Osteoporosis

Osteoporosis is a bone disease where parts of the bone become weak and prone to fracture. This condition is more common in seniors, but can affect men and women of all ages. Osteoporosis is responsible for a large number of bone fractures that occur in seniors, as the weakened bones can no longer support their body weight.

At least 2 million Canadians have osteoporosis. While men also develop osteoporosis, this condition is particularly common among women who have reached menopause. Because women have 30% less bone mass than men, women are particularly prone to osteoporosis as they age. However, by the age of 65 to 70 years, men and women lose bone at about the same rate. Eating foods rich in calcium and vitamin D and participating in weight-bearing exercises are important steps in preventing osteoporosis.

Bone is made up mostly of minerals such as calcium. The bones in our bodies are constantly being broken down and replaced with new bones. This bone-building cycle takes about 100 days and is influenced by the hormones produced in our bodies as well as by the levels of calcium and vitamin D. Osteoporosis occurs when bone tissue and minerals are lost faster than the bone is replaced.

There are two main types of osteoporosis. Primary osteoporosis occurs most commonly in women after menopause. Osteoporosis affects twice as many females over the age of 70 years as males in the same age group. Secondary osteoporosis can affect young and middle-aged people as well. It may be caused by:

- Medications such as corticosteroids
- Chronic illnesses
- Too much exercise - women who exercise excessively may lose their menstrual cycle and the normal production of estrogen by the ovaries may stop

Factors that may increase the risk of osteoporosis include:

- A drop in estrogen after menopause: The rate of bone loss increases significantly after menopause because the ovaries stop producing estrogen, a hormone that plays a major role in the bone repair process. Female athletes and women who suffer from anorexia nervosa may also be at increased risk for osteoporosis. In both cases, the menstrual cycle is disrupted or lost and levels of estrogen in the body drop dramatically. Women who experience early menopause (before the age of 45 years) are more likely to have osteoporosis.
- Family history and body type: Osteoporosis tends to run in families, and the risk of this condition is greater for individuals with elderly relatives who have had a bone fracture, especially if it is a parent who has had a hip fracture. People of European and Asian descent are most at risk. People who are thin or "small-boned" also have a higher risk of osteoporosis. People who have had a fracture in the vertebrae are also at increased risk.
- Lifestyle factors and health conditions: Lifestyle factors such as smoking and excessive drinking, taking specific medications (such as corticosteroids), and having certain medical conditions may also contribute to bone loss. People with type 2 diabetes are more likely to suffer a hip or shoulder fracture than those without diabetes.
- Lack of exercise: Bones need to be used daily in order for them to stay healthy. People who are physically active are less at risk of developing osteoporosis, as their bones are stronger and less likely to lose strength with age. By contrast, a person who is bedridden or inactive for a lengthy period of time loses bone mass very quickly and is at high risk of osteoporosis.
- Lack of calcium: Children, adolescents, and adults need to eat the recommended amounts of vitamins and minerals. Calcium and vitamin D are very important in the maintenance of healthy and strong bones throughout life and in the prevention of osteoporosis.

Osteoporosis itself does not usually cause noticeable symptoms. However, weakened bones that are no longer able to support body weight can break even under slight pressure. Such fractures most commonly occur in the hipbones,

wrists, or spine. Hip fractures are more frequent in people over the age of 75 years. Some fractures caused by osteoporosis, such as hairline breaks in the spine, may cause little or no pain and may go unnoticed, even when they show up on an X-ray. By contrast, spinal crush fractures, where the vertebral column crumbles or collapses, are much more painful and can lead to deformed posture. Another symptom caused by osteoporosis is chronic back pain. This pain can worsen even with the slightest movements such as regular activities around the house, or while coughing, laughing, or sneezing or may be present when standing still.

The key steps to diagnosing osteoporosis involve assessing the risk for fracture and evaluating bone density. The presence of risk factors (such as being over 65 years of age or previous history of breaks or fractures) and low bone density results will likely result in a diagnosis of osteoporosis. If your doctor decides that you require medication to treat osteoporosis, bone mineral density testing may be conducted every 1 to 3 years to see if the therapy is working. Once the medication is shown to be effective, you may not need to be tested as often. Testing may also be repeated to monitor for rapid bone loss in people who are not started on medications for osteoporosis but are at risk for developing the disease.

Treatment of osteoporosis is aimed at preventing or reducing bone fractures and maintaining or increasing bone density. There are several treatments for osteoporosis, but prevention is still very important. A regular intake of calcium and vitamin D is of paramount importance for the maintenance of good bone strength. Osteoporosis Canada recommends 1,000 mg of elemental calcium daily for men and women between the ages of 19 and 50 years, and 1,200 mg for men and women over the age of 50 years. They recommend vitamin D in daily doses of 400 IU to 1,000 IU for adults without osteoporosis under 50 years of age, and 800 IU to 2,000 IU for both adults over the age of 50 and people with osteoporosis to help increase calcium absorption in the bones. Higher doses over 2,000 IU require medical supervision. Osteoporosis Canada also recommends regular weight-bearing exercises and a healthy lifestyle with no smoking or excessive intake of alcohol. Weight-bearing exercises (such as walking, weight training, or climbing stairs) play a role in strengthening bones and preventing fractures. Posture and balance can be improved through exercise and can significantly reduce the risk of bone fractures. There are several medications that can be used to treat osteoporosis. Many of these treatments may also be used to prevent osteoporosis for people who are at high risk of developing it. Speak to your doctor or pharmacist to determine if these medications are right for you.

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