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ELDER CARE

A Resource for Interprofessional Providers

Physical Exercise Guidelines for Older Adults

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Regular physical exercise is a key intervention in aging for preserving cognition, function and well-being, and for reducing the risk of cardiovascular events. Indeed, there is an inverse relationship between fitness and mortality in both healthy older individuals and in those with chronic diseases. Key benefits of physical exercise for older adults are shown in Table 1.

Although physical decline is often associated with aging and can affect almost all systems in the human body, the rate of decline varies considerably. There is evidence that this deterioration may be partially avoided and/or reversed with regular exercise and avoidance of sedentary lifestyles. In fact, older adults have the ability to respond positively to exercise even in their 90s.

Unfortunately, while there are clear benefits to physical exercise with aging, older adults are at higher risk than younger individuals for many sports-related injuries and the disability that results from them. Providing patients with guidelines may help to maximize the benefits of regular exercise while minimizing the risk of injury.

Exercise Recommendations for Older Adults

The American College of Sports Medicine and the American Heart Association (ACSM/AHA) guidelines state that to achieve health benefits, older adults should participate in at least 150 minutes/week of aerobic exercise (Table 2 on reverse side of page). The US Department of Health and Human Services (DHHS) has issued similar guidelines, but the DHHS guidelines stress that additional health benefits are attained if the amount of moderate and vigorous-intensity exercise is 300 minutes/week.

For older adults who are deconditioned, functionally limited, frail, or have chronic conditions that affect their ability to perform any physical activities, a more conservative exercise regimen is necessary to prevent complications or injuries. For example, short episodes of activity are appropriate for people who were inactive and have gradually started to increase their level of fitness. Balance training and/or muscle strengthening should precede any aerobic training in frail individuals.

Table 1. Key Benefits of Physical Exercise in Older Adults

System	Benefit
Inflammation	Chronic low grade systemic inflammation is a common manifestation of aging. Regularly performed exercise can reduce markers of systemic inflammation, even at relatively modest activity levels
Neurological	Faster nerve conduction; improved balance; improved memory, attention and reaction time; improved visual-spatial orientation and proprioception; improved sleep
Cardiovascular	Increased heart rate variability; lower blood pressure; better endothelial reactivity; lower inflammatory markers; reduced arterial stiffness, improved cardiac output; less atherosclerotic disease; enhanced microvasculature
Endocrine and Metabolic	Increased basal metabolic rate; improved lipid profiles; lower percentage body fat; improved insulin sensitivity and glucose homeostasis
Muscles	Increased muscle mass, strength, and power
Bones and Joints	Increased bone mass and flexibility
Ligaments and Tendons	Increased synthesis of collagen
Pulmonary	Improved gas exchange; stronger respiratory muscles

TIPS FOR RECOMMENDING EXERCISE REGIMENS FOR OLDER ADULTS

- Older adults should remain physically active. The target for health benefits is at least 150 minutes of aerobic exercise per week. If this cannot be obtained, some exercise is better than none.
- For additional and more extensive health benefits, recommend 300 minutes per week of aerobic exercise.
- If a patient is sedentary, has multiple medical conditions, is frail, or has problems with balance, the patient should be enrolled in an observed physical therapy program to aid in beginning a physical activity regimen.
- Resistance (weight) and flexibility training should be part of the exercise routine for older adults.

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Common Exercise-Related Injuries in Older Adults

Exercise-related injuries in older adults are often the result of irregular activity, or overuse with repetitive microtrauma to tissues. These injuries account for up to 70% of sports injuries in older adults, and they take longer to heal when compared to similar injuries in younger adults. Muscle strains are among the most frequent overuse injuries, largely due to the decreased flexibility of musculoskeletal units and higher prevalence of weakened muscles that occur in older adults. Tendinoses, such as rotator cuff tendinopathy, medial epicondylitis, and syndromes of the wrist tendons are also common among those who exercise. Other factors that contribute to overuse injuries are osteoarthritis in weight-bearing joints and hypovascularity of tendon units, particular in the rotator cuff.

Medications and Exercise

Many older adults take daily medications for treatment of chronic medical conditions, and some of these medications can impair exercise performance. For example, beta blockers can reduce exercise tolerance, producing early fatigue, a lower lactate threshold, increased predisposition to hyperthermia during exercise, and bronchospasm in some

individuals. Diuretics can lead to urinary loss of potassium and magnesium, which increases the risk of muscle cramping, arrhythmias, and rhabdomyolysis, especially during warm weather. Statins may induce muscle weakness, increase self-reported fatigue, and alter energy metabolism during aerobic exercise. Metformin can increase heart rate and lactate concentrations during exercise. Quinolones and steroids increase the risk of tendinopathy and tendon ruptures.

Other Considerations

For individuals who have been sedentary, have multiple medical conditions, are frail, or have problems with balance, it is often useful to begin exercise activities in a supervised physical therapy program, or through a “Sit and Be Fit” or “Silver Sneakers” program. Patients with recent cardiac events or exacerbations of pulmonary disease should be considered for cardiac or pulmonary rehabilitation, respectively. But, even if the individual is unable to fully participate in these programs and achieve the exercise goals listed in Table 2, some exercise is better than none. The goal is to avoid inactivity.

Table 2. Exercise Recommendations for Older Adults from the American College of Sports Medicine and the American Heart Association

Exercise Type	Recommendation
Endurance	150 min/week moderate-to-vigorous intensity exercise* Type: Any modality that does not impose excessive orthopedic stress
Resistance	2 times/week moderate-to-vigorous intensity exercise* Type: Progressive weight training program or weight bearing
Flexibility	2 times/week moderate intensity exercise* Type: Any activities that maintain or increase flexibility using sustained stretches for each major muscle group
Balance	For frequent fallers, or for individuals with mobility problems Type: Progressively difficult postures that gradually reduce the base of support, dynamic movements that perturb the center of gravity, and stressing postural muscle groups

* Relatively moderate-intensity activity is at a level of perceived effort of 5 or 6 on a scale of 0 to 10, where 0 is the effort of sitting, and 10 is maximal effort. Relatively vigorous-intensity activity is a 7 or 8 on this scale.

References and Resources

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