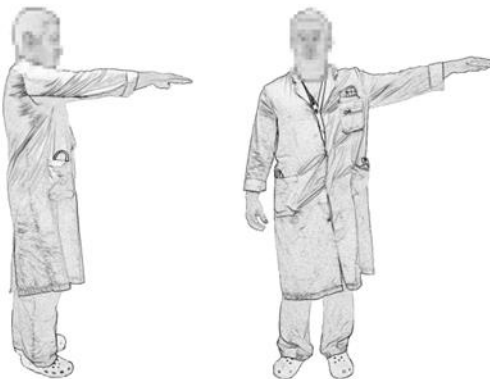


## Exercises for patients undergoing breast reconstruction with the latissimus dorsi muscle flap.

**In the first 15 days after surgery, (unless advised otherwise by your surgeon):**

- Do not exceed 90 ° of abduction and flexion; therefore do not raise your hand above shoulder height.

Do not exceed these heights.



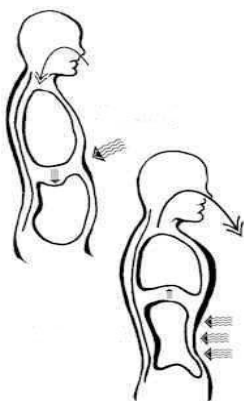
- Avoid excessive and/or repeated effort on the operated side
- Carry out the following exercises

**In a supine position:**

**Diaphragmatic breathing:** with knees bent, keeping your feet flat on the floor, keep your hands on your lap or by your sides. Inhale by inflating the belly, then exhale slowly.

Hold for five minutes

Try to relax your shoulders and your arms. You may use a cushion to support your head.



**Open and relax your arms up to 90 °:** with your knees bent, flex your arm bringing your hand on your shoulder, then move it outwards keeping your elbow in contact with the mattress until you feel a tension at the underarm or chest level. Hold this position while relaxing the arm and shoulder muscles, carrying out the breathing technique for 30 seconds. Then, if the tension has decreased, continue this opening movement until you again feel the sensation of tension. Maintain this for another 30 seconds. Return to the starting position.  
 Be careful not to exceed 90 ° when opening the arm.

*Repeat the exercise 5 times.*



**Arm rotations:** with knees bent, open both arms to 90 °, with your elbows flexed. Bring the palm of one hand towards the supporting surface by performing an internal rotation, while with the opposite limb, you perform an external rotation by using the back of your hand to touch the supporting surface near your head. Make sure you keep your shoulders supported.

*Alternate this movement 10 times*



**Shoulder rotation:** Sit on a chair, keeping your back straight and your feet flat on the floor. Rotate your shoulders as widely as possible clockwise and counterclockwise.

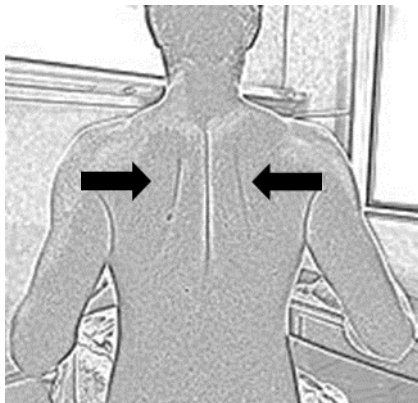
*Repeat 10 rotations in one direction and 10 in the other direction.*



*In an upright position*

**Bring your shoulder blades closer:** slightly spread your feet to improve stability. Flex your elbows to 90 ° Try to bring the shoulder blades closer together, hold the position for 10 seconds.

*Repeat the exercise 10 times.*





**1 month after surgery** (unless advised otherwise by your surgeon)

Carry out the following exercises (with the assistance of a physiotherapist)

In a supine position:

**Lying down on the bed with bent knees**, bend your arm and touch your shoulder with your hand. Then extend your arm, keeping your elbow in contact with the bed until you feel a tension in the area of the chest or underarm region. Hold this outstretched position, relaxing the muscles of your arm and shoulder, using the breathing technique for 30 seconds. Then, if the tension is reduced, continue the opening movement until you feel tension once more. Hold for a further 30 seconds. Return to the starting position.

*Repeat 5 times.*



From a sitting position

**Rotation of the arms:** Sit in a chair keeping your back straight and your feet resting on the floor. Open your arms to 90 degrees, keeping your elbows flexed and the palms of your hands both facing downwards. Hold the opening position at 90 ° Perform an internal rotation with one limb, bringing the hand downwards, while the other performs an external rotation bringing the hand upwards. Make sure you keep your shoulders still.

*Alternate the movement by repeating it 10 times*





In an upright position

**Stretching your arms frontally along the wall:** Stand facing the wall at a distance of one hand width. Place both hands against the wall at shoulder height and raise your fingers up, in parallel, along the wall. Go as high as you can, approaching the wall closely; stop for a few seconds and return to the starting position. Make sure you don't arch your back

*Repeat this exercise 5 times.*



**Sideways arm extension:** You will need a piece of adhesive tape for this exercise. Standing with the unoperated hip facing the wall, about three hand widths from it, place your hand on the wall, extending your arm and approaching the wall as closely as you can. Use a piece of tape to mark the height you reach with your fingers. Now perform the exercise in the same way with your operated arm, trying to get closer and closer to the mark on the wall; then move away from the wall and slide your hand to shoulder height.

*Repeat the exercise 5 times*

Make sure that while raising your arm, you do not lean on the opposite side





## Two months after surgery

### In a sitting position

**Stretching, while leaning towards the side:** Sit on a chair keeping your back straight and your feet flat on the ground. Cross your hands and place them behind your head. Exhale while leaning your trunk towards one side, keeping your gaze facing forward, with your elbows wide open and your pelvis fixed. Inhale while returning to the neutral position. Now do the same on the opposite side.

*Repeat 10 times.*



**Trunk Rotation:** Sit in a chair keeping your back straight and your feet flat on the ground. Cross your hands and keep your arms straight. As you exhale, rotate the trunk to one side with your head well aligned with your chest. Return to the starting position while inhaling. Alternate the rotation side.

*Repeat 10 times.*

Make sure you keep the pelvis fixed during rotation.





### Muscle strengthening exercises with elastic:

Use a rubber band which offers a resistance agreed upon with the physiotherapist. Start with 3 sets of 5 reps until you reach 3 sets of 10 reps.

In an upright position, slightly spread your feet, in order to have a wider base and therefore greater stability. Position the elastic at approximately elbow height. The exercises are performed with both arms.

It is useful to position a slightly thick object, such as a towel or a small pillow, between the elbow and the chest.

**Internal rotation exercise:** Stand with your side facing the elastic, and with the hand of that same side, take one end of the elastic (make sure that the elastic in the starting position is under slight tension). Pull the end of the elastic towards the belly, while keeping your elbow close against your side.



**External rotation exercise:** Stand with your side facing the elastic, and with the hand of the opposite side take one end of the elastic (make sure that the elastic in the starting position is under slight tension). Pull the end of the elastic outwards from the belly, while keeping your elbow close against your side.



Attach the elastic at a point in front of you at about the height of the pelvis, take the ends of the elastic with your hands (make sure that the elastic in the starting position is under slight tension) and perform the exercises listed below. Your position should be seated, back straight, with your feet well supported on the floor.



**Rowing exercises:**

**1. Tight grip:** Pull the ends of the elastic to your chest by flexing your elbows.

**2. Medium grip:** Pull the ends of the elastic to your chest, slightly opening your arms.

**3. Wide grip:** Bring the ends of the elastic to shoulder height, keeping the arms spread at about 90 °





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