

BONE HEALTH



Bone health plays a vital role in maintaining overall well-being and quality of life. Our bones provide structure, protect vital organs and enable movement. However, as we age, our bones can become more susceptible to conditions like osteoporosis, leading to brittle bones which can increase the risk of fractures. This article aims to provide an easy-to-understand overview of osteoporosis, including its causes, risk factors, symptoms, diagnosis, treatment options, and prevention through lifestyle changes.

CAUSES AND RISK FACTORS:

Osteoporosis, the most common bone disease, is defined as having a low bone mass and is in essence a disruption of the normal bone structure.

A low bone mass leads to fragile, brittle bones with a decreased bone strength, increasing the risk of developing fractures following minor trauma. In severe cases, bones can break (or fracture) during normal activity even in the absence of trauma.

Bones are living tissues and are constantly being formed and absorbed by specialised bone cells. This process involves complex metabolic processes, which is dependent on adequate levels of vitamin D and calcium specifically. An imbalance between bone forming cells (osteoblasts) and bone absorption cells (osteoclasts) can cause a low bone mass.

Several factors contribute to the development of osteoporosis, including advanced age, gender (woman more than men), ethnicity (a higher risk in Caucasians), family history (e.g., a parent with a history of hip fractures), low body weight, hormonal changes (such as menopause), inadequate calcium and vitamin D intake, sedentary lifestyle, smoking, excessive

alcohol consumption, and certain medications (e.g., steroids). By understanding these risk factors, individuals can take proactive steps to protect their bone health.

Osteoporosis can be primary or secondary. Primary osteoporosis, which includes postmenopausal and age-related osteoporosis, is typically seen in older adults. Secondary osteoporosis occurs due to underlying medical conditions or medications that adversely affect bone density. These conditions may include hormonal disorders, gastrointestinal disorders, rheumatoid arthritis, and certain cancer treatments. It is crucial to identify the specific type to determine the most appropriate treatment approach.

SYMPTOMS:

Osteoporosis is often referred to as a “silent disease” because it usually progresses without noticeable symptoms until a fracture occurs. Common fractures associated with osteoporosis include those of the hip, spine, and wrist. Some individuals may experience gradual height loss, stooped posture, back pain, and a decrease in overall mobility due to so-called fatigue fractures in the spine. It is important to recognize these signs and seek medical attention promptly.

DIAGNOSIS:

To diagnose osteoporosis, healthcare professionals employ a variety of tests, the most common being dual-energy X-ray absorptiometry (DXA) scans. DXA scans measure bone mineral density (BMD) and compare it to the average peak bone mass of a healthy young adult. This measurement is represented as a T-score, which helps classify bone health as normal, osteopaenic (low bone mass), or osteoporotic. Additional tests may be ordered to rule out secondary causes and evaluate fracture risk.

TREATMENT:

The treatment of osteoporosis aims to prevent fractures, relieve pain, and improve bone density. It often involves a multi-faceted approach, including lifestyle modifications and medication. Calcium and vitamin D supplementation are essential for maintaining bone health. Weight-bearing exercises and resistance training help strengthen bones and improve balance. Medications, such as bisphosphonates or selective oestrogen receptor modulators (SERMs) may be prescribed to increase bone density and reduce fracture risk.



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PREVENTION AND LIFESTYLE CHANGES:

Prevention is key in maintaining optimal bone health throughout life. Start by consuming a balanced diet rich in calcium and vitamin D. Good sources of calcium include dairy products, leafy greens, and fortified foods. Adequate exposure to sunlight helps the body produce vitamin D naturally. Engage in regular weight-bearing exercises like walking, jogging, dancing, or weightlifting, which promote bone strength. Minimize alcohol consumption, quit smoking, and avoid excessive caffeine intake. Regular screenings and proactive management of underlying conditions can also reduce the risk of developing osteoporosis.

In conclusion, understanding bone health is crucial to prevent the development of osteoporosis and maintain a healthy and active lifestyle. By recognizing the causes, symptoms, and risk factors associated with osteoporosis, individuals can take proactive steps to protect their bone health. Early diagnosis through bone density tests allows for timely intervention and appropriate treatment options. Embracing a balanced diet, regular exercise, and healthy lifestyle choices are essential in maintaining strong and resilient bones throughout life.

Please note: this is an education information leaflet only and should not be used for diagnosis. For more information on **Bone Health**, consult your healthcare professional.

References: 1. National Osteoporosis Foundation. (n.d.). What is osteoporosis and what causes it? Retrieved from <https://www.nof.org/patients/what-is-osteoporosis/> 2. Mayo Clinic. (2021). Osteoporosis. Retrieved from <https://www.mayoclinic.org/diseases-conditions/osteoporosis/symptoms-causes/syc-20351968> 3. American Academy of Orthopaedic Surgeons. (2017). Osteoporosis. Retrieved from <https://orthoinfo.aaos.org/en/diseases-conditions/osteoporosis/> 4. International Osteoporosis Foundation. (n.d.). Diagnosis of osteoporosis. Retrieved from <https://www.iofbonehealth.org/diagnosis-osteoporosis> 5. National Institute of Arthritis and Musculoskeletal and Skin Diseases. (2021). Osteoporosis overview. Retrieved from <https://www.bones.nih.gov/health-info/bone/osteoporosis/overview>

