Bone Health

- Osteoporosis
- Arthritis

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Osteoporosis 101

Your bones form the structure and framework of your body. Bones continually undergo a process called remodelling. During this process, older, weaker bone is dissolved and rebuilt into new bone tissue, which helps to ensure healthy, strong bones throughout the body. As we age, the rebuilding process slows down and our bones can become fragile. In some individuals, this leads to osteoporosis. This condition is characterized by low bone density and deterioration of bone tissue, resulting in a greater risk of fractures, especially in the hips, spine and wrists.

Why should I care?

When talking about the development of children, we frequently refer to the need for them to develop "strong bones." The reality is that it takes a lifelong commitment to ensure that your bones remain in good shape well into your later years.

Osteoporosis is silent. It does not present any obvious symptoms until a bone fracture occurs. A bone fracture can have a significant impact on your life, making prevention and monitoring very important.

One in four women and one in eight men over the age of 50 have some degree of osteoporosis. Given these statistics, it is important for you to assess your risk and consider taking preventative measures to reduce your chance of developing osteoporosis.

Who is at risk?

Canadian guidelines have been established to assess risk factors for osteoporosis. Women who have reached menopause (and men over the age of 50) who have at least one major or two minor risk factors should be assessed for osteoporosis through appropriate bone density testing.

The likelihood that an individual will suffer a fracture due to osteoporosis is most strongly associated with the following factors:

- Low Bone Mineral Density (BMD) based on test results
- Prior fracture from a low-trauma incident
- Age – the greater the age, the greater the risk
- Family history – having a family member (especially a mother) who experienced an osteoporotic fracture.

If you have concerns about developing osteoporosis, talk to your doctor. If a risk is identified, a bone scan test is available to measure your Bone Mineral Density, which is the best way to determine if you have osteoporosis. Based on your risk and current bone strength, your doctor can determine if any treatments are required. The goals of any treatment plan are to prevent fractures and to maintain or increase bone density.

Major Risk Factors
Age greater than 65
Compression fracture of the spine
A low trauma fracture after age 40
Family history of osteoporotic fracture
Long-term use (more than 3 months) of a glucocorticoid (e.g., Prednisone)
Conditions that inhibit the absorption of nutrients (e.g., Celiac or Crohn's disease)
Primary hyperparathyroidism
Having a tendency to fall
A loss in height greater than 4 cm from lifetime maximum (usually accompanied by a curving of the spine, known as kyphosis)
Reduced bone density (osteopenia) seen on an x-ray
Hypogonadism (low levels of sex hormones)
Early menopause (before age 45)

Minor Risk Factors
Rheumatoid arthritis
Past history of hyperparathyroidism
Long-term use of medications to treat seizures
Low dietary calcium intake
Smoker
Alcohol intake routinely greater than 2 drinks per day
Consumption of more than 4 caffeinated drinks per day
Weight less than 57 kg (125 lbs)
Current weight more than 10% below weight at age 25

What YOU can do!

TRY TO

- Get regular exercise. Exercise, especially weight-bearing activities, helps to strengthen bones and contributes to an overall healthy lifestyle.
- Expand your activities to include those that help improve balance and flexibility (e.g., yoga or Tai Chi). An improvement in balance can significantly reduce the risk of a bone-fracturing fall.
- Eat a "healthy bone" diet. To remain strong, your bones need a good supply of calcium and vitamin D. Refer to the nutrition section for specific daily requirements.

AVOID

- Or reduce the consumption of products that can increase your risk of osteoporosis. Consuming more than 2 alcoholic drinks per day or more than 4 caffeinated drinks per day increases your risk of developing osteoporosis.
- Smoking. Cigarette smoking has been shown to increase your risk of developing osteoporosis. To help you quit, speak with your health care professional about your options
- Risky movements that could lead to a fall. Try to adapt your living environment and lifestyle to reduce the chance of a fall.

Nutrition

Your diet plays a big role in keeping your bones and joints strong. In addition to a well-balanced diet, it is essential to ensure that you are getting an adequate daily supply of calcium and vitamin D.

Calcium is a vital element in the functioning of our bodies. If your body does not take in enough calcium, it is forced to remove this mineral from its primary storage place your bones. This can lead to weakening of your bone structure.

Vitamin D plays an essential role in helping your body to absorb and use calcium.

DAILY DIETARY REQUIREMENTS FROM ALL SOURCES	
Calcium	**Vitamin D***
1,000 mg per day (for men under the age of 50) and for premenopausal women **1,500 mg per day for men over the age of 50 and for postmenopausal women**	**400 IU per day for anyone under the age of 50** **800 IU per day for anyone over the age of 50** ***In 2007 the Canadian Cancer Society recommded that all Canadians consider taking 1,000 IU daily, at least during the fall and winter months.***

Dietary Source of Calcium	
Food	**Approximate Calcium Content**
Milk 250 mL (1 cup)	300 mg
Cheese (cheddar) 3 cm cube	245 mg
Yogourt (plain) 185 mL (3/4 cup)	295 mg
Ice Cream 125 mL (1/2 cup)	80 mg
Cottage Cheese 125 mL (1/2 cup)	75 mg
Canned Salmon (with bones) 105 g	240 mg
Fortified Rice or Soya Beverage 250 mL (1 cup)	300 mg
Fortified Orange Juice 250 mL (1 cup)	300 mg
Cooked Broccoli 185 mL (3/4 cup)	50 mg
Orange 1 regular size	50 mg
Bread (whole wheat) 2 slices	40 mg

Dietary Source of Vitamin D	
Food	**Approximate Vitamin D Content**
Milk 250 mL (1 cup)	100 IU
Fortified Rice or Soya Beverage 250 mL (1 cup)	80 IU
Fortified Orange Juice 250 mL (1 cup)	451 IU
Atlantic Salmon (cooked) 75 g	225 IU
Sockeye Salmon (canned or cooked) 75 g	608 IU
Pacific Sardines (canned) 75 g	360 IU

It can be hard to obtain enough calcium and/or vitamin D through diet alone. Taking a calcium and a vitamin D supplement can help ensure an adequate daily intake. Talk to your pharmacist to learn more about the best option for you.

Arthritis 101

The meaning of the term arthritis is "joint inflammation." Although the term is often used to describe stiffness and pain in a joint, there are over 100 unique conditions. The 206 bones in our bodies are fastened by joints to form our skeleton. The basic structure of these joints is the same. Two bones are tied together with ligaments and the connecting bone surfaces are covered in a tough elastic "shock absorber" material called cartilage. The space between the bones is enclosed within a flexible capsule. The inner lining of this capsule, called the synovial lining, produces a thick liquid (synovial fluid) that lubricates and nourishes the joint. Swelling in the joint structure can lead to pain and possible damage in the joint, which is what we refer to as arthritis.

What causes arthritis?

Age is the major factor in the most common type of arthritis - osteoarthritis. As we get older, our joints start to wearout. Previous trauma to a joint can also cause symptoms to appear earlier in life. However, arthritis is not limited to the elderly. Some types occur in young children (e.g., juvenile arthritis) and others appear in middle-aged adults (e.g. rheumatoid arthritis). Some are temporary conditions, while others can cause lifelong pain and disability. With so many variations of the condition, its true causes are not really known. Fortunately, various treatments are available to help you manage the condition.

Common over-the-counter products for arthritis:

- **Acetaminophen** – Often a first choice in the management of arthritis pain, it provides adequate relief for many individuals and is usually well tolerated.
- **Topical agents** – Some of these products contain anti-inflammatory ingredients and others provide cooling or warming sensations. Although these products are not a treatment option for arthritis, they can provide effective, temporary pain relief.
- **Anti-inflammatory medications** – These products provide effective relief of joint pain by reducing swelling and pressure in the joint. They may not be tolerated by some individuals and are associated with certain risks if taken long term.
- **Glucosamine, Chondroitin, MSM** (as individual supplements, or in combination) – These products are components found within the structure of our joints. Taken as a supplement, they are intended to reduce pain and inflammation and slow the progress of the condition. Although some individuals report positive results after taking these products, current medical information is not sufficient to determine their effectiveness in the overall management of arthritis.

Arthritis Tip

If you have joint pain, stiffness or swelling for more than two weeks, see your doctor for an assessment.

What YOU can do!

TRY TO

- Maintain a healthy body weight. Carrying excess weight adds to the stress on your joints. Mild arthritis symptoms can sometimes be relieved through weight loss alone.
- Ensure that stretching exercises are included in your regular physical activity routine. Stretching helps to keep the muscles and tendons around your joints flexible and strong.
- Learn as much as you can about your type of arthritis. Understand how the condition is affecting you and what your treatment goals are. Seek support from other individuals or organizations to help you live with your condition as well as you can

AVOID

- Repetitive, strenuous activities that involve affected joints. If unavoidable, pace yourself by mixing heavy activities with lighter ones to allow tired muscles to recover. Try to vary your movements to involve different joints and muscle systems.
- Massage therapy treatments to inflamed joints. Massage helps to relieve muscle tension by increasing blood flow, which could actually cause further damage to injured joints.
- Applying heat to painful joints. Heat increases blood flow, which can worsen inflammation. Try applying a cold compress instead.

Stay informed

If you are looking for further information about osteoporosis or arthritis, talk to your health care provider. Further information can also be found through the following resources:

Osteoporosis Canada
www.osteoporosis.ca
1-800-463-6842

The Arthritis Society
www.arthritis.ca
1-800-321-1433

References:
Osteoporosis Canada, www.osteoporosis.ca
The Arthritis Society, www.arthritis.ca
Hanley, David A. "Osteoporosis." In: e-therapeutics. Canadian Pharmacists Association, 2009.

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