

Understanding The Procedure

Stem cell therapy represents an advanced frontier in regenerative orthopedics and interventional pain management. Utilizing specialized, multipotent cellular matrices—specifically derived from your body's own **adipose (fat) tissue**, this treatment is designed to address **tissue degeneration, structural damage, and chronic inflammation at the cellular level**. Adipose tissue is one of the most concentrated and robust sources of **mesenchymal stem cells** (MSCs) and regenerative pericytes. By introducing this concentrated matrix of specialized cells directly into the target structural anatomy, the therapy coordinates complex tissue, rebuilding processes and signals local endogenous cells to initiate structural recovery.

Therapeutic Benefits

Adipose-derived stem cells deliver a concentrated matrix of signaling factors directly to the site of structural compromise, driving a sophisticated regenerative response:

- **Paracrine Signaling & Repair:** Releases potent growth factors and exosomes, prompting dormant local cells to regenerate tissue and synthesize structural collagen.
- **Profound Immunomodulation:** Reverses the cycle of catabolic inflammation, shifting the microenvironment from active breakdown to anabolic repair.
- **Angiogenesis:** Stimulates new capillary networks, restoring oxygen and vital nutrients to chronically hypoxic, degenerated tissues.

Targeted Clinical Applications

- **Major Joints:** Halts cartilage degradation and repairs severe osteoarthritis (knee, hip, shoulder).
- **Tendons & Ligaments:** Heals chronic tendinopathies and partial structural tears (e.g., rotator cuff, Achilles) where standard treatments fail.
- **Spinal Discs:** Precise intradiscal injections address deep structural compromise, treating chronic discogenic pain and preserving spinal anatomy.

Nicolas Pugh, MD | **Adrianne Anders, NP** | **Ted Chaka, PA**

Abilene Pain Locations

Main: 1925 Hospital Drive

Chaka: 6819 Memorial Dr. Ste B

Contact Numbers

Main: 325-326-3433

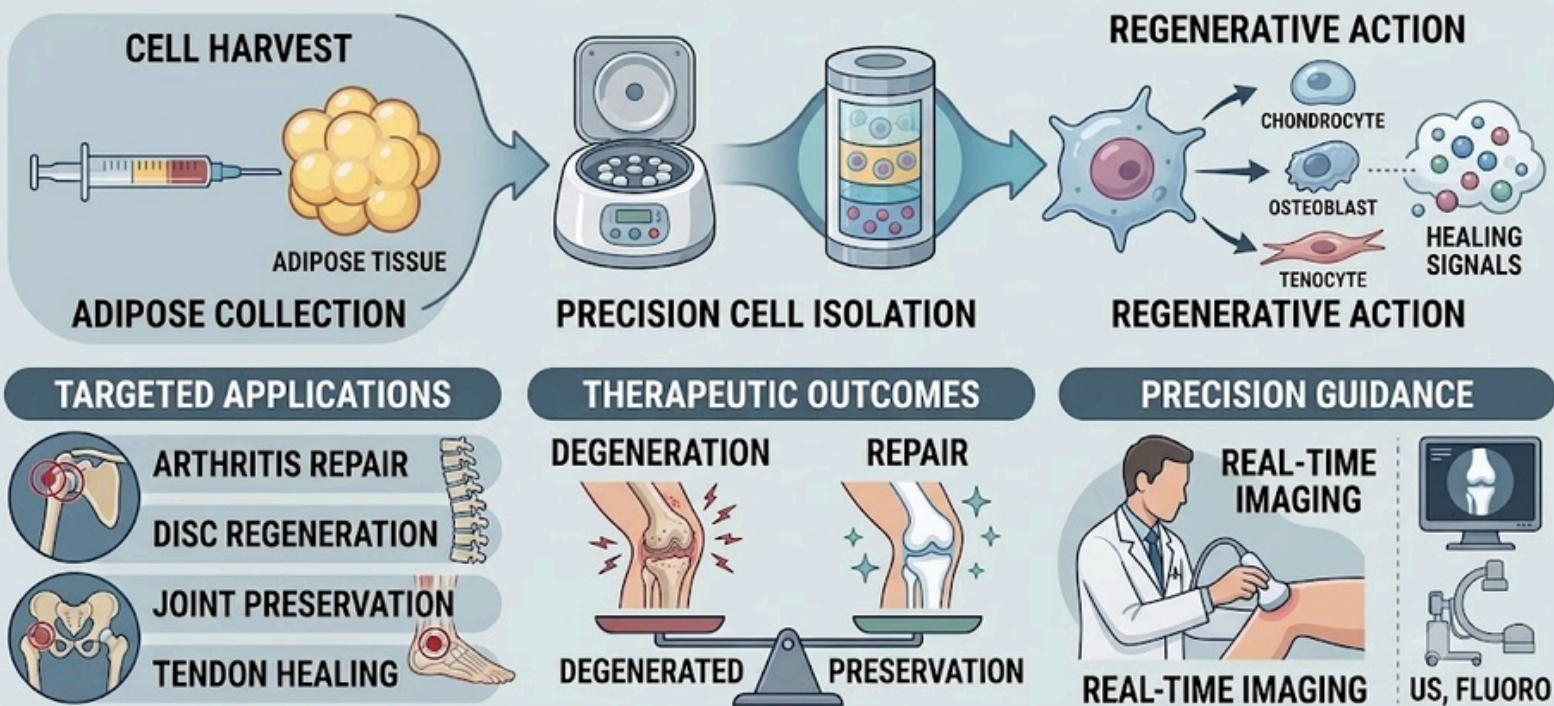
Chaka: 325-468-8096

Online

Email: info@abilenepain.com

Web: www.abilenepain.com

STEM CELL REGENERATIVE PATHWAY & APPLICATIONS



What to Expect During the Procedure

- **Microaspiration:** A minimally invasive technique to collect adipose tissue, usually from the abdomen or flank.
- **Duration:** Typically takes 60 to 90 minutes for collection, processing, and delivery, depending on complexity.

Anticipated Outcomes & Next Steps

- **The Regeneration Timeline:** Cellular regeneration operates on a biological timeline. While initial inflammatory modulation may provide symptom relief within the first few weeks, profound structural and cellular rebuilding continues to develop over 3 to 6 months.
- **Post-Procedure Protocol:** Patients may experience mild, localized mechanical soreness at both the extraction and injection sites as the active healing cascade is initiated. It is imperative to abstain from non-steroidal anti-inflammatory drugs (NSAIDs) during the defined post-procedure window to avoid interrupting the required cellular signaling process.
- **Long-Term Structural Preservation:** The primary clinical objective of cellular medicine is disease modification—actively altering the trajectory of joint and tissue degeneration to preserve structural anatomy, resolve mechanical pain, and prevent invasive surgical interventions.

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