

# Orthopaedic Observations

*A Matter of Medicine...*

*TM Pending*

## “Aging and Growing Stronger”

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In recent years, the trend in the healthcare system has changed its focus from a medical model, diagnoses and treatment, to a preventative model. The preventative model uses knowledge of medical and social science to promote prevention of disease, improve quality of life, and eliminate health disparities. At this time, healthcare practitioners, especially physical

therapists, are encouraging patients in preventative measures. These preventative measures include but are not limited to a daily exercise program containing balance, strengthening and stretching exercises, diet and nutrition education, and postural awareness.

Physical therapists have an overwhelming knowledge of rehabilitation techniques. From these techniques it is thought that therapists are able to assess and treat dysfunction. However, one of the most overlooked aspects of physical therapy is its role in preventing loss of structure, disease and dysfunction in the body. Therapists have a wide knowledge base of the body in regards to physical mobility, balance, posture, fatigue, and diet/nutrition putting them at the forefront of the prevention process. As healthcare practitioners, it is our job to present our knowledge to the community in an attempt to promote health and wellness and conversely prevent the disease process.

Currently, many senior citizens do not believe that exercise is for them. They look at exercise as something done by adolescents and athletes. They feel they cannot see the effects of exercise and don't realize that one can slow down the aging process and increase his/her strength well into their 90's.

Many elders feel that when they have aches and pains they should rest and stay inside. In today's generation, it is becoming more known that rest is necessary for the first dew days but then one needs to regain function and

mobility to prevent atrophy of the body.

Proper education of exercise techniques is necessary to avoid injury. Strength, stretching, and balance training are mainstays of an exercise program. Strength training will help to prevent the loss of bone density and muscle mass that can lead to physical disability and weakness. When combined, strength and balance training can also significantly reduce the high risk of falls in the elderly population. Physical therapists are capable of designing and implementing these treatment plans to meet the diverse needs of elderly clients. With extensive knowledge of the aging process, disease progression, pharmacology, muscles, joints, and exercise, there is no one more qualified to educate today's aging population. These exercises are specifically designed to maximize the quality of life and functional ability of each patient. Physical therapists will help the older community reach their goals of activity and healthy living thus maintaining their clients independence.

As the aging process progresses, changes throughout the body occur. Chronic disease cannot be prevented by medications and vaccines. Common diseases of the elderly include heart disease, cancer, stroke, and diabetes. These directly correlate to what people do or do not do on a daily basis. "Eighty-eight percent of those over 65 years of age have at least one chronic health condition."<sup>1</sup> Many health behaviors lead to the development of these chronic diseases. Those include tobacco use, lack of physical activity, and bad nutrition. This is a clear sign that healthy behavior choices through community programs and education from healthcare providers are necessary in order to reduce the prevalence of chronic disease.

Three other prevalent dysfunctions that are seen in the elderly are arthritis, cancer, and impaired cardiovascular function. Arthritis is a common disability in the United States. It has been found that regular exercise reduces pain and stiffness in joints and increases strength, flexibility, and endurance. Heart disease is the leading cause of death in the United States but can be controlled by

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modifying at least one of the aforementioned risk behaviors. Following heart disease is cancer, the second most common cause of death. It is controllable through preventative techniques, education for early detection, and treatment.<sup>1</sup>

According to the CDC physical activity<sup>1</sup>:

- Lowers overall mortality
- Lowers risk of coronary heart disease
- Lowers risk of colon cancer
- Lowers risk of diabetes
- Lowers risk of developing high blood pressure. Exercise also lowers blood pressure in individuals who have hypertension.
- Lowers risk of obesity
- Improves mood and relieves symptoms of depression
- Improves quality of life and functioning
- Improves function in persons with arthritis
- Lowers risk of falls and injury
- Lowers risk of breast cancer
- Prevents loss of bone and fracture after the menopause
- Lowers risk of developing depression
- Improves quality of sleep

With aging, muscle strength and endurance decrease and fatigue increases thus putting elders at risk for falls. "In the United States, one of every three persons aged 65 years and older falls each year. Among older adults, falls are the leading cause of injuries, hospital admissions for trauma, and deaths due to injury."<sup>1</sup> Falls most often result in fractures due to decreased bone density and osteoporosis. Hip fractures are the most common. Falls are proven to be preventable with proper prevention strategies. Prevention strategies include an exercise program to increase overall strength, balance, posture, and flexibility.

As the aging process takes its course elders may experience chronic diseases, injury, and changes in mental health. The elderly population are at risk to develop arthritis, impaired cardiovascular health, cancer (colorectal and breast), diabetes, epilepsy, increased weight, and oral health problems. Incidence rates of falls and loss of balance are increasing and the number of active elders is decreasing. Increasing the strength and flexibility of the elderly will affect all systems of the body. Daily exercise

will improve balance and equilibrium, endurance, strength and flexibility, immune system response, and mental health all improving one's well being at the same time.

As stated previously, the current trend in health care is toward prevention, one of the main policies of *Healthy People 2010* written by the Surgeon General. The main goals of this document are to improve the quality and years of life as well as to eliminate health disparities. In many senior centers group aerobic and exercise classes are being offered. In gyms there are specific elder classes, as well as free blood pressure screenings in local supermarkets. Nowadays, community members have infinite number of resources available to them to find interventions that prolong healthy living. However, many don't know how simple it is to find information by asking the right questions to healthcare workers and searching the internet and books.

A daily exercise program stresses the importance of preventing the disease process (loss of strength, range of motion, and balance), thus focusing on primary prevention. Most importantly, it promotes public health which is a combination of sciences, skills, and beliefs directed towards the maintenance and improvement of the health of all people. Four overall goals of a daily exercise program are to:

1. Increase strength, mobility, endurance, and flexibility.
2. Prevent the loss of balance and falls.
3. Improve the quality and years of healthy life.
4. Attempt to eliminate possible health disparities.

Daily exercise should and must be a part of every senior citizens's weekly routine. The healthcare system will be positively impacted by promoting such a preventative program of community health and wellness. Community members specifically the ever growing geriatric population will benefit from an exercise program. The program will consist of a physical therapists exquisite knowledge of mobility, endurance, flexibility, diet/nutrition, and strength training to help the geriatric community maintain independent living. As physical therapists it is our job to present the knowledge available to create a change in individuals and the community collectively.

Activities should be selected that you enjoy doing that

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will continue each week. Below are examples of various programs that could be followed and exercises that may be performed:

Protocol 1: Moderate Level Cardio and Strengthening Therex						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
30 minute brisk walk	30 minute brisk walk	30 minute brisk walk	Weight training	30 minute brisk walk	30 minute brisk walk	Weight training
<b>Program Total: 150 minutes moderate-intensity aerobic activity 2 days strengthening activity</b>						

Protocol 2: Moderate Level Cardio and Strengthening Therex						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Weight training	45 minute brisk walk	Weight training	45 minute brisk walk	Weight training	45 minute brisk walk	Weight training
<b>Program Total: 135 minutes moderate-intensity aerobic activity 4 days strengthening activity</b>						

According to the Centers for Disease Control “Doing activity that requires moderate effort is safe for most people. But if you have a chronic health condition such as heart disease, arthritis, diabetes, or other symptoms be sure to talk with your doctor about the types and amounts of physical activity that are right for you.”<sup>2</sup>

### Works Cited

1. *Centers for Disease Control and Prevention. (2008, October 23). Retrieved November 3, 2008, from: <http://www.cdc.gov/aging/info.htm#2%20http://www.ahrq.gov/ppip/activity.html>*
2. *Centers for Disease Control and Prevention. (2008, October 23). Retrieved November 3, 2008, from: <http://www.cdc.gov/Physicalactivity/everyone/getactive/index.html>*

*For more information regarding specific exercises, please visit our website at:*

**[www.proptct.com](http://www.proptct.com)**

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