

# All About Joints

## HOW DO JOINTS WORK?

Joints are designed to withstand the loads placed on them and provide a full range of motion. 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.

The bones that make up the joint allow movement, but it is the muscles that pull the bones that produce the movement. Muscles are attached to bones by tendons. Bones are connected to bones by ligaments.

Muscles, tendons, and ligaments are attached around each joint at very specific positions, with joint surfaces shaped in exact dimensions. Fluid within most of the joints lubricates the joint surfaces to reduce friction and allow for lifelong use.

## HOW DO I KEEP JOINTS IN GOOD SHAPE?

The movements that you perform on a daily basis are critical to long-term joint health, as are proper nutrition, a healthy exercise regimen, and a healthy lifestyle.

Moving a joint through its full range of motion is important. Joints are not supplied directly with blood like other organs in the body, so the saying, "Use it or lose it" applies to joint function.

Most joints in the body are lined with cartilage—a firm but pliable tissue that covers the surfaces of the bones that make up the joint. Cartilage within a joint is nourished by synovial fluid, which is "forced" into the joint cartilage through a process called imbibition. The pressure within the joint that provides nourishment to the cartilage occurs only when the joint moves. And this is why movement is critical to joint health. Grinding of bone on bone without a cartilage covering leads to degenerative joint disease, or DJD. This condition tears up the bones and creates cysts, bone spurs, and excess bone production.

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 fluid- or water-based. They also rely on movement and imbibition for their nourishment. Therefore, movement in the spine is also critical to the health of the spinal joints.

Proper diet and nutrition contribute to joint health by providing the joints with enough healthy nutrients for long-term stability and resistance to wear and tear. A healthy lifestyle free from tobacco products and other toxins helps ensure proper blood supply to tissues surrounding joints and speeds up healing of joint injuries when they occur.

