

Dextrose Prolotherapy

A Narrative Review of Basic Science, Clinical Research, and Best Treatment Recommendations



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KEYWORDS

- Prolotherapy • Dextrose • Regenerative medicine • Osteoarthritis, Knee
- Tendinopathy

KEY POINTS

- Animal models suggest specific tissue responses to hypertonic dextrose, including proliferation.
- Clinical benefit in human studies is not explained by proliferation alone; the mechanism of dextrose prolotherapy (DPT) is likely multifactorial.
- DPT is efficacious for knee osteoarthritis and likely efficacious for finger osteoarthritis and Osgood-Schlatter disease.
- Moderate-quality randomized clinical trial (RCT) evidence supports use of DPT in rotator cuff tendinopathy, lateral epicondylitis, plantar fasciopathy and nonsurgical sacroiliac pain.

INTRODUCTION

Prolotherapy is an injection-based treatment of chronic musculoskeletal pain. A general surgeon in the United States, George Hackett, formalized injection protocols in the 1950s, based on 30 years of clinical experience.¹ Prolotherapy has been identified as a regenerative injection therapy² but is differentiated from other regenerative injection therapies, such as platelet-rich plasma (PRP) and stem cell injection by the absence of a biologic agent.

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Prolotherapy is increasingly popular in the United States and internationally. The current number of practitioners of prolotherapy in the United States is estimated as several thousand based on conference attendance and physician listings on relevant Web sites, including both independent physicians and members of multispecialty groups. Currently, Prolotherapy Regenerative Medicine is one of the 23 specialty colleges of