

Bone Health: A Firm Foundation

By Woodland Publishing, Inc.

A building with a weak foundation is structurally unsound, and so is a body with a weak musculoskeletal system. According to the National Institute of Arthritis and Musculoskeletal and Skin Diseases, 10 million Americans suffer from osteoporosis, a condition of weakened bones, and more than 46 million Americans suffer from arthritis or other rheumatic conditions, which affect the joints. Both conditions are associated with age, but neither is inevitable—support your bones and joints now, and they'll support you for the rest of your life.

Healthy bones are key to a healthy musculoskeletal system. The skeleton acts as a bank for essential minerals. When withdrawals exceed deposits, bones lose density and break more easily. Most people achieve peak bone mass in their late teens or early twenties. As we grow older, the mineral stores in our bones slowly diminish.

Use It or Lose It

The National Osteoporosis Foundation reports that osteoporosis is a major health threat for an estimated 55 percent of Americans over the age of 50—nearly 44 million people! Many factors increase the risk of osteoporosis. Unmodifiable risk factors for osteoporosis include age, gender and race. Osteoporosis is most common among elderly people. Women are much more susceptible to osteoporosis than men. White people have the greatest risk of osteoporosis and black people have the lowest risk. Modifiable risk factors for osteoporosis include smoking, obesity, poor nutrition and lack of weight-bearing exercise.

A balanced diet rich in bone-healthy nutrients can help children and adolescents achieve optimal bone mass, reducing the risk of osteoporosis later in life, and may help adults maintain healthy bone density.

Calcium's role in bone health is well established, but according to Shreyasee Amin, MD, a rheumatologist at the Mayo Clinic, "Most people still aren't getting enough calcium in their diets." In addition to eating calcium-rich foods such as dairy products, fortified cereals and orange juice, broccoli, kale and tofu, people can increase their calcium intake with supplements. Calcium supplements are best absorbed in several small doses (no more than 600 milligrams) throughout the day. The Institute of Medicine has established 2,500 milligrams per day as the safe upper limit for calcium—any more may cause adverse effects.

Vitamin D is necessary for calcium absorption. Some foods—such as fatty fish, fortified milk and fortified orange juice—contain vitamin D, but sun exposure is the primary source of the vitamin. Many people, especially those who have dark skin, who live in areas with low sun exposure or who spend little time outside, may need to take vitamin D supplements, which are available as vitamins D₂ and D₃. When possible, choose vitamin D₃. "Vitamin D₃ seems to be about three times as potent as vitamin D₂," said John Schousboe, MD, director of the Park Nicollet Clinic Osteoporosis Center in Minnesota.

Physical activity is essential to bone health. Low-impact, weight-bearing physical activities such as walking, rowing and low-impact aerobics stress the skeleton and stimulate bone growth. High-impact activities such as jogging, weight lifting, gymnastics and skiing stimulate bone growth even more. Non-impact activities such as swimming and yoga do not directly benefit bone health. According to a 2004 report from the office of the surgeon general, weight-bearing activity twice a week, combined with daily physical activity, is enough to promote bone health for most people.

Managing Osteoarthritis

The junction between two bones is called a joint. Like bones, joints can weaken over time. The Arthritis Foundation reports that one in five American adults suffers from arthritis, or joint inflammation. There are more than 100 types of arthritis, but the most common is osteoarthritis, or degenerative joint disease, which occurs when the cartilage in joints wear out. Without healthy cartilage, the bones that form the joint rub together, limiting motion and causing pain and swelling. Over time, joints may deform and bone spurs may develop. By taking a few simple steps, people can prevent osteoarthritis or slow its progression.

Achieving a healthy body weight takes pressure off the joints. According to WebMD, one pound of body weight adds at least three pounds of stress to the knees. Resources from the National Institutes of Health report exercise can improve joint health. And in 2004, researchers at the Claude D. Pepper Older Americans Independence Center in North Carolina reported that weight loss and exercise together improved joint function and decreased pain in obese patients with osteoarthritis in the knees.

Among the most well-known supplements for osteoarthritis are glucosamine and chondroitin sulfate, two natural components of cartilage. According to the Glucosamine/Chondroitin Arthritis Intervention Trial, published in 2006 in the *New England Journal of Medicine*, a combination of glucosamine and chondroitin sulfate provided significant relief to a subgroup of osteoarthritis patients experiencing moderate-to-severe pain.

SAM-e (S-adenosylmethionine) is used as a prescription treatment in Europe and is available as a supplement in the United States. In 2002, the Agency for Healthcare Research and Quality, part of the United States Department of Health & Human Services, published a report on the available research on the efficacy SAM-e for osteoarthritis and other conditions. According to the report, SAM-e was as effective for reducing osteoarthritis pain as non-steroidal anti-inflammatory drugs (NSAIDs) such as aspirin or ibuprofen.

Osteoporosis and osteoarthritis often occur with age, but they are *not* part of the normal aging process. With a healthy lifestyle, proper nutrition and a few key supplements, you can keep your bones and joints healthy throughout your life. If you already suffer from these conditions, the same steps can halt the damage and improve your quality of life.