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About ACSM's Current Comments

Current Comments are official statements by the American College of Sports Medicine concerning topics of interest to the public at large.

Exercise Tips for Persons with COPD.

- Consult your doctor regarding the type and intensity of exercise safe and appropriate for you.
- Your exercise program should be modified as your medical status changes.
- For less breathing discomfort, the late morning or early afternoon may be the best time to exercise.
- Enjoyable activities and social reinforcement will help improve your exercise compliance.
- Aquatic exercise is recommended if an orthopedic problem prevents full use of your legs.
- Good technique is more important than the amount of weight lifted during resistance exercise.
- Include balance and flexibility exercises in your warm-up and cool-down.
- If you require oxygen therapy during exercise, try using a treadmill or stationary cycle.
- Establish an exercise schedule and consider keeping a progress chart.
- Losing excess body weight is promoted by incorporating more walking into your daily activities.
- Dietary counseling can help enhance your health status and the benefits of exercise.

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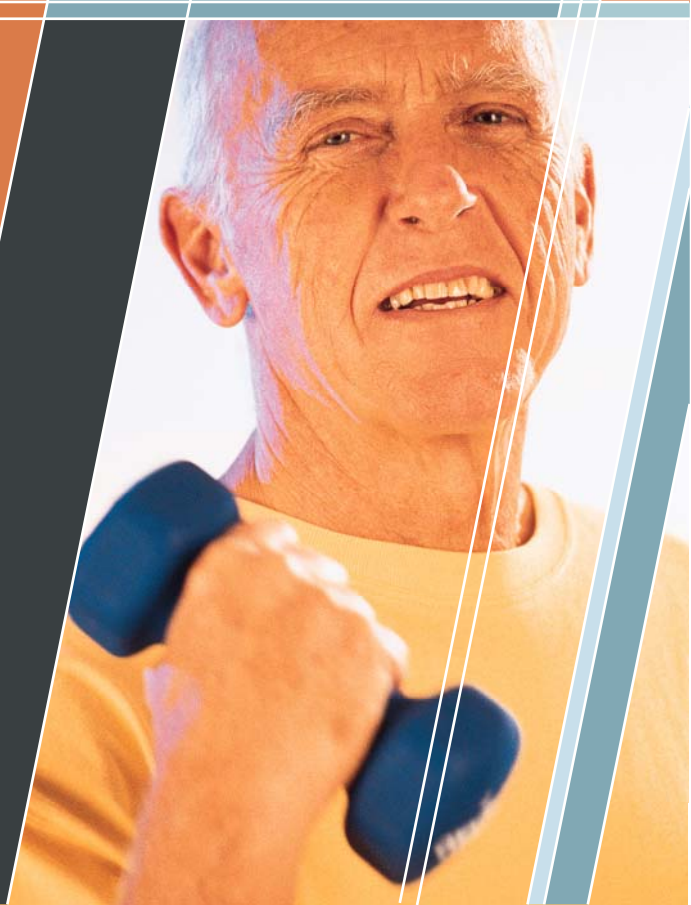
Current Comments

Report on Exercise for Persons with COPD



Patient
Education

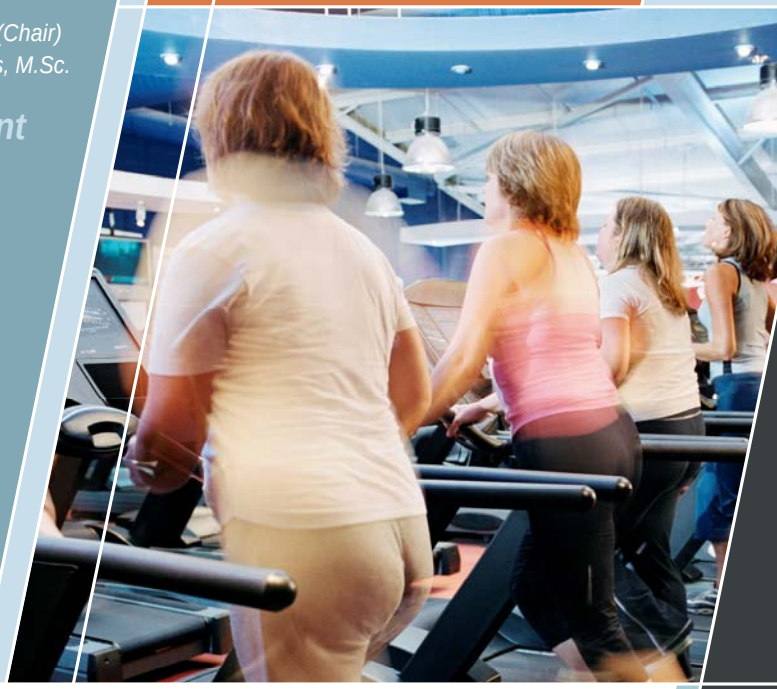
In addition to exercise training, education on diaphragmatic and pursed-lip breathing strategies can help patients cope with periods of breathlessness and reduce their exercise anxiety. Patient education should also include counseling on the use and timing of prescribed medications, such as supplemental oxygen, bronchodilators, mucolytics, and/or corticosteroids, before and during exercise.

As with any population, COPD patients should stop exercising if they experience pressure or pain in the chest, neck, arm or jaw that might signal inadequate blood flow to heart tissue. The onset of nausea, lightheadedness, dizziness and headache during exercise are other indications to terminate the activity and seek medical advice. Since breathlessness is usually a transient sympto m during exercise, patients should slow down rather than stop suddenly. However, if the labored breathing persists, then stop and rest.

Written for ACSM by Rudolph H. Dressendorfer, Ph.D., P.T., FACSM (Chair)
Mark J. Haykowsky, Ph.D., Neil Eves, M.Sc.

ACSM Current Comment

Chronic Obstructive Pulmonary Disease (COPD), such as emphysema, chronic bronchitis and asthma, is defined by the American Thoracic Society as a condition characterized by airflow obstruction that reduces the ability to sufficiently empty the lungs. The incidence of COPD is presently increasing in the U.S., with an estimated 16.5 million people now suffering from shortness of breath and the disabling effects of this disease. Lack of exercise contributes to disability in COPD. Exercise training is a major component of pulmonary rehabilitation programs today and is an established safe and effective intervention for improving physical capacity and quality of life. Aerobic exercise (riding a stationary bike or walking) and resistance exercise (lifting a light weight with the arms or legs) can help restore and maintain functional independence in COPD.



Exercise for Persons with COPD

An ACSM Report

The shortness of breath experienced by COPD patients at rest and/or during activities of daily living can lead to an increasingly sedentary lifestyle, a progressive deterioration in functional capacity, and possible isolation at home. With progressive inactivity, cardiovascular function and skeletal muscle mass decline.

Exercise training is a vital component of comprehensive pulmonary rehabilitation. The American College of Sports Medicine (ACSM) supports the viewpoint that light to moderate physical activity (30 minutes a day, on most, if not all days of the week) is beneficial for improving the quality of life in persons with COPD. Exercise cannot reverse the physiologic and structural deficits in COPD, but it can reduce disability associated with this condition by improving physical endurance and strength, as well as breathing efficiency and tolerance, especially in severely impaired patients. Persons with COPD who follow an individualized progressive exercise program can often increase their functional capacity 70% to 80% after six weeks of training.

Inactivity and COPD

The deterioration in aerobic fitness and strength creates a vicious cycle that leads to greater breathlessness with exertion, muscular fatigue, an eventual loss of functional independence, and depression. A major goal of pulmonary rehabilitation exercise programs is, therefore, to reverse the physical disability resulting from inactivity.

Benefits of Exercise in COPD

Many physiological and psychological benefits have been reported in COPD patients after participation in randomized controlled trials of prescribed exercise involving upper and lower body aerobic and resistance training. Major benefits include increased physical capacity, decreased anxiety about breathlessness, greater independence in daily activities, reduced fatigue and improved quality of life. These positive outcomes occur even though impaired lung function continues to persist after exercise training. Regular exercise thus enables COPD patients to do more recreational and vocational activities despite their lung disease.

Importantly, the gain in fitness and confidence with exercise reverses the spiral of deconditioning associated with COPD. One reason for the decrease in exercise anxiety is that patients become desensitized to the shortness of breath that they live with on a daily basis. Furthermore, researchers have shown that COPD patients who exercise may also show better performance on tests of verbal fluency, suggesting that regular exercise increases blood flow to the brain to enhance cognitive function.

Health Benefits from

Exercising

After the initial weeks of training, patients may be able to sustain a high percentage of their peak work capacity for 30 to 40 minutes per training session. The benefits of exercise typically increase as the training load is gradually progressed. Moderate exercise on a daily basis has been shown to decrease the sensation of breathlessness and produce the greatest improvements in functional capacity and health status. For most patients, 15 minutes of moderate physical activity, 3 days per week is probably the minimum amount for ensuring the exercise benefits.

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Aerobic training should involve the major muscle groups of the lower extremities, as these are used in everyday tasks such as walking and climbing stairs, for a total of 20 to 30 minutes. Improved walking endurance, activity tolerance and quality of life have been reported after programs using either stationary cycling, ground-based and treadmill walking, or a combination of all three. Since numerous daily activities require use of the upper extremities, endurance and strength training of the upper body can also provide practical benefits. It is advisable to combine resistance training with an aerobic training program to help increase endurance. Exercises for strengthening should include all major muscle groups. The resistance should be prescribed for each person and allow for completion of at least one set of 8 to 12 repetitions of the exercise. As muscular strength and endurance improve, more sets can be added to each exercise.

Exercise Guidelines in COPD

Persons with COPD may have co-existing cardiovascular abnormalities such as high blood pressure or coronary artery disease. A medically monitored exercise evaluation is highly recommended to assess the patient's cardiac risk as well as physiological and subjective responses. Patients then can be stratified according to their need for medical support and surveillance during exercise. A symptomlimited exercise tolerance test is very helpful for determining the appropriate range of exertion and the optimal training heart rate. Medical supervision is recommended at least twice a week (especially at the beginning of the program) in order to develop the patient's understanding and self-confidence in how hard to exercise, as well as to individualize the training intensity, duration and frequency.

Since breathlessness is often the primary determinant of exertional tolerance, ratings of shortness of breath can be used to monitor the patient's exercise intensity. Ideally, the exercise intensity will not be limited by shortness of breath before the patient experiences moderate exertion. Intermittent exercise (i.e., short intervals of exercise alternating with regular rest periods) usually permits higher intensities.