

Are Sports Activities Linked with Disc Degeneration?

According to this Japanese study, elite athletes who train for many years (from childhood on), are at risk for *degenerative disc disease* (DDD). Risk factors include participation in strenuous sports activities with specific postures and actions. A bout of severe low back pain during youth may also be a predictive factor of disc degeneration.

Repetitive physical loading of the lumbar spine varies with different competitive sports activities. Other studies have shown that the incidence of DDD is higher in elite gymnasts, weight lifters, soccer players, and high-load swimmers. Frequent trunk rotation, jumps, kick motions, and repetitive flexion and extension of the spine may account for the forces leading up to disc degeneration.

In this study, baseball players and swimmers with continuous, competitive participation had a higher incidence of DDD compared with the control group (nonathletic university students). The authors assessed each participant using MRIs and a self-report questionnaire about low back pain.

The survey included questions about past and recent episodes of low back pain. Severity of pain and location of pain were reported through the questionnaire. Other key points of information gathered included age, gender, height and weight to calculate body mass index (BMI), and number of years participating in sports.

Each individual was also examined by an orthopedic surgeon. Clinical tests included a neurologic exam, flexibility of the lumbar spine, and palpation of the low back area.

Data was analyzed and compared between the two groups (athletes and nonathletes). As mentioned, the baseball players and swimmers had the highest rate of DDD. All sports groups had higher rates of low back pain compared with the nonathletic group. Almost half of the group who reported low back pain also had degenerative disc disease. The more severe the back pain, the higher the likelihood of DDD.

Other studies in the past have reported that body mass index (BMI) isn't linked with DDD. But the results of this study do not support that conclusion. They found a higher percentage of athletes with DDD who had higher height and weight measurements (resulting in a higher BMI) compared with the nonathletic group.

Frequent rotations do appear to be a contributing factor, even in well-trained athletes. Runners did not seem affected by degenerative disc disease. This finding supports the idea that specific postures and actions are important variables in the development of DDD. More study is needed in this area. The authors hope to be able to find ways to prevent degenerative disc disease and low back pain in athletes.

Mika Hangai, MD, PhD, et al. Lumbar Intervertebral Disk Degeneration in Athletes. In *The American Journal of Sports Medicine*. January 2009. Vol. 37. No. 1. Pp. 149-155.