



# Conditioning Exercises

Excerpts from

## Simply COPD

**National Respiratory Training Center**  
[www.nrtc-usa.org](http://www.nrtc-usa.org)



## Exercise reconditioning

### Need for exercise reconditioning

- Fear and distress induced by breathlessness often result in COPD patients avoiding activity, which leads to weakness of non-respiratory muscles, ie the legs.
- Aim is to retrain these muscles, improve overall fitness and improve efficiency of oxygen use.
- Regular exercise, under supervision, reinforces message that dyspnea itself is not harmful, and may blunt sensation of breathlessness.

### Patient selection

- All patients benefit from exercise programs, improving in exercise tolerance and symptoms of dyspnea and fatigue.\*
- Severity of COPD is not a factor in patient selection, though the nature of the exercise program should be tailored to patient's abilities.

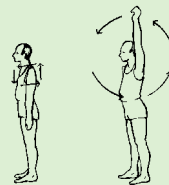
### Exercise program

- Refer patient to a pulmonary rehabilitation program, or seek help of an interested physical therapist or exercise physiologist.
- If these are not possible, advise on simple exercises that can be built up slowly over 3-4 weeks with office visit review and instruction, and continued at home.
- Patients with mild/moderate COPD may benefit from supervised sessions on a treadmill or stationary bicycle, exercising at 75% maximum heart rate for 20 minutes, 3 times a week, to improve cardiovascular fitness.
- Patients with moderate COPD may benefit from strengthening of specific muscle groups using Multigym or simple exercises at home such as wall press ups, walking on the spot, sitting to standing and step ups.
- Self help groups which meet regularly to exercise may provide mutual encouragement and support.

\*GOLD Guidelines 2003, p. 11.

## Exercises for moderate/severe COPD

1. **Shoulder shrugging:** Circle shoulder girdle forward, down, backwards and up. Keep timing constant, allowing two full seconds per circle and relax throughout. Continue for 30 seconds. Repeat the exercise three times with short rest intervals between sets.



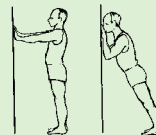
2. **Full arm circling:** One arm at a time, pass arm as near as possible to the side of the head, circle arm in as large a circle as possible (10 seconds/circle). Repeat for forty seconds. Repeat exercise three times with short rest intervals between repetitions. Repeat with other arm.

3. **Increasing arm circles:** Hold arm away from body at shoulder height. Progressively increase size of circles for a count of six circles in ten seconds; then decrease for a further count of six. Repeat for forty seconds. Repeat with other arm.

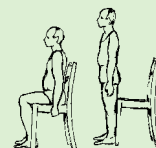


4. **Abdominal exercise:** Sitting in a chair, tighten abdominal muscles, hold for a count of four; then release over four seconds to starting position. Repeat continuously for thirty seconds. Perform the procedure three times with a short rest period after each procedure.

5. **Wall press ups:** Stand with feet a full arm's length distance from the wall; place hands on wall and bend at elbow until nose touches the wall; push arms straight again allowing eight seconds from start to completion. Repeat for 40 seconds continuously to a total of five repetitions. Repeat three times with a short rest period after each procedure.



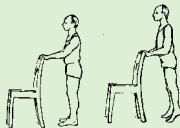
6. **Sitting to standing:** Using a dining chair, sit, stand, sit allowing ten seconds from start to completion. Repeat continuously for forty seconds for a total of five repetitions. Repeat three times with a short rest period after each procedure.



7. **Quadriceps exercise:** Sitting on chair straighten right knee, tense thigh muscles, hold for count of four, then relax gradually over a further four seconds to a total of five repetitions over forty seconds. Repeat the exercise three times with short rest periods in between sets. Repeat with left leg.



8. **Calf exercises:** Holding onto back of chair, go up on toes, return to floor taking 8 to 10 seconds to complete procedure. Repeat continuously for forty seconds.



9. **Walking on the spot:** Holding onto the back of a chair, allow one knee to bend, keeping toes on the floor. Bend other knee, while straightening first knee. Allow four seconds for complete procedure. Repeat this bending/straightening of knees (ie walking on the spot) keeping toes on the floor continuously for forty seconds to a total of ten repetitions. Repeat the exercise three times with short rest periods after each procedure.



10. **Step ups:** Step up with the right foot onto step; then bring up left foot. Step down with right foot and then with left foot. Allow four seconds for the complete procedure and repeat continuously for 40 seconds. Repeat the exercise three times with short rest periods in between sets.

**A final word:** It is possible that the type of exercise is not as important as its quantity and regularity. Do not put patients off by too much attention to detail. The important components are enthusiasm and reassurance from you that the results will be worth the effort.

## NOTES

- Encourage patients to keep as active as possible and exercise to the limits of their ability.
- Walking is an excellent exercise for COPD patients.

## Breathing exercises

### Need for breathing exercises

- Breathless patients hold the upper chest and shoulder girdle in a position of inspiration and overwork the accessory muscles of inspiration, thus requiring greater energy.
- Taking deep breaths can actually increase the work of breathing.
- Breathing exercises can give back an element of control over breathing and give patient more confidence in ability to exercise more.

### Teaching breathing control

- The aim is to minimize the work of breathing and encourage return to normal pattern of respiration.
- Reducing the effort of breathing is achieved by gentle breathing.
- This is a passive exercise, involving relaxing the upper chest and shoulders
- Patients may maximize effective breathing control by assuming a position of relaxation.



- Emphasize breathing rhythms:
  - While walking, breathe in for one step, out for two.
  - While sitting, breathe in for two seconds, out for three seconds.
- Gentle pursed lip breathing may help with breathing control; forceful exhalation increases airway collapse and air trapping.