

Table.2. Breaking Sitting Behavior through Exercises during COVID-19 lockdown

Description of Therapeutic Exercises

Note:

- *These exercises are meant to be adjuvant to the breaking prolonged sitting during the lockdown. If uncomfortable at any point of the trial period, the participants should be requested to stop the exercise and consult exercise specialist/ physiotherapist for medical assistance.*
- *The intensity and frequency of breaks are modified from the global recommendations (2 minutes every 30 minutes of sitting)¹ and the below exercises (one minute of the body supported exercise and one minute of stretching exercise) are scheduled to fit and fill the 2 minutes break*
- *If the person has already underlying chronic diseases (cardiovascular, arthritis), he/she must consult with primary care physician before participating in the following exercises*

Body support Exercises

1. Squat

Aim: Activation of lower limb muscles – anterior & medial chain

Instructions: Stand firmly with both feet together. Lower your back towards the ground into a *squat*. (Fig 1). Return to the starting position.

Dosage:

- Repeat the movement 10. Rest for 1 second between repetitions.

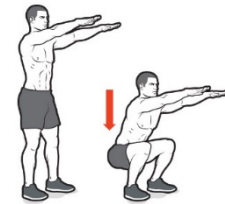


Fig.1. Squat

2. Knee raise

Aim: Increase hip and knee flexor (posterior sling) activation

Instructions: Stand firmly with both feet together and one hand on the chair for support (Fig.2). Put weight into your left leg and lift the right leg in the air as to bring knee to the chest. Then straighten the *leg* to complete one repetition (Fig 2.). Return to the starting position.

Dosage:

- Repeat the movement with right knee raise seven times with a 2-second hold at the peak of the movement. Rest for 1 second between repetitions.

Now switch over to the left knee raise seven times with a 2-second hold at the peak of the movement. Rest for 1 second between repetitions.



Fig.2. Knee raise

3. Lunge

Aim: Increase hip and knee extensor (anterior) activation

Instructions: Stand firmly with left foot ahead of the right foot in line with each other (feet in a tandem stance) (Fig 3). Try to lower the body weight by bending knees with the right knee almost parallel to the ground. (Fig.3). Then straighten the *leg* to complete one repetition. Return to the starting position.

Dosage:

- Repeat the movement with the right knee forward seven times with a 2-second hold at the peak of the movement. Rest for 1 second between repetitions.

Now switch over to the left knee forward seven times with a 2-second hold at the peak of the movement. Rest for 1 second between repetitions.

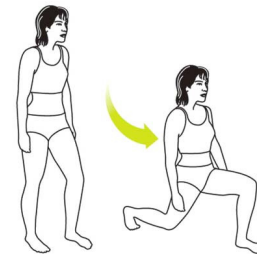


Fig.3. Lunge

4. Inclined push-ups:

Aim: to increase chest flexors and elbow extensors activation (cross sling)

Instructions: Lean against your desk with both the hands placed firmly on the desk with the shoulder-width apart. The feet shall be together at the farthest point from the body firmly on the floor (Fig 4). Now slowly bend both the elbows and lower the head towards the desk till you feel the maximum weight on your hands (Fig 4). Hold it for 2 seconds. Resume the starting position. Do it for ten repetitions with 2 seconds hold at the peak movement. Repeat the movement for the next set with ten more repetitions. Make a comfortable one-second rest between the repetitions.

Dosage:

- Repeat the inclined push-ups seven times with a 2-second hold at the peak of the movement. Rest for 5 seconds after the 1st set
 - Repeat the inclined push-ups 7 seconds for the 2nd set.
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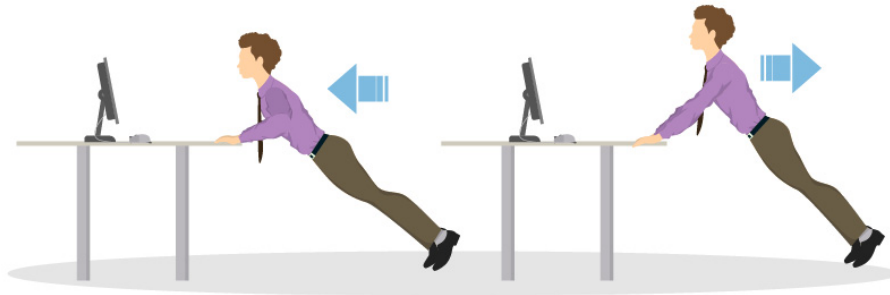


Fig.4. Inclined push-up

5. Pelvic bridges

Aim: to increase hip extension (Posterior sling)

Instructions: Lie down on your back facing ceiling. With substantial weight on foot, try to raise the hips away from the floor. Maintain the hip raise for 2-3 seconds. Lower down (Fig.5). Then repeat the hip raises for next 5-6 times

Dosage:

- Repeat the movement with right knee raise 5-6 times with a 2-second hold at the peak of the movement. Rest for 1 second between repetitions.

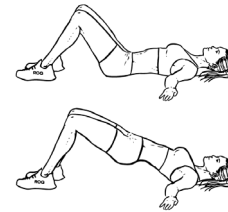


Fig.5. Pelvic bridge

6. Chair Dips:

Aim: to increase shoulder retractors and elbow extensors (Posterior sling)

Instructions: Stand with your back against the desk with both palms supporting on the desk with shoulder-width apart and both feet together farthest from the desk (Fig.6). Slowly bend your elbows and lower your body towards the ground with maximum bodyweight on the hands. Hold the position for 2 seconds. Then straighten the *elbows* to complete one repetition. Return to the starting position.

Dosage:

Repeat the movement ten times with a 2-second hold at the peak of the movement. Rest for 1 second between repetitions.

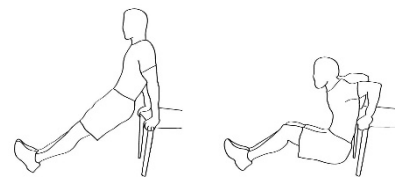


Fig.6. Chair Dip – Ending position

Stretching Exercises

1. Hamstring stretch:

Aim: To increase the flexibility of posterior thigh muscles (Posterior sling)

Instructions: Stand firmly with both feet together 2 feet away from a chair/ block. Place your right heel on the bench and flex your toe toward your shin. Reach your hands toward your right foot, slowly (Fig.1). Hold this position for 15 seconds before repeating the process on the left foot. Complete two sets on each foot. Return to the starting position

Dosage:

- Repeat the right hamstrings two times with a 14-second hold at the peak of the movement. Rest for 1 second between repetitions.
- Repeat with left thigh stretch times as mentioned above

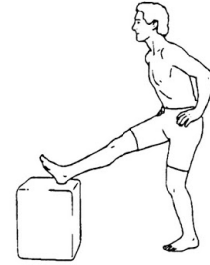


Fig.1. Hamstring stretch

2. Quadriceps stretch:

Aim: To increase the flexibility of front thigh muscles (Anterior sling)

Instructions: Stand firmly with both feet together 2 feet away from a chair and one hand on the chair for support. Bend your right leg at the knee to raise your foot toward your bottom. Try to get your heel as close to your buttocks as you comfortably can. Grab your ankle with your right hand, hold for 10 seconds, and then lower your foot back to the ground. (Fig.2). Complete three sets on each leg. Return to the starting position

Dosage:

- Start with right quadriceps stretch two times with a 10-second hold at the peak of the movement. Rest for 1 second between repetitions.
- Repeat with left quadriceps stretch with the intensity as specified as above



Fig.2. Quadriceps stretch

3. Chest stretch:

Aim: To increase the flexibility of front chest muscles (Anterior sling)

Instructions: Stand firmly with both feet together near a wall. Place both the hands perpendicular with elbows bent at 90° in the wall. Slowly move your body front till you feel stretch in the chest region (Fig.3). Hold the stretch for 15 seconds and complete four sets. Return to the starting position

Dosage:

Repeat the movement four times with a 15-second hold at the peak of the movement. Rest for 1 second between repetitions.



Fig.3. Chest stretch

4. Side stretch:

Aim: To increase the flexibility of the side chest and shoulder muscles (Lateral sling)

Instructions: Stand firmly with both feet together closer to the pillar in your home. Raise the left shoulder above the head holding the pillar and feel the stretch on left chest and shoulder (Fig.4). Hold the stretch for 15 seconds and complete two sets. Return to the starting position. Repeat with the right-side stretch.

Dosage:

Repeat the left side stretch two times with a 15-second hold at the peak of the movement. Rest for 1 second between repetitions.

Now switch over to right side stretch with similar frequency as mentioned above.



Fig.4. side chest stretch

5. Triceps stretch:

Aim: To increase the flexibility of triceps muscles (posterior sling)

Instructions: Stand firmly with both feet together closer to the desk. (Fig 5a). Bend the left elbow as to scratch the back. Place your right hand on the left elbow and reinforce the stretch by reinforcing the elbow flexing to more backwards side as shown. (Fig.3b). Hold the stretch for 5 seconds and complete six sets (Fig 5b). Return to the starting position. Repeat with the right triceps stretch after 5 seconds rest.

Dosage:

- Repeat the left side stretch six times with a 5-second hold at the peak of the movement. Rest for 1 second between repetitions.
- Now switch over to right side stretch with similar frequency as mentioned above.



Fig.5. Triceps stretch

6. Forearm stretch:

Aim: To increase the flexibility of forearm and finger muscles (Anterior sling)

Instructions: Stand firmly with both feet together closer to the desk. Raise right shoulder forward with straight elbows and palm facing forwards (Fig.6). Place the left hand on the stretched right fingers and reinforce the stretch (Fig 6). Hold the stretch for 5 seconds and complete six sets. Return to the starting position. Repeat with the left forearm and hand stretched.

Dosage:

- Repeat the right side stretch six times with a 5-second hold at the peak of the movement. Rest for 1 second between repetitions.
- Now switch over to left side stretch with similar frequency as mentioned above.

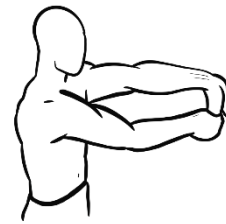


Fig.6. Forearm stretch
