

Height and Torsional Stiffness are Most Sensitive to Annular Injury in Large Animal Intervertebral Discs

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"Imaging studies suggest that degenerative changes such as loss of IVD height, facet joint arthritis, and end-plate changes are likely to occur within months after discectomy [12], and these changes are significantly associated with functional disability and low back pain [8] [9] [10]. The concept of accelerated degeneration after injury is also supported by in vivo studies where experimentally induced annular puncture leads to significant changes in the biomechanical properties of IVDs [13] [14] [15] resulting in decreased glycosaminoglycan content and increased expression of catabolic and inflammatory mediators [16] [17]. It is obvious that the puncture of a healthy IVD creates a different situation from discectomy where the IVD is herniated and often degenerated. "