

Joint Health

Every day is filled with movement. From the time you wake up and shower until the evening when you make dinner and go to bed, your body is constantly moving. For many of us, this movement isn't given much thought. However, for some people, the simple act of getting out of bed or making coffee can be painful due to a disorder of their joints.

Your body is a complex system of muscles and bones which work together to coordinate movement. The place where two bones meet is called a joint. While some joints in your body allow no movement (e.g., the bones in the skull), there are approximately 230 movable and semi-movable joints in the human body. These joints are grouped into the following two types:

- Movable (synovial) – allows for the greatest range of movement (e.g., knee, shoulder, hip). These joints include six different types (i.e., hinge, saddle, ball and socket, ellipsoid, pivot, and gliding) based on the type of movement they perform. These joints contain small sacks of synovial fluid which help lubricate the joint and help protect the ends of the bones by providing cushioning.
- Semi-movable (cartilaginous) – allows very little movement (e.g., spine, ribs).

We don't pay much attention to our joints when they're working well and are pain-free. Unfortunately, for many of us, this isn't the case. Long-term musculoskeletal pain is a major health problem. Chronic pain in the musculoskeletal system is reported by 35–50% of the adult population (Bergman, 2007).

A common cause of musculoskeletal pain is inflammation (i.e., swelling). When an injury or an internal stress is detected by your body, white blood cells and other helpful proteins are rushed to the site to promote the healing process. In this case, acute (i.e., short-term) inflammation is a way the body heals. When inflammation is chronic (i.e., long-term), the body sends different types of cells to the site, which can cause damage to the area. When inflammation occurs in the joints, any movement can be painful.

How much does this pain cost? In 2009, musculoskeletal diseases (MSDs) were the most costly medical condition, estimated at \$26.6 billion. From lost economic productivity (i.e., short and long term disability), to the cost of hospital stays, health care professional visits, and drugs, MSDs have a major impact on society (Canadian Orthopaedic Care Strategy Group, 2010). It's important to take any possible steps to protect yourself from these problems.

The health of your joints is important to your overall health and well-being. Many lifestyle factors can help keep joints healthy and prevent some pain and disorders. Read on to find out more about the most common joint disorders and what you can do to prevent pain and problems.

PERSONAL HEALTH GUIDE SMART STEPS TO LIVE LONGER



TEST YOUR KNOWLEDGE

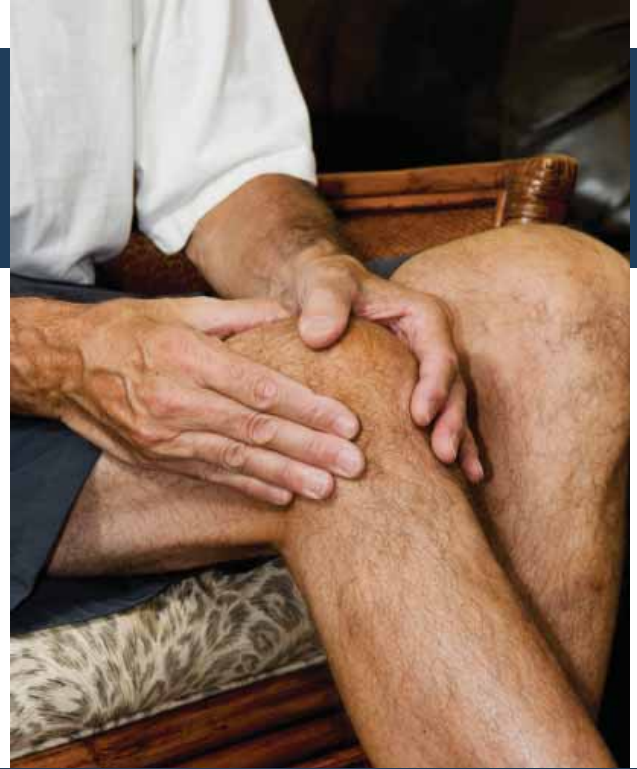
1. Arthritis affects approximately 16% of the population. (T/F)
2. Cartilaginous joints provide the most movement. (T/F)
3. Working in an awkward position can cause a repetitive strain injury. (T/F)
4. Omega-6 fatty acids can reduce inflammation in your joints. (T/F)
5. The fluid found in your joints is called synovial fluid. (T/F)
6. Obesity is a risk factor for osteoarthritis. (T/F)

Answers located on back page.

WHY is it important to keep your joints healthy?

Without joints, you wouldn't be able to move your body. While bones provide the framework of your body, joints allow movement, support the weight of your body, and absorb shock (e.g., when you run, your joints absorb the shock of your foot hitting the pavement). This is done with the help of cartilage (i.e., a protein found on the ends of the bones) and synovial fluid (i.e., the fluid found in between the bones of a joint).

Even though bones and joints are strong, overuse and excess stress can cause them to break down. Unhealthy joints are unable to meet the demands put on them, limiting your ability to be active and enjoy life. Experiencing joint pain while doing your favourite activities can limit your ability to be active, which may lead to further joint and health problems. Unhealthy joints can eventually lead to difficulties with balance and gait (i.e., walking patterns), increasing the likelihood of falls and serious injury.



WHAT are the most common joint health issues?

There are a wide range of musculoskeletal conditions, but the most common involve inflammation (e.g., arthritis, repetitive strain injury).

Arthritis is a disease which affects the joints through inflammation, stiffness, and pain. It can affect all people, but is most common in elderly populations, due to many years of wear and tear on the joints. There are over 100 types of arthritis. Osteoarthritis and rheumatoid arthritis are two conditions with the greatest impact on population health. Arthritis affects approximately 16% of the population (Statistics Canada, 2006).

Repetitive strain injury (RSI) refers to a group of disorders which occur from performing repetitive movements, working in an awkward position (i.e., poor posture), or working with few breaks when performing repetitive motions. These injuries develop over an extended period of time and commonly include inflammation of tendons (i.e., the tissue connecting bones).

DISORDER	SIGNS & SYMPTOMS	IMPACT	RISK FACTORS	TREATMENT
Osteoarthritis (OA)	Cartilage on the end of the bones breaks down, causing joint damage, pain, and stiffness. Typically affects the spine, hands, hips, and knees.	The most common type of arthritis, affecting 10% of Canadian adults.	Old age, obesity, previous joint injury.	Aimed at decreasing pain and improving function. Usually includes exercise, physiotherapy, and anti-inflammatory medication.
Rheumatoid Arthritis (RA)	The body's immune system attacks the joints leading to pain, inflammation, and damage. Typically affects the hands and feet.	The second most common type of arthritis, affecting 1% of Canadian adults.	Heredity, race (especially in Aboriginal Peoples).	Aimed at preventing joint damage. Usually includes anti-inflammatory medication and corticosteroids.
Repetitive Strain Injury (RSI)	Discomfort or persistent pain in the muscles, tendons, joints, and other soft tissues due to inflammation. Typically affects hands, elbows, shoulders, and back.	10% of Canadian adults reported having a RSI which limited their usual activities.	Performing repetitive movements or working in awkward positions for long periods of time.	Rest, therapeutic exercises, braces, and medication (i.e., anti-inflammatory medications). Altering the home or work environment to avoid strain and allow rest.

HOW can joint problems be prevented?

There's no way to guarantee that you won't experience joint problems during your life. However, there are things you can do to improve the health of your joints and reduce the likelihood that you'll experience joint problems. The things you can do include: being physically active, eating well, reaching and keeping a healthy body weight, limiting or not drinking alcohol, and not smoking.

Physical Activity

Regular physical activity can promote joint health. Strength training can help build muscle around a joint which can help support the joint and extend the function and movement of the joint. Physical activity is an important part of reaching and keeping a healthy body weight. Being at a healthy weight reduces any added stress on your joints. Following *Canada's Physical Activity Guide* will improve your overall health and well-being, as well as the health of your joints. Adults should aim to achieve a minimum of 150 minutes of moderate to vigorous physical activity per week.

Physical activity has been shown to reduce arthritis pain, improve function, reduce disability, and improve independence (Der Ananian et al., 2008). Despite these benefits, many people with arthritis are inactive.

For anyone with joint problems, flexibility, strength training, and light aerobic activity should be included in a physical activity plan. If loss of balance and a fear of falling is a concern when being active, aquatic exercise is safe and removes stress from the joints. It has also been shown to reduce risk factors for falls (e.g., imbalance, poor walking performance) in patients with osteoarthritis (Arnold & Faulkner, 2010).

Healthy Eating

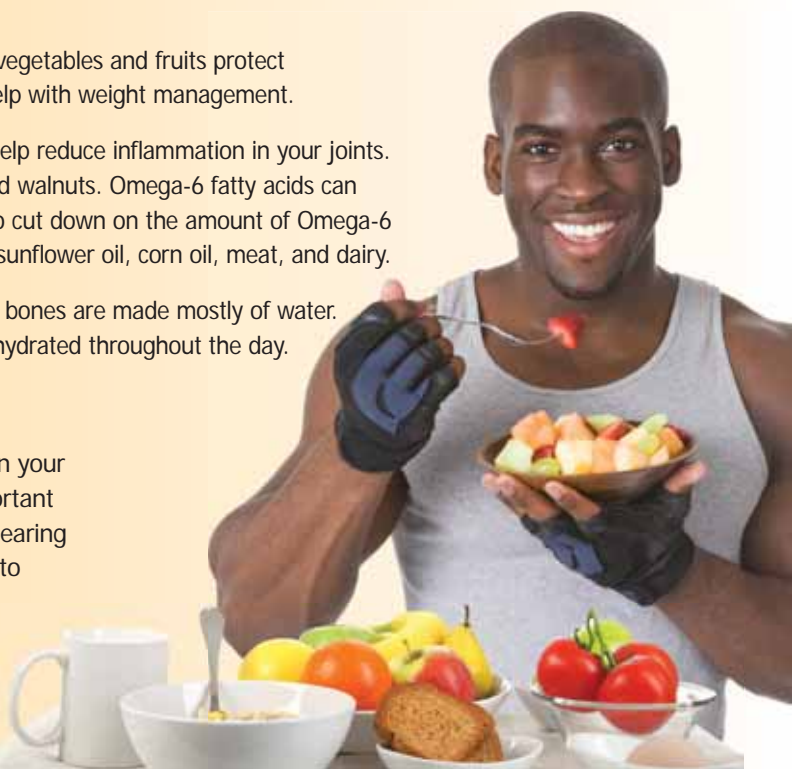
A balanced, healthy meal plan is another way to prevent joint problems. It can help reduce inflammation in swollen joints. What, when, how much, and how often you eat is also important in reaching and keeping a healthy body weight.

Following *Canada's Food Guide* will help you meet your daily needs of vitamins, minerals, and other nutrients for overall health and well-being, and will give you enough energy to be active, reducing your risk of other chronic health problems. Here are some key healthy eating tips to remember for joint health (The Arthritis Society, 2008):

- **Choose fats wisely.** The right amount and types of fats can lower your risk of developing arthritis and decrease inflammation. Include a small amount of unsaturated fats (e.g., corn oil, olive oil) and limit saturated (e.g., those found in meat and dairy) and trans fat (e.g., processed foods such as crackers and cookies).
- **Reduce sugar intake.** The empty calories in sugar can lead to weight gain, adding stress to your joints. Snack on raw vegetables or fruit to cut back on sugar.
- **Eat more vegetables and fruits.** Antioxidants found in brightly coloured vegetables and fruits protect joints and reduce inflammation. The fibre in vegetables and fruits will help with weight management.
- **Balance your Omega-3 and Omega-6 intake.** Omega-3 fatty acids can help reduce inflammation in your joints. These fats are found in coldwater fish (e.g., salmon, trout), flaxseed, and walnuts. Omega-6 fatty acids can increase inflammation in your joints. For this reason, it may be helpful to cut down on the amount of Omega-6 in your diet if you have inflammation. Omega-6 fatty acids are found in sunflower oil, corn oil, meat, and dairy.
- **Stay hydrated.** Synovial fluid and the cartilage found on the end of your bones are made mostly of water. To protect your joints and keep them working properly, be sure to stay hydrated throughout the day.

Healthy Body Weight

By following the physical activity and healthy eating guidelines, you'll be on your way to reaching or keeping a healthy weight. This is one of the most important factors in joint health. Being overweight puts an extra burden on weight-bearing joints (e.g., back, hips, knees) in people without joint problems and leads to further damage or pain in people with joint diseases. For example, every extra pound you carry adds up to three pounds of pressure on your knee joints when you walk, and 10 pounds when you run. In the simplest terms, you need to burn more calories than you take in over time to reach and keep a healthy body weight.



Make it Happen at Your Workplace

Here are some suggestions for your workplace to promote bone and joint health:



- Create a team to participate in fundraising events for arthritis (e.g., Joints in Motion Team, Walk to Fight Arthritis).
- Host weight loss classes to encourage employees to reach and keep a healthy body weight.
- Create and implement a healthy eating policy which encourages healthy meals and snacks at meetings and events such as fruit, vegetables, low fat yogurt, and 100% fruit juice or water.
- Start a physical activity break. Get your co-workers moving during breaks or lunch by going for a walk or climbing the stairs.
- Host lunch and learns on bone and joint health. Speakers could include people living with joint problems, arthritis specialists, or an orthotics specialist.
- Provide information on proper footwear and equipment for physical activity, orthotics, braces, and joint health.



TREATMENT OPTIONS: Joint Replacement

Joint replacement surgeries are becoming more common for treatment of joint diseases. In fact, in 2007, the number of knee and hip replacements increased by 28% and 11% respectively (Canadian Institute for Health Information, 2008). In replacement surgeries, arthritic or damaged joints are replaced with an artificial joint (i.e., prosthesis). With this medical technology, people are able to regain their mobility and independence; however, recovery time can be lengthy. The patient may have some function a few weeks after surgery, but full recovery can take months. Replacement surgeries are most common for people with OA of the knee or hip.

Key References:

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WEBSITES & RESOURCES

The Arthritis Society
www.arthritis.ca

Canadian Orthopaedic Foundation
www.canorth.org

Bone and Joint Decade Canada
www.boneandjointcanada.com

My Joint Replacement
www.myjointreplacement.ca



Answers from front page
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