



Healthy Living

Patient Information from the American Chiropractic Association

Promoting Joint Health and Preventing Muscle Cramps

Human joints allow us to move and carry out normal activities of daily living. Without joints, we would be immobile. But joints often get injured. The most vulnerable ones are the knees, shoulders, ankles and spine.

How do joints work?

Each joint is made up of at least two surfaces that touch each other and allow for movement. These include ball-and-socket joints such as the hip; hinge joints such as the knee and elbow; and gliding joints, such as those in the spine. Muscles pull the bones of the joint that produce movement. Muscles are attached to bones by tendons. Tendons must be strong to facilitate movement and compliant to prevent damage to the muscle tissues. Ligaments connect bones. They help to prevent excessive movement. Muscles, tendons and ligaments are attached around each joint. Fluid within most of the joints lubricates joint surfaces to reduce friction.

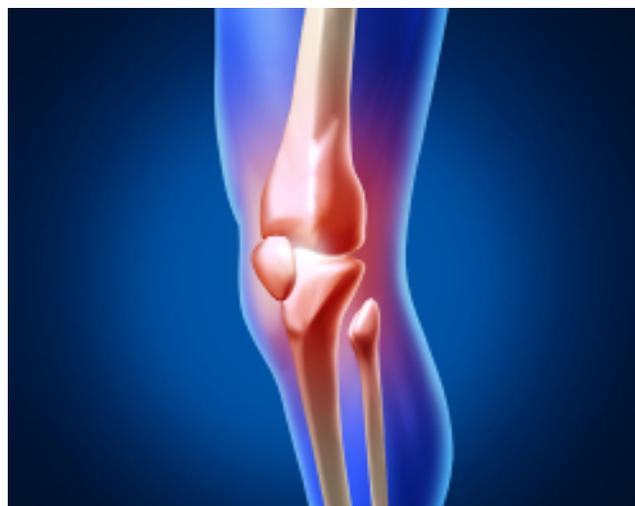
How do I keep joints in good shape?

A vigorous exercise regimen, a healthy lifestyle and proper lifting are important.

Moving a joint through its full range of motion serves several important purposes. Joints are not supplied directly with blood as are other organs, so “use it or lose it” applies to joint function.

Cartilage within a joint is nourished by synovial fluid, which is “forced” into the joint cartilage through a process called imbibition. This occurs only when the joint is moved, which is why movement is critical to joint health.

A spinal disc is made up of two parts: a larger, outermost, ligament-like portion called the annulus fibrosus and an inner gelatinous portion called the nucleus pulposus. These two structures are primarily water-based. They also rely on movement and imbibition for nourishment. Therefore, movement in the spine is also critical to the health of the spinal joints.



Proper diet and nutrition and a tobacco-free lifestyle also contribute to joint health by allowing the joints to absorb enough healthy nutrients for long-term stability and resistance to wear and tear.

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How are joints injured?

Abnormal stresses placed on normal joints cause most joint injuries. A joint can be injured acutely from a single traumatic event. An ankle sprain is a classic example. The ankle joint is protected by ligaments on the inside and outside. When the ankle moves excessively inward, the ligaments on the outside of the joint are torn. The ankle swells, leading to bruising and

pain. In some cases, small pieces of bone and cartilage may be torn away. Fracture of the tibia and/or fibula can also occur.

Other joint injuries are called repetitive-stress injuries or cumulative-trauma disorders. These injuries occur when relatively small abnormal stresses are repeatedly placed on normal joints. Poor posture, poor joint position during the performance of a task, and/or poor workstation ergonomics make repetitive-stress injuries more likely.

How can I prevent repetitive-stress injuries?

There are three basic principles that are especially important when considering the impact of proper joint movement:

1. When lifting an object, be sure that the largest muscles in the area perform the task.
2. Muscles will fatigue and joints are more likely to be injured when you hold a particular posture, especially a poor one, such as staying partially bent forward at the waist.
3. When performing tasks, keep joints that are being used either in their neutral posture or approximately halfway into the range of motion. Working with joints at the extremes of their ranges of motion for prolonged periods places abnormal stresses on those joints and can result in repetitive stress injuries.

Muscle cramps can also be a problem when we pursue optimal functioning. Not all causes of muscle cramps are clear but they could relate to inadequate stretching and muscle fatigue. Excess stress, a low level of fitness, overexertion (especially in intense heat) and depleted electrolytes through excessive sweating and dehydration may lead to cramping and spasms. Certain diuretics may bring them about due to loss of sodium, potassium and magnesium. Gentle stretches and massage should help ease the pain.

If muscle spasms are due to injury, using ice packs for the first two or three days may help alleviate pain. Long-lasting spasms may be treated with moist heat for 20 minutes several times a day.

It helps to improve the diet. Eliminate sugar, caffeine and chocolate and avoid alcohol. Chocolate and alco-

hol interfere with absorption of magnesium. Increase the amount of fiber and protein and green leafy vegetables.

Before and after exercising, stretch the muscle groups that have been cramping. Four hundred units of vitamin E may also be helpful.

If you have questions about joint health or muscle cramps, your doctor of chiropractic can discuss the best choices for you. ■



For more information on prevention and wellness, or to find a doctor of chiropractic near you, visit ACA's patient education website at www.ChiroHealthy.com

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