

## Exercise and Aging

Much has been written about effective interventions for many diseases and conditions associated with aging. Most often, the solutions and treatments discussed are related to the latest drug or surgical procedures, however more simple and conservative solutions are overlooked and do not always seem to compete in reaching out to the aging population.

Participation in a regular exercise program is an effective intervention to reduce and prevent a number of functional declines associated with aging. Endurance training can help maintain and improve various aspects of cardiovascular function and reduce risk factors associated with disease states through improving overall health status. Strength training helps offset the loss in muscle mass and strength, improve bone health, and increase flexibility.

Aging adversely affects the quality and strength of human bone material. Throughout life bone is constantly remodeling to maintain adequate bone mass and density. Bone density reaches its peak during the second decade of life and remains stable until middle age. Factors such as hormone levels, calcium intake, activity level, and mechanical stresses can accelerate the natural imbalance of the bone re-building process resulting in further weakening of bones in the older population, often leading to osteoporosis.

The relationship between bone mass and activity level is well established. Immobilization and inactivity results in a rapid decrease in bone density. Evidence shows that bone mass recovers when sufficient activity resumes. Strength training and bearing weight through bones and joints, produces substantial increases in the strength, mass, power, and quality of skeletal muscle. Enhanced bone strength can help prevent the loss of bone mineral density with age, and further help decrease risk of fractures often sustained as a result of falls in the elderly.

Age-related loss in muscle mass is termed sarcopenia. As muscle mass declines, so does muscle function and strength, resulting in subsequent muscle weakness. Declining muscle strength and function can result in the inability to complete activities of daily living, lowered gait speed, impaired balance, increased risk of fractures, and a greater falls risk. Loss of muscle mass in the older population can accelerate the onset of age-associated metabolic disorders such as type 2 diabetes mellitus and osteoporosis.

Aerobic exercise and endurance training results in a improvements in functional capacity and reduced risk of developing metabolic disorders in older adults. Despite the normal decline in muscle mass, adequate activity levels in both men and women can maintain muscle strength well into the eighth decade of life. Strength training helps offset the loss in muscle mass and strength typically associated with normal aging and considerable evidence exists that sarcopenia can be prevented, reduced, and even reversed with prescriptive strength training programs.

Joint and connective tissue changes also occur as we age due to a lowered metabolic activity levels, resulting in a progressive loss of flexibility and joint degeneration. The strength and integrity of connective tissues such as tendons and ligaments become compromised, in turn further decreasing the strength of deteriorating joints. Connective tissues also lose the ability to maintain adequate water content, causing dehydration and thinning of those tissues leading to cartilage deterioration and development of osteoarthritis.

Moving joints to promote circulation of hydrating materials can help maintain the integrity of joint surfaces, flexibility, and range of motion. Sufficient weight bearing and range of motion exercises have been shown to alleviate age-related stiffness and joint pain often associated with degenerated and arthritic joints.

With our growing aging population, the importance of exercise and physical activity to improve health, functional capacity, quality of life, and independence is continually increasing and should be encouraged among our aging adults. One way to stay active or start a regular exercise program is to work with an educated and trained professional.

Tidewater Physical Therapy is offering a wellness program for those in the community who are interested in initiating a regular exercise routine under the supervision of trained health professionals in the new Lewes location on Old Orchard Road. If interested, please call (302)-645-0742 for more details on our growing successful program.

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