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SPINE & SPORTS: Do disks really 'slip?'

Have you ever heard the expression, “I slipped a disc!” when someone described the source of their low back pain? While “slipping a disc” is something of a misnomer, a little anatomy lesson will uncover what really happens to the discs in your spine.

Between the hard vertebral bones of the spine are flexible structures called discs, intervertebral discs to be exact, that are composed of fibrocartilage: imagine rubber infused with cotton fibers. Intervertebral discs are shaped like onion slices, with rings and cross-fiber connections. The outer or annular rings are dry and firm. The inner disc has a soft and more gelatinous composition, called the nucleus pulposus. Microscopic fibers criss-cross throughout the disc to create small honeycomb-like chambers which enclose the wet cartilaginous substance, and just like bubble wrap, these chambers create hydrostatic pressure which keeps the bones spaced apart, allowing for normal vertebral movement. When you flex and extend, the vertebrae rock over the firm, pressurized discs.

So while discs don't slip, per se, lots of other physical insults may occur. For example, repetitive loading (for example, doing sit-ups) and injuries cause disc fibers to crack, creating fissures within the disc which allow the gelatinous nucleus pulposus to migrate to the outer rings of the disc. The outer portion of the disc has a lot of nerve fibers and thus is quite sensitive. Irritation from nuclear chemical leakage to the outer disc causes back pain as well as referred pain into the hip and thigh. The degenerative breakdown of discs causes them to lose their hydrostatic pressure chambers, resulting in bulging, just as a car tire might bulge outward when low on air. Bulging discs are very common, but only cause pain when they fissure or fray, thereby leaking irritating chemicals. With too much pressure a vulnerable disc can extrude a chunk of its nucleus pulposus to the outside of the outer annular ring: ouch!

Many people walk around with bulging discs without pain because there is no chemical irritation to the disc or to its surrounding structures. Though discs may dry out as they degenerate, and can crumble or fissure internally, as long as they don't irritate the nerve endings within, they won't cause back pain. If a large bulge, localized protrusion or extrusion of the disc compresses or chemically irritates a spinal nerve which exits between the vertebrae, radiating nerve pain into an extremity will result. This condition of pain into the leg and foot, which often occurs with numbness and tingling, is called sciatica. Note that pain emanating solely into the buttock or thigh is not sciatic nerve pain, but rather referred pain from the disc, its surrounding joints or tissues.

Years ago, MRIs were routinely ordered to diagnose the source of back pain, often revealing a disc bulge or herniation, resulting in undue concern and inappropriate treatment. We now know that bulging discs are in fact commonplace, and not all disc abnormalities correlate with pain. This is why back pain specialists such as chiropractors may urge patients to reconsider an MRI to diagnose back pain or sciatica unless their history and exam findings point to a condition that might warrant it. Since current research supports an initial course of conservative treatment for addressing disc-related pain, working with a top-notch chiropractor and a physical therapist is your best treatment option.

While you may slip on a banana peel and fissure your annulus, your discs aren't slipping anywhere!

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