

NAON Position Statement: Bone Health and Osteoporosis Screening

Issue

Osteoporosis, the most common bone disorder that affects humans, is a skeletal disorder characterized by compromised bone strength, predisposing a person to an increased risk of fracture (National Institute of Health Consensus Development Panel on Osteoporosis Prevention, Diagnosis, and Therapy, 2001). Low bone mass may be due to either increased loss of bone or failure to achieve sufficient peak bone mass. The incidence of osteoporosis along with costs related to medical care and decreased functionality is rising due to an aging population and increased prevalence of risk factors. The first sign of osteoporosis is often a fragility fracture. Fragility fractures occur after a fall from a standing height, spontaneously, or a minor action such as sneezing or twisting. Fragility fractures can be in any bone, but most frequently occur in the spine, hip, and distal radius. Despite the significant morbidity, mortality, and economic consequences of osteoporosis and resultant fractures, screening and management of osteoporosis occurs in only 22.8% following a fragility fracture in postmenopausal women (National Committee for Quality Assurance, 2012). Early screening, diagnosis and treatment of osteoporosis can dramatically reduce fracture rates, generate substantial savings and improve the quality of life of millions of Americans (Dell, Greene, Schelkun, & Williams, 2008).

NAON's Position

The National Association of Orthopaedic Nurses (NAON) supports the development and implementation of programs that focus on bone health and osteoporosis related education, prevention and research. These programs can provide educational outreach to nurses, patients, and other health care providers. NAON believes that there is a gap between the evidence and osteoporosis screening, prevention, and treatment, as well as clinical practice of bone health promotion across the lifespan. It is the Organization's belief that bone health promotion and osteoporosis screening, prevention, and treatment can decrease the morbidity and mortality associated with this condition, consistent with the Healthy People 2020 objectives of reducing the proportion of adults with osteoporosis and reducing hip fractures (U.S. Department of Health and Human Services, 2013). NAON supports the nursing role within fracture liaison services to coordinate the fragility fracture care and management to prevent subsequent fractures (Ganda, 2013). NAON encourages lifestyle behavior counseling to promote healthy bones beginning with pediatrics and continuing through geriatrics. This includes the following measures to support bone health: calcium and vitamin D nutrition and supplementation, weight bearing and muscle strengthening exercise, fall prevention, smoking cessation, limiting excessive alcohol intake, and persistence with medication when prescribed. NAON recognizes the importance of risk factor assessment including secondary causes of osteoporosis (Nelson, Haney, Dana, Bougatsos, & Chou, 2010). The World Health Organization Fracture Risk Assessment Tool (FRAX) should be used as a part of the musculoskeletal assessment for those ages 40 and older to determine 10-year probability of a fragility fracture (World Health

Organization Collaborating Centre for Metabolic Bone Diseases, n.d.). Referring patients for osteoporosis diagnostic testing and treatment is part of the regime (National Osteoporosis Foundation, 2013). Additionally, fall risk assessment should be conducted along with osteoporosis screening. Furthermore, NAON supports the development of comprehensive bone health, osteoporosis and related bone disease surveillance and prevention programs. NAON confirms the need for osteoporosis prevention and treatment research to establish evidence-based nursing guidelines. Moreover, NAON recognizes these efforts are best implemented in partnership with other interested stakeholders. Consequently, NAON supports membership in The U.S. Bone and Joint Initiative and an organizational alliance with American Orthopaedic Association Own The Bone™.

Background/Rationale

Osteoporosis is a major public health concern in the United States. Approximately 52 million individuals in the United States are estimated to have osteoporosis and have low bone mass (National Osteoporosis Foundation, n.d.a). Of those that have osteoporosis, about 80% are women (National Osteoporosis Foundation, n.d.c). If the trend continues, more than 61 million or about half of all Americans over age 50 will have osteoporosis or low bone mass by 2020 (National Osteoporosis Foundation, 2006.). Optimizing peak bone mass and developing lifelong healthy bone behaviors during youth are important strategies to minimize osteoporosis risk (Ferrari, 2012). Osteoporosis has no warning signs, with the first indicator being a fracture. A fragility fracture is the greatest risk for subsequent fracture. According to the National Osteoporosis Foundation (n.d.b), an estimated two million people suffer an osteoporosis-related fracture each year. This number is projected to increase to three million annually by 2025. The societal burden and costs of osteoporosis are high and continuing to grow. The cost of treating fragility fractures in patients who were hospitalized was \$25.8 billion annually in the U.S. (United States Bone and Joint Initiative, 2011). One half of women and one-quarter of all men will suffer an osteoporosis related fracture in their lifetime. Those who sustain a fracture are more likely to have lower health related quality of life, depression, chronic pain, disability, physical deconditioning, increased long term care placement, and changes in self-image. Furthermore, vertebral fractures can result in decreased respiratory function and increased gastrointestinal complications. Twenty percent of the women and 30 percent of the men who sustain a hip fracture will die within one year of the fracture (Burge, et al., 2007). In summary, orthopaedic nurses have an important role in preventing fragility fractures. Orthopaedic nurses can significantly improve bone health promotion, osteoporosis screening, prevention, and treatment through practice in various settings, education, and research.

References

- Burge R., Dawson-Hughes, B., Solomon, D.H., Wong, J.B., King, A., & Tosteson, A. (2007). Incidence and economic burden of osteoporosis-related fractures in the United States, 2005–2025. *Journal of Bone and Mineral Research*, 22, 465–475.
- Dell, R., Greene D., Schelkun, S., & Williams K. (2008). Osteoporosis disease management: The role of the orthopedic surgeon. *The Journal of Bone and Joint Surgery*, 90-A(4), 188-94.
- Ferrari, S., Bianchi, M. L., Eisman, J. A., Foldes, A. J., Adami, S. Wahl, D. A., . . . IOF Committee of Scientific Advisors Working Group on Osteoporosis Pathophysiology. (2012). Osteoporosis in young adults: Pathophysiology, diagnosis, and management. *Osteoporosis International*, 23(12), 2735-2748.
- Ganda, K., Puech, M., Chen, J. S., Speerin, R., Bleasel, J., Center, J. R. Seibel, M.J. (2013). Models of care for the secondary prevention of osteoporotic fractures: A systematic review and meta-analysis. *Osteoporosis International*, 24(2), 393-406.
- National Committee for Quality Assurance. (2012). *The state of health care quality 2012*. Washington, D.C.: Author.

- National Osteoporosis Foundation. (n.d.a). *Bone health basics: Get the facts*. Retrieved from <http://nof.org/learn/basics>
- National Osteoporosis Foundation. (n.d.b). *What is osteoporosis?* Retrieved from <http://nof.org/articles/7>
- National Osteoporosis Foundation. (n.d.c). *What women need to know*. Retrieved from <http://nof.org/articles/235>
- National Osteoporosis Foundation. (2006). *Osteoporosis...it matters?* Retrieved from <http://nof.org/news/197>
- National Institutes of Health Consensus Development Panel on Osteoporosis Prevention, Diagnosis, and Therapy.(2001). Osteoporosis prevention, diagnosis, and therapy. *Journal of the American Medical Association*, 85, 785-795.
- Nelson, H. D., Haney, E. M., Dana, T., Bougatsos, C., & Chou, R. (2010). Screening for osteoporosis: An update for the U.S. preventive services task force. *Annals of Internal Medicine*, 153(2), 99-111.
- United States Bone and Joint Initiative. (2011). *The Burden of Musculoskeletal Diseases in the United States* (2nded.). Rosemont, IL: American Academy of Orthopaedic Surgeons.
- U.S. Department of Health and Human Services. (2013). *Healthy people 2020: Arthritis, osteoporosis, and chronic back conditions*. Retrieved from <http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=3>
- World Health Organization Collaborating Centre for Metabolic Bone Diseases. (n.d.). *FRAX[®] WHO fracture risk assessment tool*. Retrieved from <http://www.shef.ac.uk/FRAX/index.aspx>