

## SUPPLEMENTARY MATERIAL

Functionality before and after physiotherapy in post-COVID-19 patients  
<https://doi.org/10.25176/RFMH.v23i3.5532>

López-Siete M et al.

## RESPIRATORY PHYSICAL AND OCCUPATIONAL REHABILITATION

### PROGRAM:

#### Resting Position.

Type A: Using a 45° inclined wedge, both legs are flexed; Type B: In lateral decubitus fetal position; Type C: In prone decubitus. Each position is maintained as long as the patient can tolerate every 2 hours daily.



#### Respiratory Exercises

In a 45° inclined supine position, place both hands on the abdomen, inhale by inflating the abdomen and hold for 3 seconds, then exhale with pursed lips, later moving hands over the chest.



In lateral decubitus on a 45° wedge, place one hand on the abdomen, inhale through the nose for 3 seconds and exhale with pursed lips.

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In a seated position, place hands behind the head, adduct arms while inhaling and abduct during exhaling for 3 seconds. Perform 3 repetitions with 10 sets of 3 seconds.



In a seated position, perform inhalation and exhalation with hands over the rib cage. Perform 3 repetitions with 10 sets of 3 seconds.



### Occupational Therapy Routine

All exercises are performed with 5 repetitions in 10 sets.

Sensitivity exercise: Rub different textures like a towel over the skin in an ascending direction.



Hand strengthening exercise: Apply pressure by clenching both hands on a rolled-up towel, alternating vertically and horizontally.



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Arm strengthening: In a seated position, the patient holds a light ball and performs flexion-extension.



### Exercises in Seated Position

All exercises are performed 3 repetitions with 10 sets on each side.

Sitting on the floor leaning against the wall, join the soles of the feet and lower the knees towards the floor, abduct and adduct the right arm over the shoulder; the same with the left arm. From the previous position, the patient places the palms of the hands and elbows on the wall, bringing the torso forward.



### Kneeling Posture

All exercises are performed 3 repetitions with 10 sets on each side.

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Kneel with back to the wall, hands on the waist, and legs in abduction. Inhale and exhale while moving the head toward the wall.



The patient kneels and performs left leg extension so that the heel touches the buttock.



### Supine Position Posture

All exercises are performed 3 repetitions with 10 sets on each side.

The patient leans against the wall with legs in flexion forming a 90° angle, performs arm abduction, then flexes the right knee towards the chest while the left leg remains flexed against the wall.



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The patient places buttocks against the wall, bends the knees, places the soles of the feet on the wall, and arms over the knees without lifting the head, then flexes the head while trying to touch the wall with hands.



Place buttocks against the wall with legs in flexion, perform right leg abduction reaching maximum opening and hold for 10 seconds, perform adduction and alternate with the left leg, after both legs



## Foot Posture

All exercises are performed 3 repetitions with 10 series on each side.

In a standing position leaning against the wall and bending the knees, inhale and flex the arms, exhale and perform wall extension, then flex the trunk touching the floor with the palms of the feet, and finish standing in front of the wall flexing the arms forming a right angle



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Continue leaning against the wall, use two equal boxes and place hands on the boxes, then perform right leg abduction avoiding hip rotation.



### Warm-up and Mobility

In a seated position, perform head flexion-extension and rotation on each side, then of the neck. Perform 3 repetitions with 10 series on each side.



### In Standing Position

Perform right leg abduction and adduction, flexion, and dorsiflexion of the right foot returning to the initial position. Perform 3 repetitions with 8 series on each side.



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### Stretching Exercises

All exercises are performed 1 repetition with 5 series.

In a seated position, place hands behind the head with fingers interlocked, perform elbow abduction and adduction, continue by extending the upper limbs and making 5 circles forward and backward



The patient in a standing position holds a bar located behind him performing upper limb extension, letting the body fall forward.



On a bed, the patient flexes the right knee placing the sole of the foot on the floor. The left leg remains in flexion on the bed. Then, flex the hip lowering the trunk towards the right leg.



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In a seated position, the patient performs flexion, extension, and rotation of the ankle and vice versa, later in a standing position, the patient stands on a step and rests the mid-foot on the step letting the body fall



### Strengthening with Resistance Bands (Thera-Band)

All exercises are performed 3 repetitions with 3 sets..

In a standing position, perform upper limb extension by flexing the elbow to shoulder height, avoiding trunk rotation. Then, flex the upper limb to form a 45° angle with the bands, followed by abduction of the upper limb using the bands.



Continue performing flexion and extension of the right arm using the bands and vice versa. Then, place the bands under the feet and hold them there, finally, pass the band around the pelvis performing flexion of the right leg alternating with the left.





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In supine position, the patient wraps the band around the inner part of the legs and extends the leg. Later, in a lateral decubitus position, wrap the band around the lower part of the legs and abduct with the right leg and viceversa.



### Strengthening with Medicine Ball

All exercises are performed 3 repetitions with 3 sets.

In a standing position, the patient holds the ball and flexes the elbows bringing the ball behind the head, then, with the ball in hands, takes 3 steps and throws the ball upwards with arm flexion.



### Strengthening with Dumbbells

All exercises are performed 3 repetitions with 10 sets.

In a standing position, with bent arms, hold a dumbbell in each hand, then, abduct the arms while flexing both elbows, later lift the shoulders. Finally, perform arm abduction and flexion.



### Strengthening with Ankle Weights

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All exercises are performed 1 repetition with 10 series.

In a seated position, using a ½ kg or 1 kg ankle weight, perform knee flexion and extension. Then, in lateral decubitus, flex the left elbow to support the head with the left hand, flex the right knee and perform abduction. Finally, in a standing position, perform 5 outward circles and 5 inward circles.



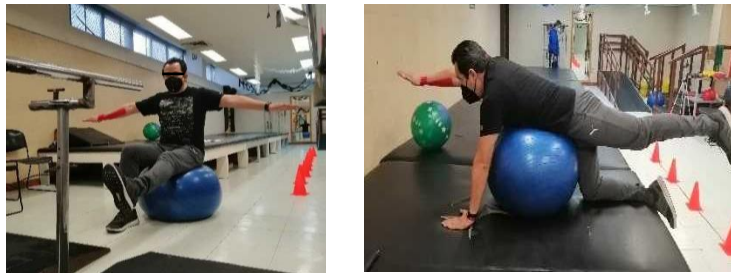
## Physical Conditioning

Stationary Bike: use for 5 to 20 minutes with and without resistance.

Gentle jogging and walking: from 3 to 6 minutes with 30 seconds rest between each minute.

All exercises are performed 2 repetitions with 10 series.

The patient sits on a Bobath ball, abducts the arms at shoulder level, and flexes the right leg. Then, in a quadruped position, flex the right arm and extend the left leg.



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In a standing position, the patient bounces the ball against the wall while jogging for 1 minute, and finally, in prone position, the patient places hands at shoulder level performing flexion and raising the torso.



### Exercise with Balloon and Hoop

All exercises are performed 3 repetitions with 10 series.

The patient walks while tossing a balloon without dropping it for 30 seconds, then flexes the arms holding a hoop with the hands and flexes the right leg. Finally, holds a hoop with the right hand and abducts the left leg and viceversa.



### Tandem Walking

The patient walks in a straight line for 3 minutes with 30 seconds rest between each minute then in zigzag.

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### Static and Dynamic Balance

All exercises are performed 1 repetition with 10 series.

In a standing position, the patient keeps the feet hip-width apart and performs 3 breaths, then places one foot in front of the other keeping them separated at hip width, performs 3 breaths, finally in a tandem position, the patient closes the eyes and breathes 3 times alternating feet while on tiptoes.



All exercises are performed for 3 minutes with 30 seconds rest between each minute.

The patient walks on tiptoes and heels, then in tandem position, stands on tiptoes and heels and walks. Then, with a book on the head held with both hands, walks within a designated space then walks on tiptoes and finally on heels.

Later, holds the book with one hand while walking in a designated space on tiptoes and then on heels.

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In a standing position, the patient holds a book in front with an object on top and walks on tiptoes and then on heels.

