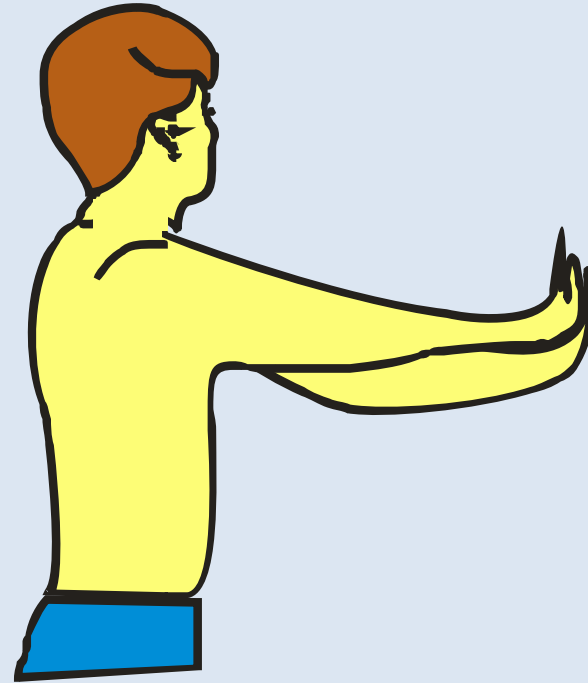


Then, stretching exercises.

Forearm muscle' stretching I

Sitting position

- Place your arms in front of your chest.
- Extend your right palm.
- Try to extend it more with the other hand.
- Feel the stretch in the inner area of the forearm and hold it for 12 s.
- Return to the initial position, and repeat to the other side.

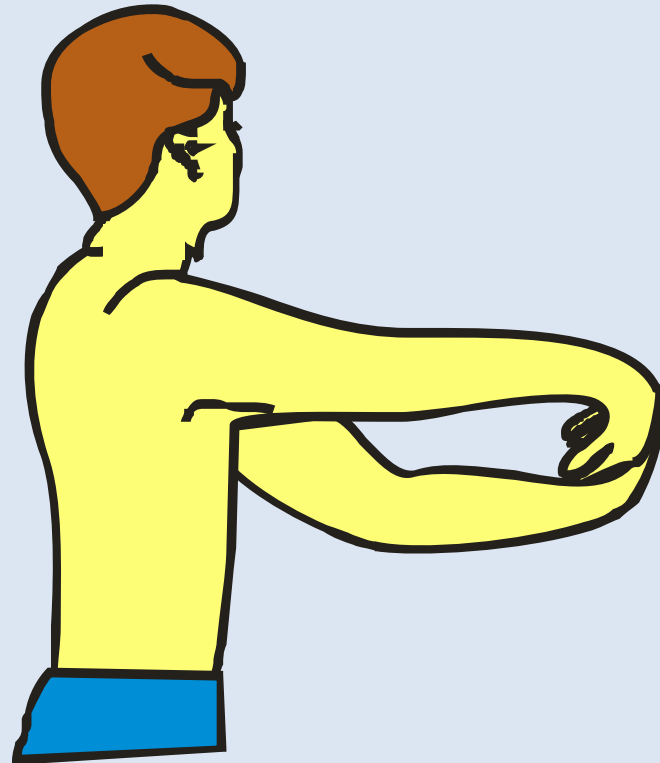


Then, stretching exercises.

Forearm muscle' stretching II

Sitting position

- Place your arms in front of your chest.
- Flex your right palm.
- Try to flex it more with the other hand.
- Feel the stretch in the lateral area of the forearm and hold it for 12 s.
- Return to the initial position, and repeat to the other side.



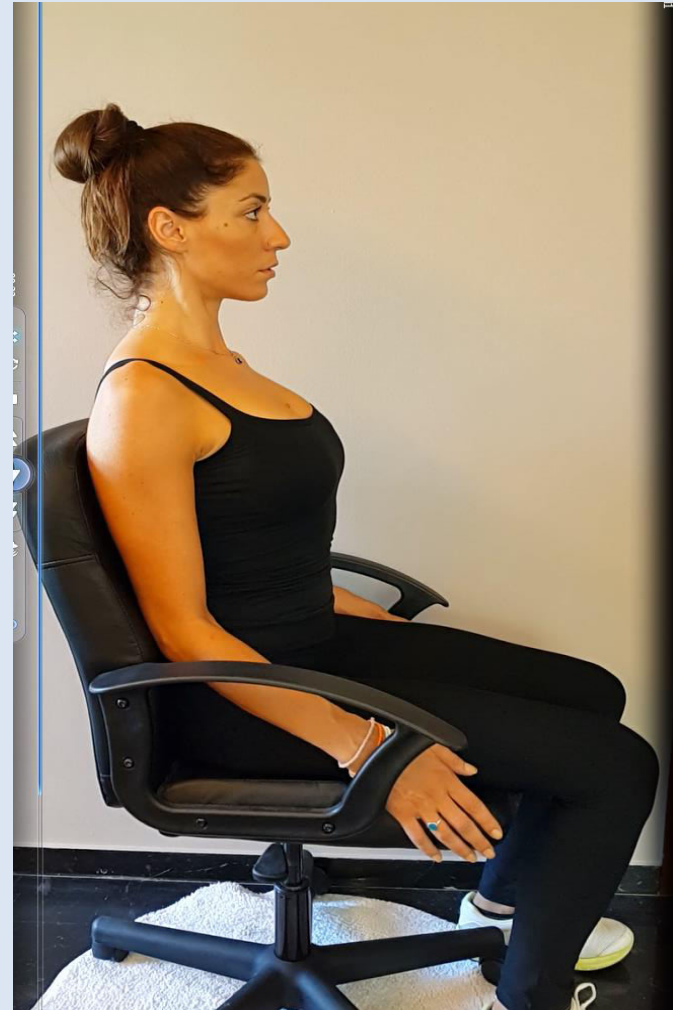


Then, stretching exercises.

Thoracic muscle stretching.

Sitting position

- Keep your scapulas together while your chest is coming forward.
- Feel the stretch in the front area of the chest and hold it for 12 s.
- Return to the initial position, and repeat.

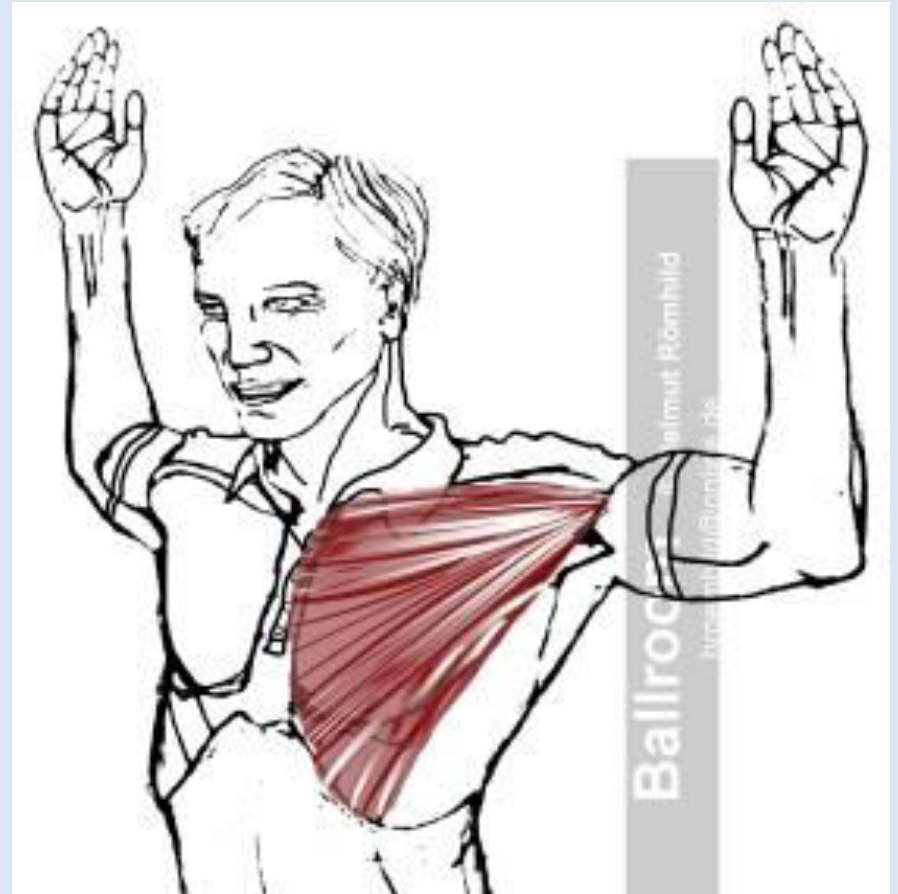


Then, stretching exercises.

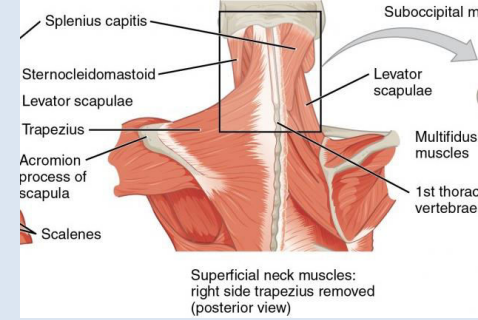
Thoracic muscle stretching I.

Sitting position

- Rotate your torso while your low back is still on the chair.
- Keep your upper back in upright position (scapulas close) when is rotating.
- Feel the stretch in the lateral area of the torso and hold it for 12 s.
- Return to the initial position, and repeat to the other side.



Then, stretching exercises.



Upper back muscle stretching I

Sitting position

- Place your arms in front of your chest and hold your fingers together.
- Then turn your arms inwardly and try to push away while your scapulas are stocked on the chair.
- Feel the stretch in the back area of the arm and hold it for 12 s.
- Return to the initial position, and repeat to the other side.



Then, stretching exercises.

Upper back muscle stretching II

Sitting position

- Place your arms in front of your chest and hold your fingers together.
- Then turn your arms inwardly and try to push away while your scapulas are stocked on the chair.
- Then elevate your hands over your head as far as you can and hold it for 12 s.
- Feel the stretch in the back area of the torso and arms.
- Return to the initial position, and repeat to the other side.



Then, stretching exercises.

Upper back muscle stretching

Sitting position

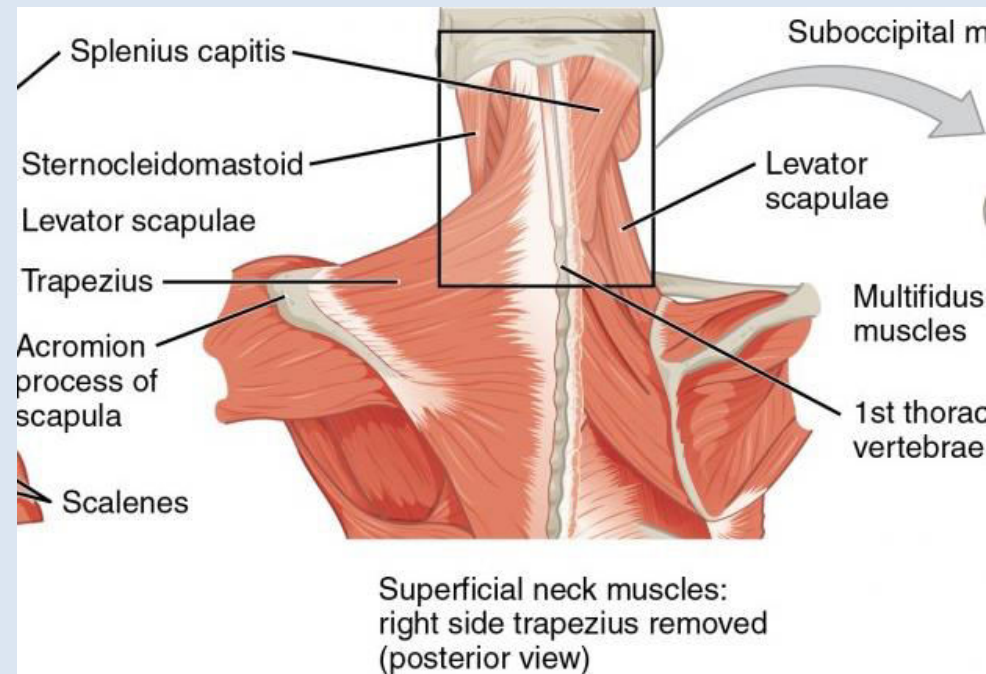
- Place the forearm over your desk and keep it still.
- Then bend your torso laterally with the other arm-hand over your head.
- Feel the stretch in the lateral area of the torso.
- Hold it for 12 s.
- Return to the initial position, and repeat to the other side.

Simple strengthening exercises.

Scapulas adduction muscle isometric activation

Sitting position

- Roll the pelvis forward to create a normal lumbar lordosis
- Lift the sternum, so the shoulders fall back into a neutral position, slightly in front of the chair.
- Tuck the chin as if making a double chin and lift the head while maintain the chin tuck.
- Bring your scapulas together (shoulders back) as much as you can.
- Hold it for 12 s.
- Relax and repeat.

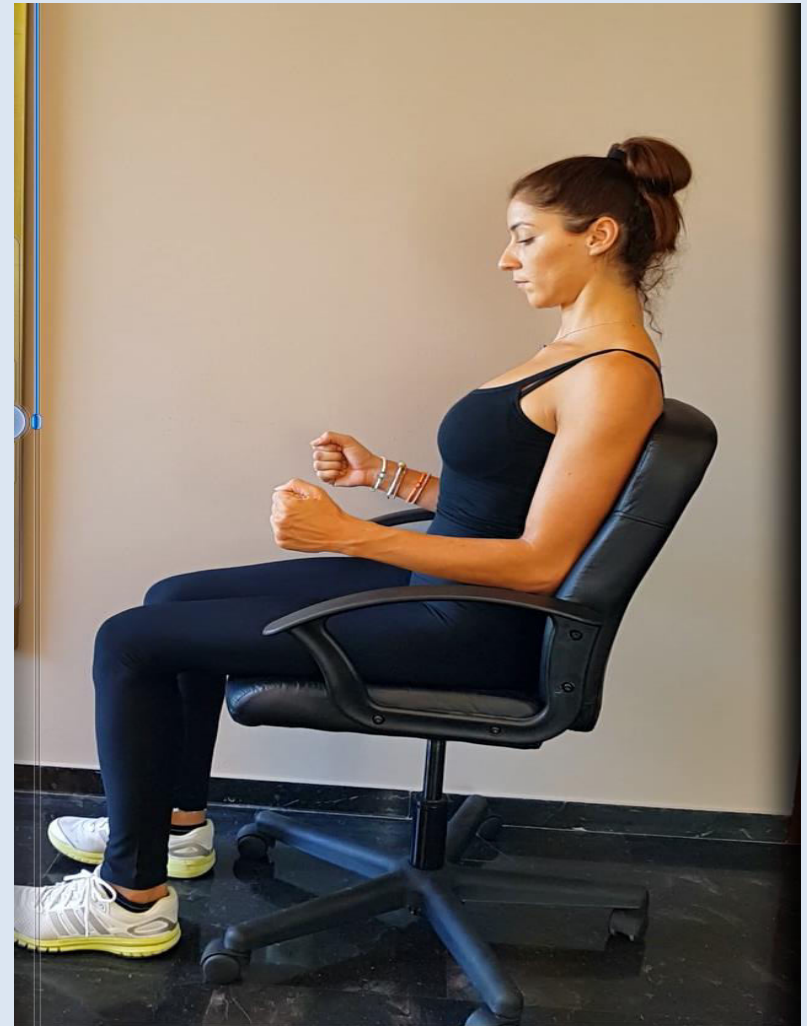


Simple strengthening exercises.

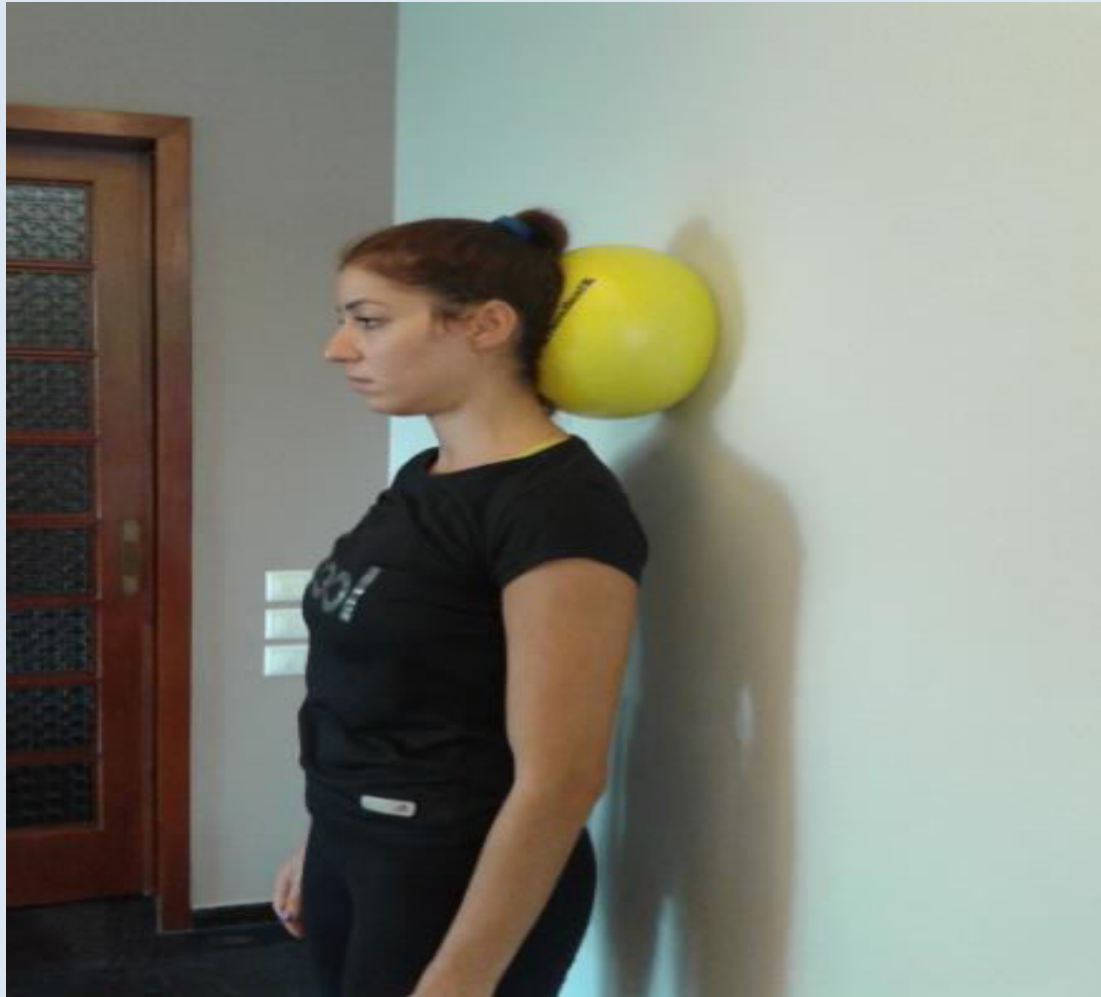
Scapulas adduction muscle isometric activation II

Sitting position

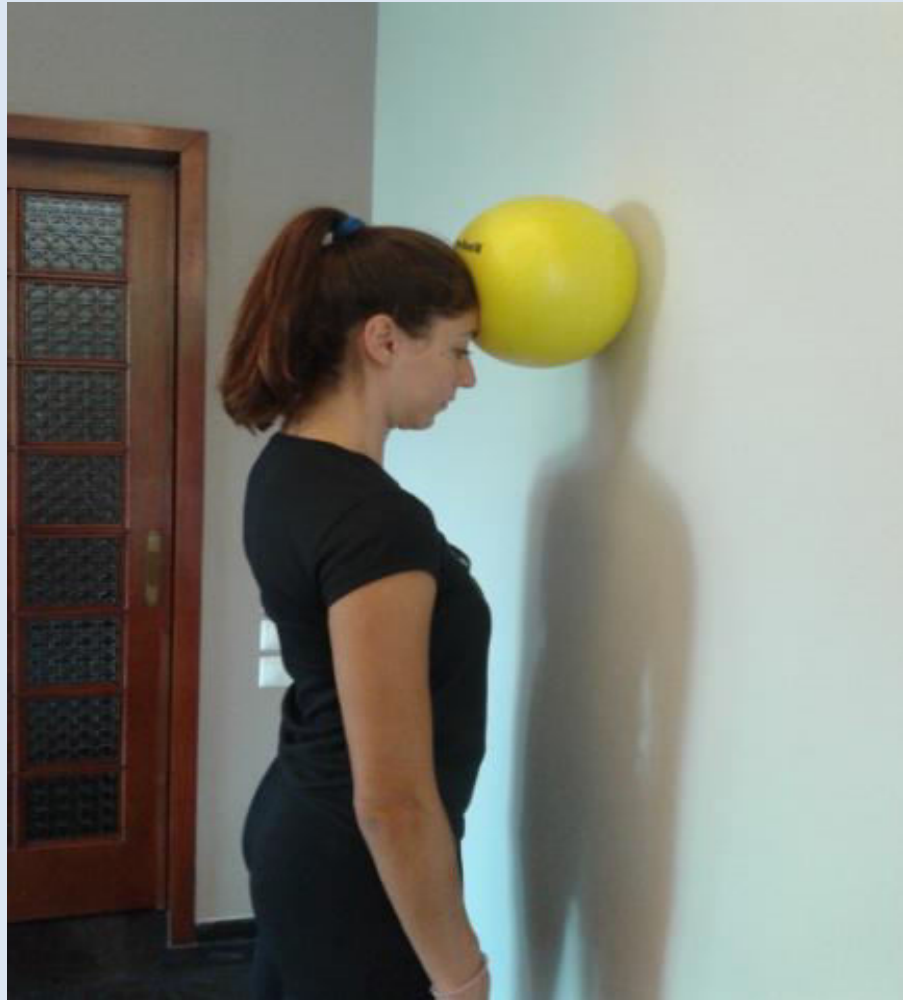
- Roll the pelvis forward to create a normal lumbar lordosis
- Lift the sternum, so the shoulders fall back into a neutral position in contact with the chair.
- Bend your elbows in 90 degree flexion.
- Tuck the chin as if making a double chin and lift the head while maintain the chin tuck.
- Push your shoulders and arms against to the back of the chair..
- Hold it for 12 s.
- Relax and repeat.



Simple strengthening exercises.



Simple strengthening exercises.



Functional exercises.

Thoracic muscle strengthening and stretching exercises combination.....

Sitting position

- Adapt the mentioned sitting position.
- Roll the pelvis forward to create a normal lumbar lordosis
- Lift the sternum, so the shoulders fall back into a neutral position, slightly in front of the chair.
- Tuck the chin as if making a double chin and lift the head while maintain the chin tuck.



Functional exercises.

Thoracic muscle strengthening and stretching exercises combination.

- Then place a rubber band around of your chest and your chairs back.
- Push the band while you bend your torso forward (hip flexion) with your shoulders.
- Hold it for 12 s.
- Slowly relax gradually as the band pulls your shoulders in backward way while you feel the stretching of the thoracic muscles.
- Hold it for 12 s.

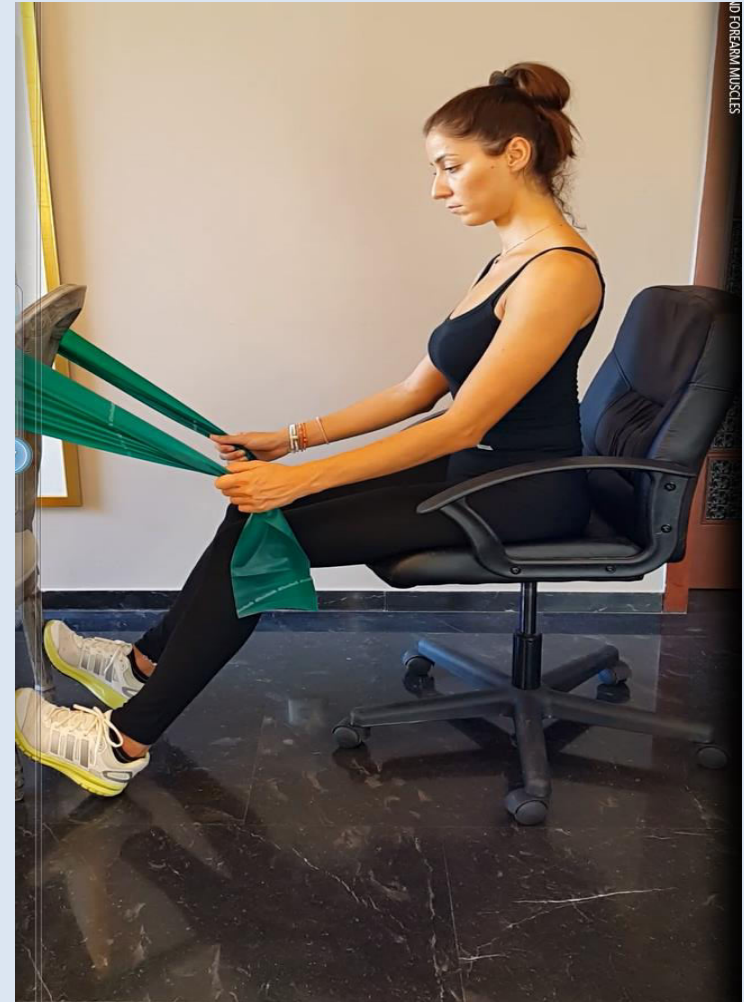


Functional exercises.

Muscle back strengthening and stretching exercises combination.....

Sitting position

- Place another chair in front of your chair.
- Then place a rubber band around of the other chair's back.
- Adapt the mentioned sitting position.
- Roll the pelvis forward to create a normal lumbar lordosis
- Lift the sternum, so the shoulders fall back into a neutral position, slightly in front of the chair.



Functional exercises.

....Muscle back strengthening and stretching exercises combination.

- Tuck the chin as if making a double chin and lift the head while maintain the chin tuck.
- Pull the band with bended elbows and adduct your scapula as far as you can while you rotate your forearms outwards.
- Hold it for 12 s.
- Slowly relax gradually as the band pulls you in forward way while you rotate your forearms inwards.
- Feel the stretch in your upper back and shoulders muscle area.



Functional exercises.

Functional strengthening-stretching exercise- standing position.....

- Perform a standing position and place the rubber band under your feet and hold it with your hand in neutral position.
- Adjust the length of the rubber band with your grips so it will be very tight.
- Adapt a pelvis tilt position in order to eliminate the lumbar extension and hold it.
- While maintaining this position bring the scapulas together (in adduction).



Functional exercises.

....Functional strengthening-stretching exercise- standing position

- Tuck the chin and finally lift the head while maintain the chin tuck, pelvis tilt and shoulder mentioned position.
- Bend slightly your knees.
- Relax your shoulder while the rubber band stretches your upper back.
- Keep up doing this for 12s.
- Relax your grips.
- Repeat.



Functional exercises.

Functional strengthening-stretching exercise.....

- Perform a standing position and place the rubber band under your feet and hold it with your hand in neutral position.
- Adjust the length of the rubber band with your grips so it will be very tight.
- Adapt a pelvis tilt position in order to eliminate the lumbar extension and hold it.
- While maintaining this position bring the scapulas together (in adduction).



Functional exercises.

.....Functional strengthening-stretching exercise

- Tuck the chin and finally lift the head while maintain the chin tuck, pelvis tilt and shoulder mentioned position.
- Bend slightly your knees.
- Relax your shoulder while the rubber band stretches your upper back.
- Bend your head laterally to increase the stretch.
- Hold it for 12s.
- Repeat with other side head bending.
- Hold it for 12s.
- Relax your grips.
- Repeat.



Functional exercises.

Functional strengthening-stretching exercise.....

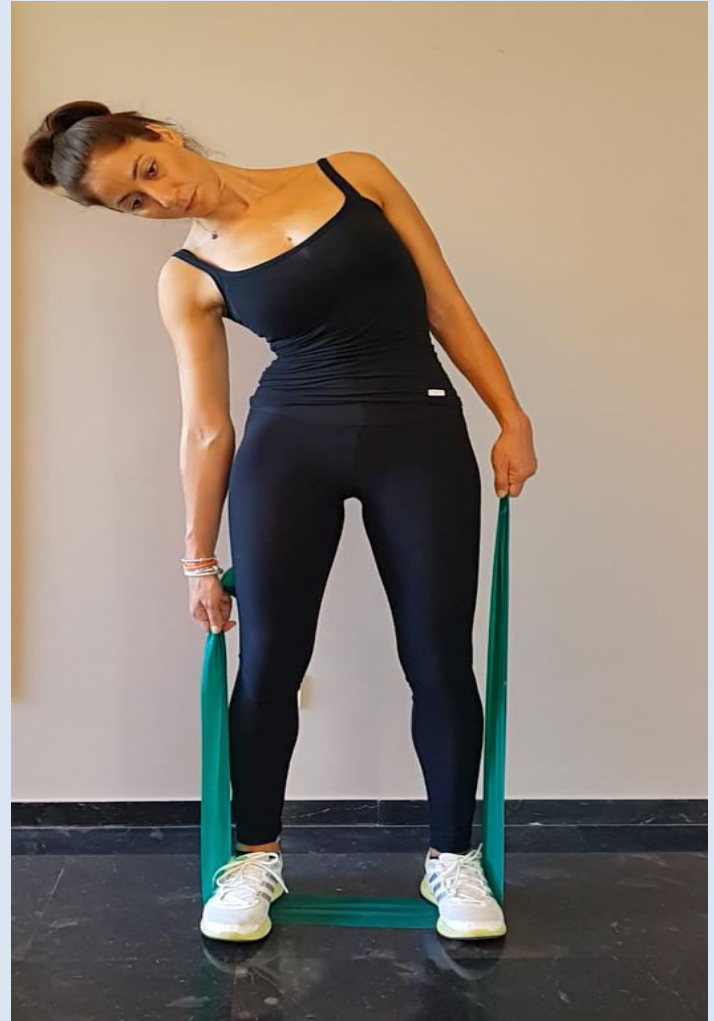
- Perform a standing position and place the rubber band under your feet and hold it with your hand in neutral position.
- Adjust the length of the rubber band with your grips so it will be very tight.
- Adapt a pelvis tilt position in order to eliminate the lumbar extension and hold it.
- While maintaining this position bring the scapulas together (in adduction).
-



Functional exercises.

....Functional strengthening-stretching exercise

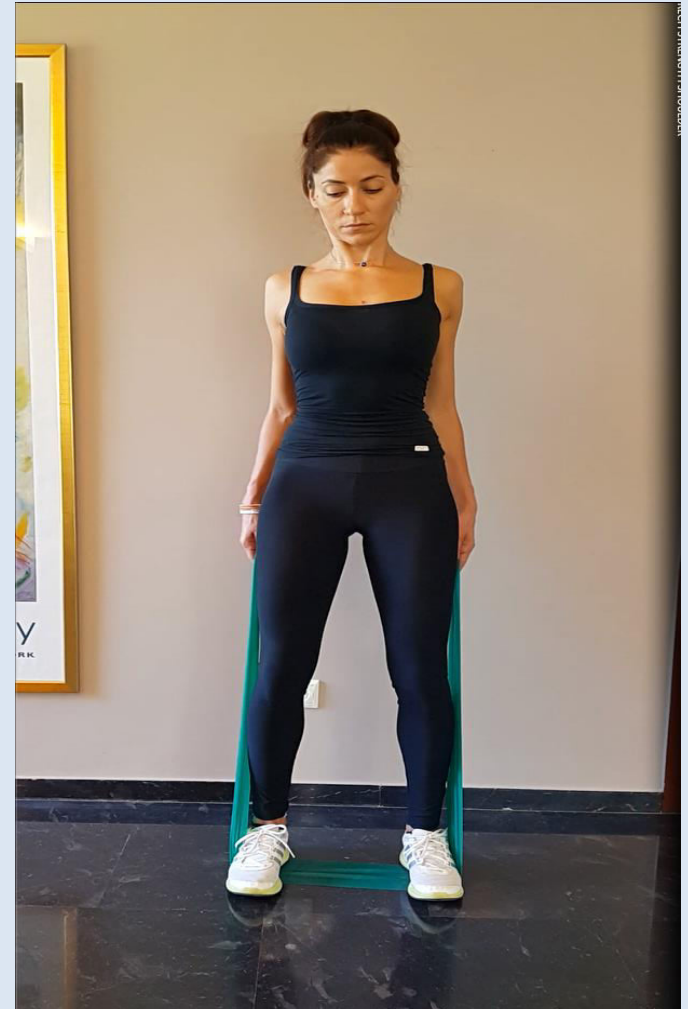
- Tuck the chin and finally lift the head while maintain the chin tuck, pelvis tilt and shoulder mentioned position.
- Bend slightly your knees.
- Bend laterally your torso as far as you can.
- Feel the stretch on the opposite of the bended side.
- Return slowly to initial position.
- Repeat the other side.



Functional exercises.

Functional strengthening-stretching exercise..

- Perform a standing position and place the rubber band under your feet and hold it with your hand in neutral position.
- Adjust the length of the rubber band with your grips so it will be very tight.
- Adapt a pelvis tilt position in order to eliminate the lumbar extension and hold it.
- While maintaining this position bring the scapulas together (in adduction).
- Tuck the chin and finally lift the head while maintain the chin tuck, pelvis tilt and shoulder mentioned position.



Functional exercises.

....Functional strengthening-stretching exercise

- Bend slightly your knees.
- Rotate your shoulders backwards slowly trying to do a circle path.
- Stop when your shoulders are in front of your body line.
- Keep this position and feel the thoracic muscle for 12s.
- The slowly rotate backwards and stop when your shoulders are in back of your body line.
- Keep this position and feel the thoracic muscle stretching for 12s.
- Return slowly to initial position and repeat.



Functional exercises.

Functional strengthening-stretching exercise for triceps and back.....

- Perform a standing position and make a step back wards.
- Place the rubber band under your back foot and hold it with your hand while you placed them over your head and hold it.
- Adjust the length of the rubber band with your grips so it will be tight.
- Perform pelvis tilt position in order to eliminate the lumbar extension and hold it.
- While maintaining this position bring the scapulas together (in adduction).

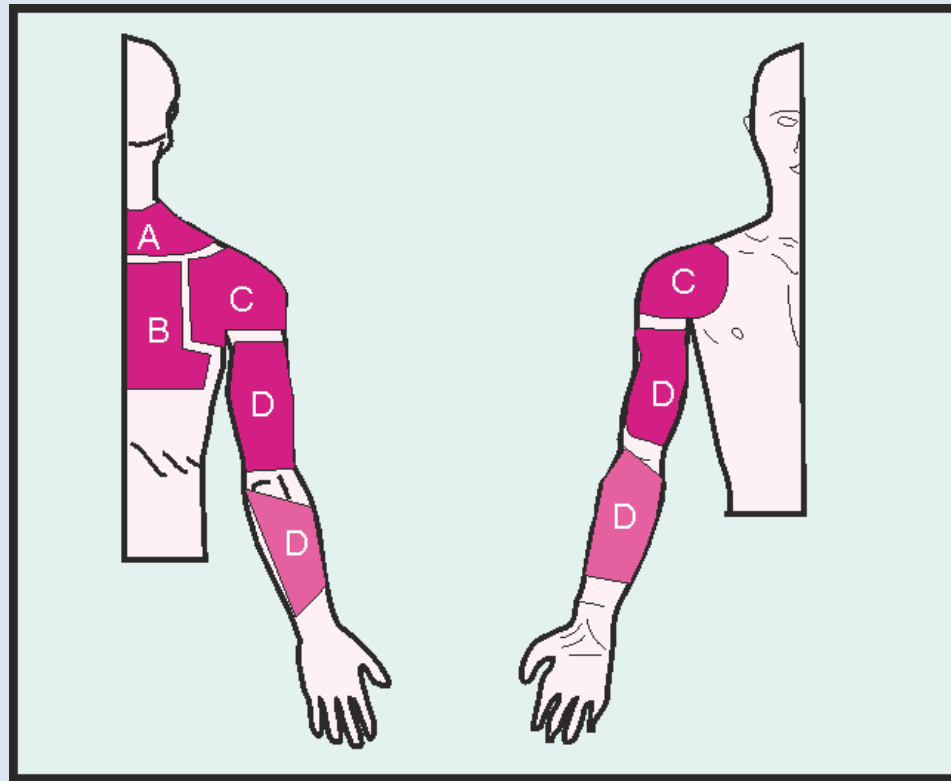


Functional exercises.

.....Functional strengthening-stretching exercise for triceps and back

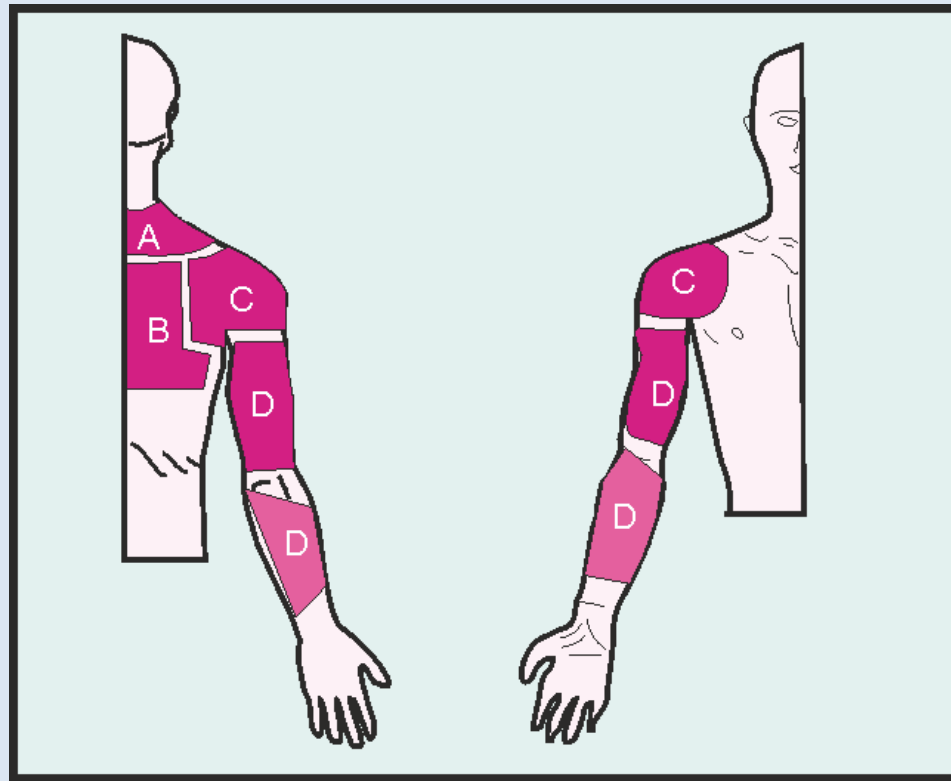
- Tuck the chin and finally lift the head while maintain the chin tuck, pelvis tilt with the head in slightly flexed position.
- Bend slightly both knees.
- Feel the stretch in you chest and shoulders.
- Hold this position for 12s.
- Push the band over your head.
- Keep this position and feel the thoracic muscle for 6s.
- Relax and return slowly to initial position and repeat.





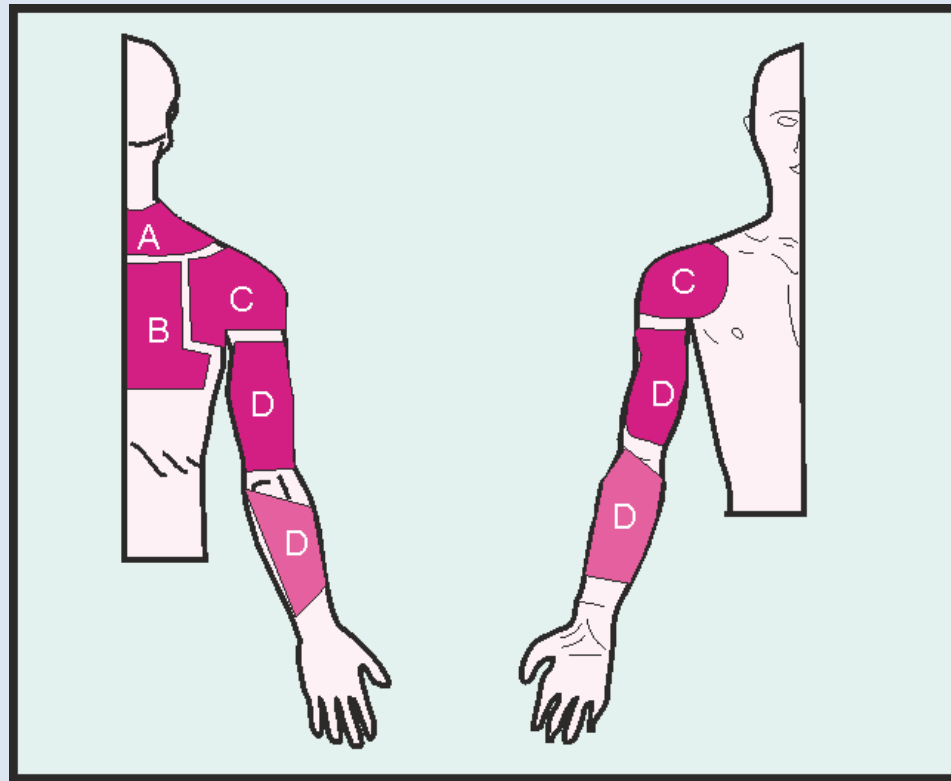
- A GROUP

- STRETCHING MUSCLE EX
- STRENGTHENING MUSCLE EX
- FUNCTIONAL EX



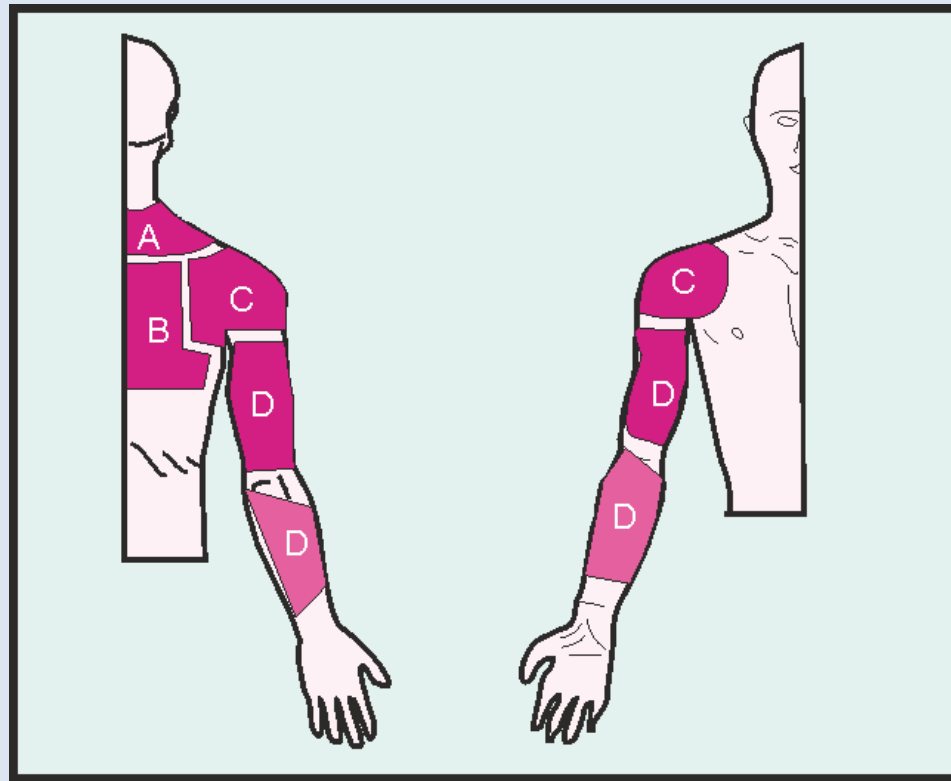
- B GROUP

- STRETCHING MUSCLE EX
- STRENGTHENING MUSCLE EX
- FUNCTIONAL EX



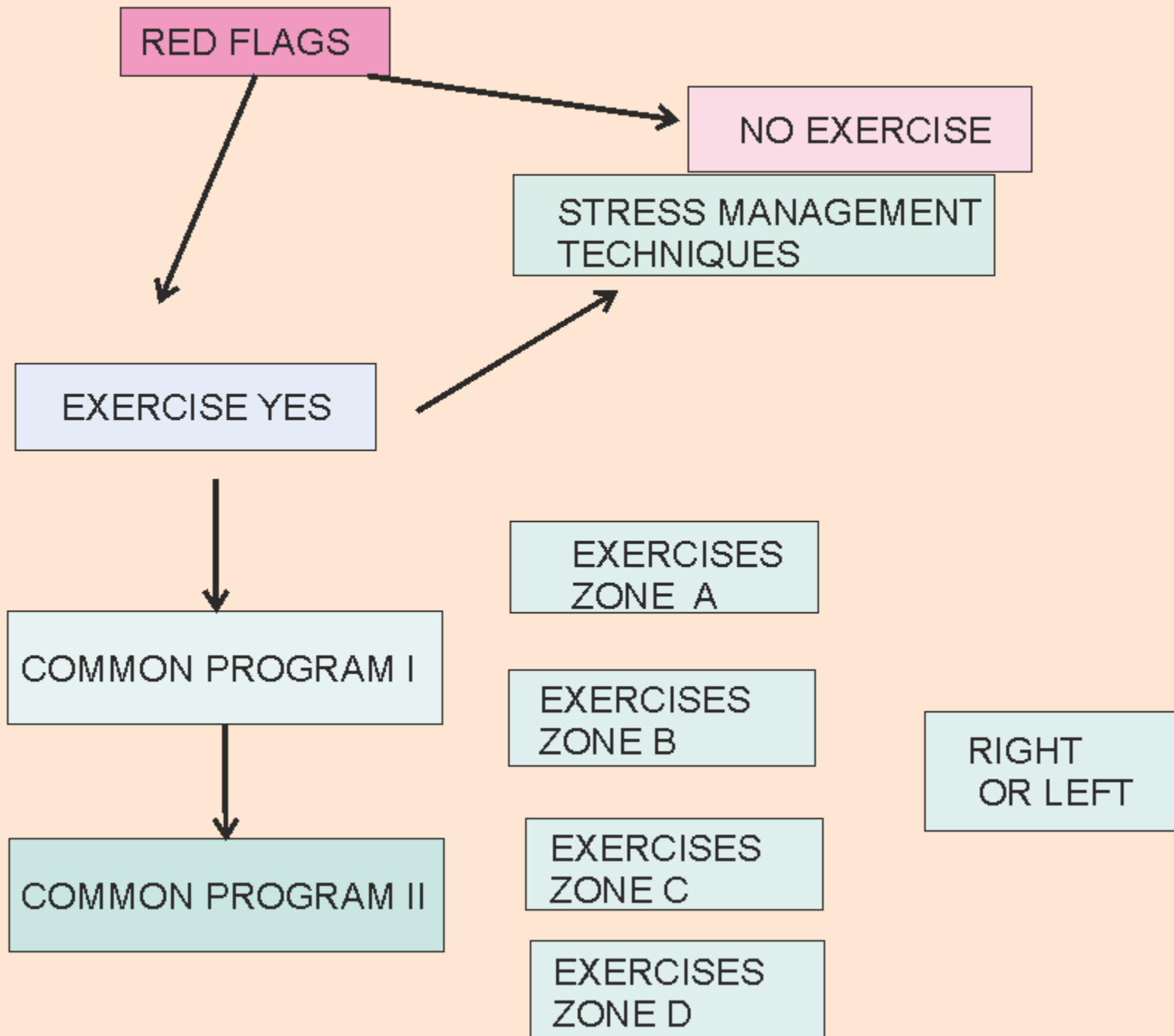
- C GROUP

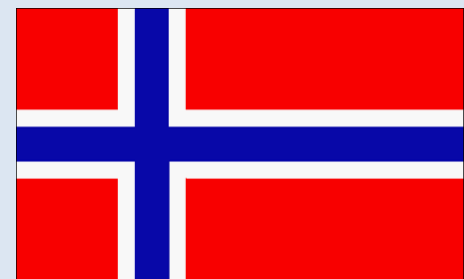
- STRETCHING MUSCLE EX
- STRENGTHENING MUSCLE EX
- FUNCTIONAL EX



- D GROUP

- STRETCHING MUSCLE EX
- STRENGTHENING MUSCLE EX
- FUNCTIONAL EX





Thank you !!!!

