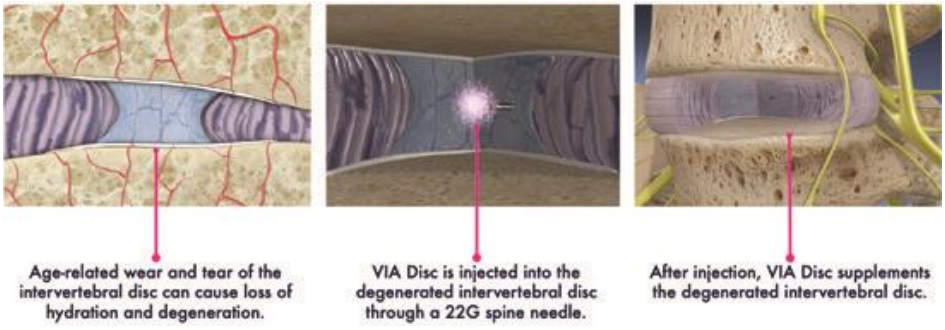
VIA Disc – Allograft Supplementation for Degenerated Lumbar Intervertebral Discs

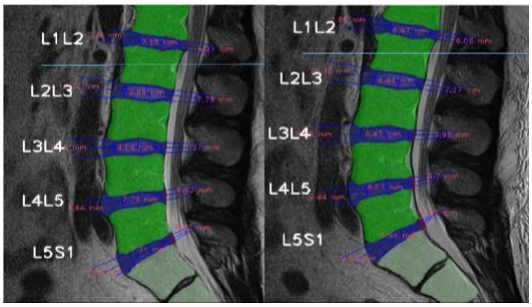
Low back pain and referred leg pain are often associated with the development of internal disruption of the disc (IDD) in the lumbar spine.[1-4] Lumbar discogenic pain results from IDD and the associated degeneration of the NP. Cellular apoptosis and the loss of proteoglycans within the NP leads to the loss of water content and reduced intradiscal pressure. Intradiscal tissue loss resulting from disc degeneration is a factor in the mechanical imbalance that, coupled with subsequent matrix loss, drives a cyclic process that gives rise to further instability and additional disc degeneration. This cycle of degeneration is repetitive and often progressive.[5]

The goal of an allogeneic disc matrix is to supplement tissue loss, which may stabilize or normalize biomechanical function. Multiple studies highlight that proper physiological loading is imperative to matrix homeostasis in degenerated discs. The physiological load stimulates aggrecan production, improving hydrostatic pressure by attracting and binding water.[5]

VIA Disc is designed to supplement NP tissue and cells in the intervertebral disc. VIA Disc consists of two key allograft components that are derived from human cadaver donor tissue – (1) intervertebral disc tissue (DT) particulate and (2) spine-derived cells. The VIA Disc matrix provides a scaffold for additional water absorption capacity through its glycosaminoglycan (GAG) content, which is expected to translate in increased hydrostatic pressure on the disc. In vitro testing demonstrates ability of VIA Disc DT to absorb water similar to original NP tissue. VIA Disc has been studied in a 218-patient randomized controlled clinical trial, the Viable Allograft Supplemented Disc Regeneration in the Treatment of Patients with Low Back Pain, or VAST trial, with initial results from the first 24 patients demonstrating that improved pain and function at 12 months can be attained with a supplemental viable disc matrix.[6]



A therapeutic strategy of supplementing disc tissue may enhance the biomechanics of the NP and thereby may overcome a loading imbalance resulting from degenerative tissue loss. VIVEX has used an investigational imaging technology to assess disc morphology for height, protrusion, and sagittal profile following 12 months of treatment.



Auto-segmentation technology (images and readings by SmartSoft, CoLumbo) provided a machine algorithm read that averages 3 para-sagittal reads and differentiates anterior, posterior, and mid-central disc heights. In this example, a patient receiving VIA Disc at L4-L5 disc level is compared at baseline (left) and at 12 months (right). Subtle changes and disc height increases are noted.

VIA Disc is the only allogeneic disc tissue therapy intended to supplement the degenerated intervertebral disc in an outpatient setting.

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This Technical Update is sponsored by Vivex and authors have ongoing financial relationships with Vivex, such as consulting arrangements, advisory board memberships, shareholder status, royalty arrangements, and familial employment relationships.