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From the Los Angeles Times

Constant power plays

Young tennis players who practice hard for hours a day may suffer spinal injuries but show no symptoms, an MRI study finds.

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SPENDING hours a day playing tennis may give young, elite players a competitive edge, but all that activity may come with a price -- spinal injuries.

A recent MRI study of 33 young English tennis players ages 16 to 23 found that 28 had injuries such as stress fractures, disc degeneration and facet joint arthropathy, a degeneration of the joints that allow the spine to move forward, backward and twist.

"It struck us that these young tennis players' bodies have yet to mature, but they're subjected to doing vigorous sports about five to six hours a day," says Dr. David Connell, a musculoskeletal radiologist at England's Royal National Orthopaedic Hospital and lead author of the study appearing in this month's British Journal of Sports Medicine.

Because none of the players studied showed any symptoms of spinal injuries, Connell and his fellow researchers didn't expect to find any when they scanned the players.

Instead, they found facet joint arthropathy in 23 of the subjects, and 13 had disc degeneration, caused when the discs lose water and shrink, putting added stress on the facet joints. The same number also had disc herniation, which occurs when the inner core of the disc pushes into the spinal canal. Nine showed evidence of stress reactions or stress fractures, and 10 had synovial cysts, benign sacs of fluid that appear in the facet joints as they degenerate.

"When you're hitting a tennis ball, there's a lot of rotation around the lumbar spine," Connell says. Further, repeatedly hitting the ball with forehands and backhands, plus hyperextending the spine while serving and doing overhand smashes, puts excessive force on the back's joints, he says.

The fact that the tennis players were symptom-free doesn't surprise Dr. Robert Watkins Jr., an orthopedic spine surgeon at the Marina Spine Center in Marina del Rey. "Certainly all that stress while they're growing can be hard on their bodies," he says, "but because they're in good shape, it's less likely those things will become painful." He adds that a conditioning program that includes core stabilization exercises targeting abdominal and back muscles can reduce back injuries.

Dr. Arya Nick Shamie, a spine surgeon at the Santa Monica-UCLA and Orthopaedic Hospital, found the high incidence of injury "troubling." However, he and Watkins, who both work with elite

and pro athletes, say that some of the damage could be extremely minor. "Many surgeons may not even consider it abnormal," Shamie says.

This recent study of symptom-free tennis players adds to a growing portrait of athletes' injuries. Sprains and strains were the most common injuries among young male tennis players in a 1995 study published in *Medicine & Science in Sports & Exercise*. Researchers looked at injuries suffered by 304 players in the United States Tennis Assn.'s National Boys' Tennis Championships from 1986 to 1988 and from 1990 to 1992, and found that fractures and dislocations only accounted for 1.3% of all injuries.

A pilot study published in the *British Journal of Sports Medicine* in 2003 examined the lumbar spines of 31 Olympic athletes in various sports who were complaining of back pain, and found a greater prevalence and degree of lumbar disc degeneration than the general population.

"We've got to be careful about excessive training in young, promising athletes because we want them to reach their full potential," Connell says. "This is a critical time for them."

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