PHYSICAL FITNESS

Physical fitness is desirable for everyone - COPD'ers not excluded! When the body is in good physical condition, it requires less oxygen.

Are you ready to begin? Great! But, safety first. You and your doctor should discuss your condition and your limitations. Even a strong athlete doesn't jump in the middle of the race.

Don't be a cry baby when you begin exercise. Perhaps it has been a number of years since you've experienced sore muscles; but, expect some. This doesn't necessarily mean you are overdoing it. Once your muscles are in better shape the aches and pains and fatigue will subside. Remember, your arms and legs do not have a lung condition. You can help yourself overcome shortness of breath once those muscles increase in strength.

You will begin feeling better just thinking about doing something good for yourself. Set realistic, weekly goals. Record your progress everyday. Keeping your progress record tends to make you feel a little bit guilty if you don't exercise and extremely satisfied when you do exercise.

Figure 1

One of the items you will record is your heart rate. Learn to take your own pulse (heart beat). There are two places where you find your pulse easily. The first is the carotid pulse on either side of the neck near the angle of the jaw. (Figure 1) The other is the radial pulse on the inside of the wrist, along the thumb side of the hand. (Figure 2) Check it periodically. Count the beats for 10 seconds and multiply the number of beats by 6; or count the beats for 15 seconds and multiply by 4. Accuracy is essential. Note: Count the first pulse beat as 0, not 1 as you start the

Figure 2

count at 12 and stop at 2 for 10 seconds, then multiply by six. Or, count the first pulse beat as 0, not 1 as you start the count at 12 and stop at 3 for 15 seconds, then multiply by four. Your doctor can tell you the maximum (highest) heart rate which is safe for you during exercise. See Appendix D for determining your target heart rate and exercise prescription.

The exercises described in this chapter should all be done using diaphragmatic breathing with pursed-lips during exhalation. There is an explanation and a purpose for each exercise. You can know how much is too much or how little is too little by learning to know and to listen to your body. If you have chest pain, extreme wheezing, dizziness, extreme shortness of breath, prolonged heart palpitations or any other symptoms that make you uncomfortable, check with your doctor. You may be overdoing a little, but do expect some discomfort in the beginning.

Shortness of breath alone does not necessarily mean that you are overdoing. It probably means that you need to slow down temporarily.

Walking is an important part of your exercise program. Walking outside, weather permitting, or walking inside your home or in shopping malls and stores should be part of your daily routine. Using proper diaphragmatic breathing with pursed-lips during exhalation will enable you to breathe more easily during longer walking periods.

In the beginning of your exercise program, you may become short of breath in a relatively short period of time. As you exercise more regularly, your body will increase in strength and stamina. Your heart will also become stronger. Its rate will increase during exercise, but don't be frightened, for this is how the heart exercises.

Daily Progress Report Instructions

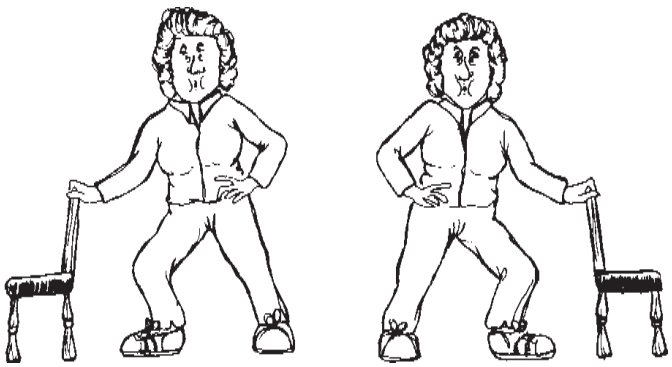
• Purchase a calendar with large squares for each day to record the types of exercise you do and to record your

progress.
• Establish realistic goals. Do not exercise to the point of exhaustion.
• Take your medications or breathing treatments before you begin to exercise. The exercises will be easier if your airways are as open as possible.
• Review the General Procedure, flexibility exercises and the walking and biking routines in this chapter. Include inspiratory resistive breathing training if you are using the Breather. See pages 42-45.
• Take your pulse (heart beat) before exercise and record it for the proper day.
• Take your pulse immediately after exercise or any time you feel your heart beat has increased significantly. Record your fastest pulse. Note: Your heart rate will vary from day to day and even hour to hour. Medications can effect your pulse. Also, how you feel physically or mentally can effect your pulse. Check with your doctor, nurse or therapist if you are unsure.
• Record the number of minutes you exercised daily. Initially, or when you are not feeling as well, exercise may be broken down to several times a day. The goal, however, is to walk, bike, practice inspiratory resistive breathing training, etc. up to 20 or 30 minutes at one time.
• Continue daily charting. This will be time consuming; but, you will enjoy charting your progress. Note: Recording your progress will be extremely satisfying and your physician, nurse or therapist will find this record helpful in advising you when and how to adjust your exercise routine.

General Procedure Before Exercise

Start the day right. When your body is relaxed from sleeping all night or when you have been resting, your muscles are more vulnerable to injury. Instead of bolting out of bed, follow this simple routine.

1. Roll onto your side and draw your knees up.Begin at step 3 if you are already sitting.
2. Raise yourself up slowly placing your palms flat on the bed as you inch your legs toward the edge with your arms until you are in a sitting position.
3. Bend your toes up and down.
4. Bend your ankles up and down and rotate them in circles.
5. Bring your knees up towards your chest, then lower them.
6. Tighten and release the muscles in your thighs and buttocks.
7. Lift your legs, spread them apart, bring them together, then lower them.
8. Take in a slow, deep breath while raising arms overhead. Exhale through pursed-lips while bringing arms to your sides.
9. Stand up slowly. Note: You may wish to remain seated and continue with the flexibility exercises on the following pages beginning with the Head Bend.
10. Exhale through pursed-lips while trying to touch toes. Do not push yourself. Feel only some tension in the back of the legs. Do not bounce.
11. Spread legs approximately shoulder distance apart, one foot facing forward, the other facing the direction



in which you will lunge. Begin with the right. While bending the right knee, lunge comfortably to the right feeling tension in the calf and upper leg. Use pursed-lip breathing while lunging. Heels should remain on the floor in order to feel the tension. Repeat several more times with the right leg, then, reverse to the left and repeat several more times.

12. Stand approximately 18 inches in front of a wall and slowly lean forward until your forehead touches it. (See illustration.) Do this very slowly feeling the muscles thoroughly stretch behind your legs. Note: Exercise or stretching may bring on leg cramps that wake you up at night. If you experience cramps, practice leg stretching for a few minutes three times everyday.

13. Step in place one minute feeling some tension in the upper thighs.
14. Drink plenty of fluids while exercising. You cannot over do the fluids!

Proper Breathing While Exercising

Try to maintain diaphragmatic breathing while inhaling preferably through the nose as long as possible. However, as the demand for oxygen becomes more demanding, mouth breathing becomes necessary. As you recall in Chapter 3, mouth breathing during inhalation tends to promote upper chest breathing. Review your breathing techniques often and always remember: Exhale through pursed-lips varying the degree of resistance necessary to keep up with the exercise.

Exercise may cause you to wheeze. When this happens, most people quit exercising; but, this is not necessary. Tell your doctor. He may prescribe additional medications especially helpful in preventing asthma attacks; or, he may suggest to use your nebulizer or metered-dose inhaler just before exercise.

As you begin your exercise routine, you may also feel varying degrees of shortness of breath while doing the basic flexibility exercises. You may even consider not doing them again; but, before you make that decision, consider the benefits of exercise: more energy, stronger heart and lungs, feeling of well-being, control over body fat, less tension and stress, better sex life, less chance of developing osteoporosis, heart disease and respiratory infections.

The following is a true story of a person who had first hand proof of the benefits of an exercise program. . .

Helen had been on oxygen for the past year. She had not been exercising since her bout with the flu over 8 months ago. She was progressively becoming weaker and weaker. Helen's family was deeply concerned for it was unlike her not to try and help or, at least, join the rest of the family's company.

One day Helen's husband, Jim, was watching a medical documentary about exercise and emphysema. He became so excited watching people with lung disease exercising more strenuously than he even did. Jim's excitement was contagious. Soon Helen was walking 10 minutes twice a day. She was also doing the flexibility exercises and using the Breather for increasing the strength of her respiratory muscles.

Helen's next two months seemed almost miraculous. Her family and physician were extremely pleased with her strength and newly found enthusiasm. Helen, as well, was pleased with herself until an acute respiratory infection landed her on a respirator in the hospital. Her physician told the family that her prognosis looked grim. Apparently, no one told this to Helen. She was off the

respirator in two days and out of the hospital in three more. That was over six months ago. Helen is walking again - as much as 20 minutes at a time.

Her physician said he really could not explain her remarkable recovery. Helen said she could. She knew the benefits of exercise first hand. While she may from time to time get respiratory infections, Helen knows that a strong body does make the difference.

Shoulder And Neck Muscle Relaxation

The muscles of the shoulder and neck are considered accessory respiratory muscles and normally are not used unless a person is working hard or exercising. However, you may have gotten into the habit of using these accessory muscles even during quiet breathing. This often happens as a result of decreased mobility of the chest and flattening of the diaphragm due to hyperventilation and trapped air. Using the accessory muscles promotes shallow breathing and a tense sensation in the neck and shoulders.

Anytime you notice this tenderness in the neck and shoulders, try the following exercises. Two minutes or so will relax you.

The following exercises may be performed as part of your daily exercise routine and anytime during the day when you feel tense.

Head Bend

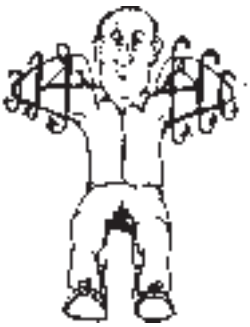
1. Bend your head up while inhaling. Then bring your head down toward your chest while exhaling through pursed-lips.
2. Repeat 5 to 10 times. Relax.

3. Bend your head from side to side feeling tension on either side of the neck.
4. Repeat 5 to 10 times. Relax.

Head Bend

Arm Circles

1. Circle the elbows clockwise 5 to 10 times. Relax.
2. Circle the elbows counter-clock wise 5 to 10 times. Relax.
3. Relax with arms resting at sides.



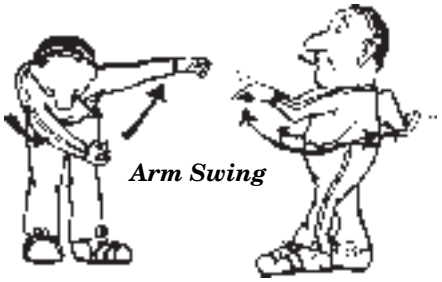
Arm Circle

Shoulder Shrug

Shoulder Shrug

1. Shrug your shoulders upward and tighten the muscles as much as possible.
2. Lower your shoulders. Relax.
3. Repeat 5 to 10 times.

Arm Swing



Arm Swing

1. Stand in an upright position.
2. Swing your arms forward and backward briskly. Use pursed-lip breathing.
3. Relax.
4. Stand, bending your body forward.
5. Swing arms loosely from side to side. Use pursed-lip breathing.
6. Relax.

Exercises To Increase The Flexibility Of The Rib Cage

Hyperinflated lungs and a flattened diaphragm due to COPD also have the effect of decreasing the flexibility of the rib cage. The ribs may have become stiff and immobile. The following exercises will help your lungs to expand more fully. In addition, they will increase the strength of your arms and help you bring up excess mucus.

Butterfly

1. Sit upright in a straight back chair with your shoulders and arms relaxed.
2. Raise your arms extending them as far out to the sides as possible, and clasp hands behind your head.
3. Inhale through your nose.

Butterfly

Butterfly (cont.)

4. While exhaling slowly through pursed-lips, touch your elbows to your knees.
5. While inhaling through your nose slowly come back to an upright position.
6. Relax, if necessary.
7. Repeat 5 to 10 times.

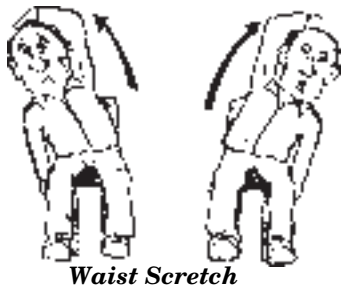
Arm Reach & Stretch

Arm reach & streach

1. Sit upright in a chair with your shoulders and arms relaxed.
2. Inhale through your nose.
3. While exhaling through pursed-lips, slowly bend forward until your hands touch the floor.
4. While inhaling slowly, come back to an upright position. Exhale slowly through pursed-lips.
5. While inhaling through your nose, extend your arms high into the air. Exhale through pursed-lips while bending forward until your hands touch the floor.
6. Repeat cycle 5 to 10 more times.

Waist Stretch

1. Sit upright in a chair with your shoulders and arms relaxed.
2. Raise your right arm over your head. While exhaling through pursed-lips, slowly bend from your waist to the left. Feel your muscles pull along the right rib cage.
3. Inhale through the nose while returning to the starting position.
4. Repeat 5 to 10 more times.
5. Relax, if necessary.
6. Repeat 5 to 10 times with the left arm.



Waist Scretch

Exercises To Strengthen Abdominal Muscles

Development of the abdominal muscles can help improve proper breathing and aid in effective coughing. When these muscles are contracted during exhalation they help push the diaphragm up and expel trapped air from the lungs. When these muscles are properly developed, breathing becomes easier and coughing is more effective.

Leg Raises

Leg Raises

1. Lie on your back with your right knee slightly bent.
2. While inhaling through pursed-lips, raise your left leg upward.

3. Lower leg while exhaling through pursed-lips.
4. Repeat 5 to 10 times.
5. Relax, if necessary and repeat cycle with right leg 5 to 10 times.

Leg Raises (Cont.)

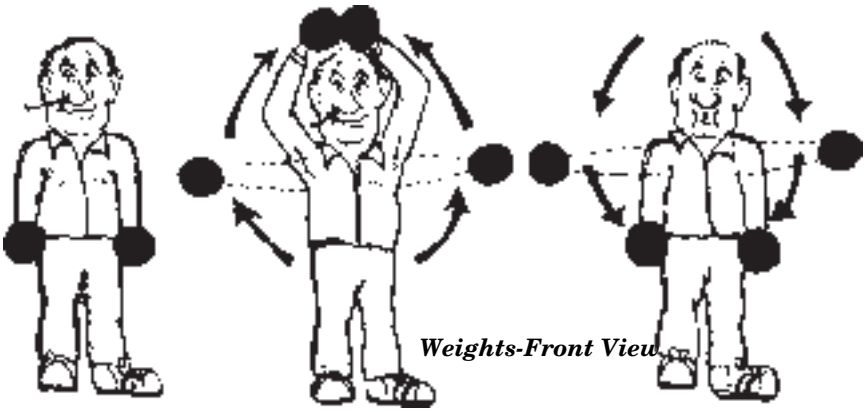
Sit-up Modified

Sit-up - Modified

1. Lie on your back with your knees bent.
2. While exhaling through pursed-lips, raise your head and shoulders only as far as you can. Do not do an entire sit-up as this may put too much strain on the lower back.
3. While inhaling preferably through the nose, return to the starting position and relax.
4. Remember to exhale through pursed-lips while raising head and shoulders and inhale while returning to resting position.
5. Repeat 5 to 10 times.

The following exercises using 1 or 2 pound weights (Soup cans will initially do.) will improve muscle mass in the arms and shoulders. They will also improve the mobility of the rib cage. At the outset it may be too difficult to use weights. Raising and lowering the arms with coordinated breathing will help strengthen the arms and

prepare the arms for the heavier weights. Note: There are several excellent weights on the market which you do not have to hold. They simply fit over the wrists or over the knuckles. They are easier to use than weights and you can't drop them.



Weights-Front View

Arm Raising With Weights - Front View

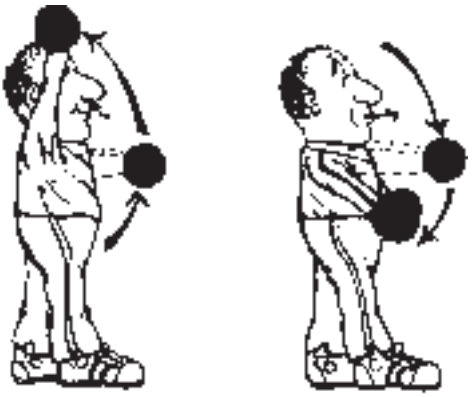
1. Stand or sit in a straight position with weights in each hand and arms out to your sides.
2. While inhaling through the nose, lift arms slowly straight overhead bringing weights together.
3. While exhaling through pursed-lips, slowly bring weights to your sides. Relax, if necessary.
4. Repeat 5 to 10 times.

Arm Raising With Weights - Side View

1. Stand or sit in a straight position with weights in your hands and arms slightly forward.

Weights-Side View

Weights -Side Veiw (Cont.)



2. While inhaling through the nose, slowly swing arms forward, bringing weights overhead.
3. While exhaling through pursed-lips, slowly bring weights to your sides. Relax, if necessary.
4. Repeat 5 to 10 times.

Exercise By Walking

Walking may cause shortness of breath; coordinating proper breathing with walking techniques will make it much easier.

The breathing techniques consist of abdominal diaphragmatic breathing with pursed-lips during exhalation. (Chapter 3) You may recall that, although these techniques cannot change what is basically wrong with the lungs, they will improve your breathing pattern.

A common breathing problem is being able to exhale enough air from the lungs so that the next breath will be deep enough to allow plenty of fresh air to enter the lungs. Proper breathing, while walking, will increase the amount of air you breathe into your lungs: More oxygen will be absorbed into the blood and more carbon dioxide will be eliminated.

Coordinating Breathing & Walking

• Use diaphragmatic breathing with pursed-lips during exhalation. It may take some people longer than others to master diaphragmatic breathing; however, pursed-lip breathing is easy once understood and should never be omitted. (See proper breathing while exercising, page 75.)
• Walk with good posture and swing the arms loosely by your sides in a relaxed fashion. If you are tense, your muscles use more oxygen.
• Do not take deep, gasping breaths. If you do, air may be trapped in the lungs causing tightness in the chest and shortness of breath.
• When walking or doing exercise, pause ever so slightly after you inhale. This slows down the breathing rate which allows the blood passing through the lungs to have time to pick up more oxygen and to eliminate more carbon dioxide.

• Exhale slowly through pursed-lips taking a little longer than inhalation. If you feel you must count, inhale to the count of two, pause very briefly, and exhale to the count of three. Sample breathing pattern: Inhale 1, 2, pause, exhale 1, 2, 3. It is important to exhale comfortably, not forcing all the air out. With practice, you will find a comfortable breathing ratio helping to make breathing easier and keeping trapped air to a minimum.

Walking won't harm you; it will only help you. Immobility creates a vicious cycle that only you can break. The less you do, the less you will be able to do.

Getting Started - Walking

• See General Procedure Before Exercise at the beginning of the chapter.

• Go for a short walk that will not take you too far from "home base." Take note how far you have walked when you notice that you have become uncomfortably breathless. Stop and rest. Use diaphragmatic breathing with pursed-lips during exhalation.

• It is possible that you may find yourself breathless after 25 steps. Then, during the second session, try to increase your distance by 10 steps. When your walking has increased, count minutes instead of steps. Remember, shortness of breath after walking is not unusual. It is an indication that the body is trying to meet its oxygen demand. Concentrate on proper breathing.

• Review Panic Control Technique, Appendix C. Carry a cloth wrap with you during walks and exercise. The wrap technique may be equally effective while standing.

• Set reasonable goals when beginning a walking/exercising routine.

• Rest when you become too short of breath.

• Record your daily progress on a calendar with large squares for each day. (See Daily Progress Report Instructions on page 72.)

Walking should become a part of your total fitness program. However, shortness of breath can happen at anytime. Stop whatever you are doing. If there is no place to sit, lean against a wall, a parked car or some large object and practice panic control breathing properly using dia-

phragmatic breathing with pursed-lips; or, stand facing the wall with your forearms against it while resting your head on your arms using proper breathing.

If you can't walk outdoors, go to shopping malls or mark off an area in your home. If you choose stepping in place, you may find yourself becoming breathless more quickly. This is because one usually steps higher and moves the legs up and down at a faster clip than walking. If you find this to be your situation, slow down. Check your pulse. You are checking time and heart rate, not speed.

if you become short of breath, stop and rest. Concentrate on proper breathing.

Biking

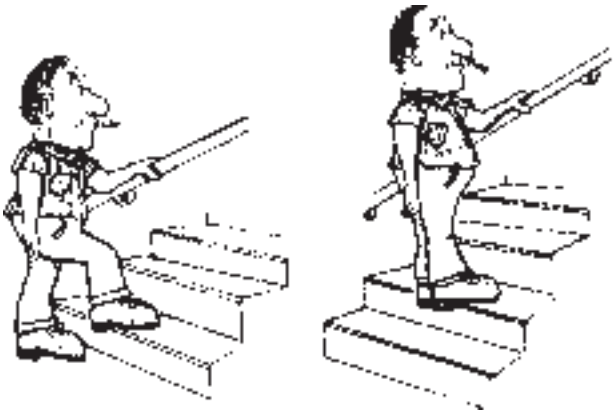
Biking is another excellent conditioning exercise. Outdoor biking, weather permitting, is great; however, many people feel the stationary bike is best since it can be used in any kind of weather and at any time.

Getting Started - Biking

• Follow the basic guidelines listed under Getting Started - Walking on the previous page.
• Buy a good exercise bike. While there are many bikes on the market, it does not pay to buy poor quality.
• Biking, like walking, can become a part of your permanent fitness program. Set realistic goals and enjoy better health.

Stairs - How To Get Up And Down

Ascending stairs is usually more difficult than descending stairs. These suggestions should be helpful.



Ascending Stairs

• Don't rush. Inhale through your nose if possible. Use your diaphragm.
• Step up while exhaling through pursed-lips. Inhale as you rest before the next step up.
• Use hand rails; and, place your whole foot flat on each step for security.
• Plan what you need upstairs before making the trip.

Descending Stairs

• Don't rush.
• As you descend the stairs, count the number of steps you take while inhaling. For example, if you inhale while descending one step then exhale through pursed-lips while descending two steps. Walk downhill in the same manner.
• Use hand rails; and, place your whole foot flat on each step for security.

General Suggestions

• Use your calendar for recording daily progress. It is self-motivating and your doctor, nurse or therapist will also be pleased to chart your progress. See Daily Progress Report Instructions at beginning of chapter.

• As a general rule, whatever you do that requires exertion, do it while exhaling through pursed-lips. Never hold your breath. Note: Another indication of when to use pursed-lip breathing is if you should catch yourself holding your breath, you should be pursed-lip breathing.

• Inhale through the nose as much as possible while walking, exercising or resting. See page 37 if you are unable to inhale through your nose.

• Inhale through the nose when reaching up for an object. Exhale through pursed-lips when bringing the object down. If it is too heavy, get help.

• Exhale through pursed-lips while lifting objects. Do not hold your breath. If it is too heavy, get help.

• When bending over to pick up a light object or to put on your shoes, exhale through pursed-lips. Note: Bend at the knees rather than at the waist when picking up objects.

• When changing positions from lying to sitting, from sitting to standing or vice-versa, always exhale through pursed-lips. Do not hold your breath. Example: Sit at the edge of a chair. Inhale properly; and, as you begin to rise, exhale through pursed-lips.

• When bending over to pick up shoes, etc., inhale first through the nose, then exhale through pursed-lips while bending.

• A resting position you may find comfortable is to lean forward with head resting on crossed arms upon a table that is about chest level. Some may find this a good sleeping position.