



The Balancing Act

Introduction

Building a healthy plate; eating the right amount of calories for you; and being physically active your way can help promote bone and muscle health.

Bone loss tends to increase with age. Bone loss can result in the bones becoming porous, thin and weak. Excessive alcohol intake can also increase bone loss. Muscle tends to decrease with age which can affect strength, ability to perform daily activities and ability to maintain balance, which can increase the risk of falls.

A healthful diet can help maintain and prevent bone loss and support muscle health. In addition to calcium and vitamin D, many other nutrients are needed to maintain healthy bones.

Regular physical activity, particularly weight bearing activity, also helps to maintain and prevent bone loss. In addition, physical activities that maintain or improve balance can lower the risk of falls, which can increase the risk of breaking bones. Physical activity is also essential in maintaining and building muscle.

Age-Related Bone and Muscle Changes

Aging is associated with a decline in bone and muscle mass. Throughout life, the bones are constantly changing. From birth to about age 20 to 30, the body builds bone mass faster than it breaks it down. After about age 40 to 50, the body starts to break down bone mass faster than it builds it. This is part of the natural aging process. Muscle loss can result in decreased strength. One-third of older adults experience a fall each year and falls are the leading cause of nonfatal and fatal injuries among older adults. Furthermore, many older adults who experience a fall, even if they are not injured, develop a fear of falling, which may cause them to limit physical activity. Would limiting physical activity be helpful? Decreased physical activity can actually result in decreased physical fitness which can further increase the risk of falling.

Muscle also contains a large amount of water. Approximately 75% of muscle is water. Therefore, muscle loss also results in a loss of body water. This is a problem because total body water decreases with age, resulting in a smaller margin of safety against additional body water loss.

Loss of bone mass over time can result in the bones becoming porous, thin, and weaker. This can lead to increased risk of osteoporosis. Osteoporosis is a condition where the bones become so thin and weak they easily fracture or break. What bones tend to break easily with osteoporosis? The bones that tend to break easily are in the spine, hip, and wrist. Osteoporosis is called a "silent disease." Someone may not know their bones have been losing strength for years until they break or fracture a bone. Bone fractures, particularly of the hip, and the resulting complications can have a major role in decreased independence and quality of life.

The reverse side has endurance, strengthening and balance physical activities. How can you incorporate these activities into your daily routines to maintain bone and muscle health? Attached are Oklahoma State University (OSU) Fact Sheets #T-3211: Journey Through Health: Muscles and OSU Fact Sheet #T-3212: Bones.

JOURNEY THROUGH HEALTH
Endurance, Strengthening, and Balance Physical Activities



Draw a line from each activity on the left to the type of activity you think it is on the right (endurance, strengthening, or balance)

Physical Activities

Types of Physical Activity

Brisk walking

Lifting weights

Backward walking

Dancing

Resistance bands

Sideways walking

Swimming

Calisthenics using body weight for resistance

Heel walking

Toe walking

Bicycling

Climbing stairs

Standing from a sitting position

Tennis

Heavy gardening

Tai chi

Endurance

Strengthening

Balance



Oklahoma State University, in compliance with Title VI and VII of the Civil Rights Act of 1964, Executive Order 11246 as amended, and Title IX of the Education Amendments of 1972 (Higher Education Act), the Americans with Disabilities Act of 1990, and other federal and state laws and regulations, does not discriminate on the basis of race, color, national origin, genetic information, sex, age, sexual orientation, gender identity, religion, disability, or status as a veteran, in any of its policies, practices or procedures. This provision includes, but is not limited to admissions, employment, financial aid, and educational services. The Director of Equal Opportunity, 408 Whitehurst, OSU, Stillwater, OK 74078-1035; Phone 405-744-5371; email: eeo@okstate.edu has been designated to handle inquiries regarding non-discrimination policies: Director of Equal Opportunity. Any person (student, faculty, or staff) who believes that discriminatory practices have been engaged in based on gender may discuss his or her concerns. Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Director of Oklahoma Cooperative Extension Service, Oklahoma State University, Stillwater, Oklahoma. This publication is printed and issued by Oklahoma State University as authorized by the Vice President, Dean, and Director of the Division of Agricultural Sciences and Natural Resources and has been prepared and distributed at a cost of \$24.00 for 120 copies