

Osteoporosis Treatment and Prevention: A Lifestyle Approach

by Angela Aitken, PT, DPT

Learning Objectives

Upon Completion of this course the learner should be able to:

1. List the most common sites of bone mineral density loss and describe site-specific exercises to address these areas.
2. Identify at least three risk factors for the development osteoporosis.
3. List objective measures to assess when treating a patient who is at risk of developing osteoporosis.
4. Name seven lifestyle considerations for osteoporosis prevention and treatment.
5. Describe precautions when caring for people with osteoporosis.
6. Design an appropriate physical therapy treatment plan for a patient with osteoporosis.

Introduction

Osteoporosis is defined as a metabolic disease resulting from excessive bone resorption, insufficient bone formation, or a combination of both and is a growing problem, namely among post-menopausal women.¹ There has been much research relating bone mineral density (BMD) loss to lifestyle factors, and it may be useful to consider when and how to utilize wellness strategies in conjunction with a physical therapy program for more positive outcomes. The purpose of this course is to explore various lifestyle factors involved in maintaining a healthy BMD, examine the most relevant and efficacious exercise modalities, and to understand how to apply these strategies to physical therapy programming.

Overview

The word osteoporosis is made up of two words which literally mean, “porous bones.” It is a condition in which the bones are more susceptible to fracture due to decreased mass and micro-damage to the bone structure. It may be classified as a primary condition in an otherwise healthy individual, which may be related to lifestyle factors or hormonal changes, or it may be idiopathic. Osteoporosis can also be a secondary disease as a result of other illness, dysfunction, or medication.²

Osteoporosis is the most common metabolic bone disease and affects over 10 million people in the United States alone. In addition, another 18 million Americans have been diagnosed with low bone mass, or osteopenia. These numbers are only expected to increase as the population continues to age.²

Women, especially in the postmenopausal stage, are more prone to primary osteoporosis while men are typically affected by secondary osteoporosis and at a later average age than women. The average age for men with osteoporosis is 70 years old and the range for women is between 51 and 75 years of age. However, affected men have a higher morbidity and mortality rate than women, thought to be related to the more advanced age, presence of other diseases, malnutrition, and other secondary conditions.²

Risk Factors

There are several known risk factors that predispose someone to develop osteoporosis such as sedentary lifestyle, decreased calcium intake or absorption, decreased estrogen production without hormone replacement therapy (HRT), increased age, gender (women > men), ethnicity, heredity, poor diet, low body weight, and certain medications.²

Patient Story – Maria

Maria was diagnosed with osteoporosis in 1994 after taking cortisone for 10 years for rheumatism. Though Maria says she does not live in fear, she is much more careful with how she moves than she was before her diagnosis. She is much more aware of how easily she can break and has broken several ribs after what seemed like only a small bump. However, with the help of physiotherapists, Maria, a retired weaver, is able to live a productive and relatively normal life with her conditions even though she has had to make some adjustments. Maria believes it is important to share information about osteoporosis with young people early so they can take steps to prevent it. Maria hopes that young people learn to have a healthy diet and to exercise to keep from developing osteoporosis.³

Self-Assessment Test Questions

1. Which of the following is NOT a risk factor for developing osteoporosis?
 - a. Sedentary lifestyle.
 - b. Decreased calcium intake or absorption.
 - c. Swimming daily.**
 - d. Decreased estrogen production.
2. What is one of the biggest risk factors for women to develop osteoporosis?
 - a. Increased salt intake.
 - b. Decreased estrogen production.**
 - c. Excess use of plums.
 - d. Jogging daily.

References

1. Dutton, M. (2004). *Orthopaedic Examination, Evaluation, & Intervention*. New York: McGraw-Hill.
2. Goodman, C.C., Fuller, K.S., & Boissonnault, W.G. (2003). *Pathology Implications for the Physical Therapist*. Philadelphia: Saunders.
3. International Osteoporosis Foundation (IOF). (2016). *Patient Stories*. Retrieved March 28, 2016 from <http://www.iofbonehealth.org/news-multimedia/real-stories/patient-stories>.