

Probing Question: Does cracking knuckles cause permanent damage?

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Photo by James Collins

Most people have cracked their knuckles more often than they're willing to admit. Against the steering wheel of the car. On the arm of an office chair, or right on the desk. People crack their knuckles mostly when they're alone, but sometimes they do it in public -- under the table in a restaurant.

Most of the time they get away with it, but sometimes they get caught, and people turn away in disgust. They suspect that cracking their knuckles is unhealthy, but it feels so good that they just don't want to stop. And yet maybe it's harmless -- they're not really sure. Does cracking one's knuckles cause permanent damage?

According to Sanjiv Naidu, Penn State professor of orthopedics, it does

not.

"Plain old knuckle-cracking should not cause any damage. It does not strain the ligaments or the tissues, or overextend them enough to cause arthritis," Naidu said. "It also should not cause joint weakness, on a long-term basis. Anatomically, physiologically and mechanically, there's no reason it should cause harm."

Naidu elaborates, "You literally have to disrupt the joint capsule through excessive force -- like a ligament injury in a knee, or 'skier's thumb,' for example -- to cause chronic, long-term damage." The forces generated by knuckle-cracking are relatively small in comparison, Naidu said.

So mother's childhood warnings were just old wives' tales. But what makes that disconcerting sound? Naidu explained that the cracking noise is caused by a gas, mainly carbon dioxide, that usually is dissolved in the synovial fluid that encapsulates most joints. "If you pull on the joint or distend the joint capsule," he noted, "the walls of the capsule expand and lower the pressure on the fluid inside it. The gas then comes out of solution suddenly and forms bubbles, which makes a popping noise."

The stretching of the capsule also allows a temporary increase in the joint's range of motion. "When you move the joint back into position," Naidu noted, "the fluid comes under normal pressure again, and the bubbles gradually go back into solution." The time it takes to re-dissolve the carbon dioxide into the synovial fluid prevents the knuckle from cracking again for a few minutes.

Although the actual process of cracking a knuckle may take only a few milliseconds, the relief that some people feel from it is palpable. Chiropractors make a business out of manipulating joints to reduce stress, and dedicated joint-crackers even have their own Web site and discussion board, on which to exchange anecdotes. The only

consequences knuckle-crackers face for their popping and snapping will be comments from friends and funny looks from innocent bystanders.

Source: By Stacey Tibbetts, Research/Penn State

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