

Platelet-Rich Plasma (PRP) Therapies: Clinical Applications in Erectile Dysfunction, Female Sexual Health, and Fertility

1. Erectile Dysfunction

Poulios et al. (2021)

Double-blind randomized controlled trial (RCT) (n=60): 69% of men treated with intracavernosal PRP achieved clinically meaningful improvement in erectile function (International Index of Erectile Function-Erectile Function domain; IIEF-EF) at 6 months vs. 27% in placebo. No adverse events.

Zhou et al. (2025) – *Meta-Analysis of 7 RCTs*

PRP significantly improved erectile function scores at 12 and 24 weeks. PRP combined with low-intensity shockwave therapy (Li-SWT) outperformed Li-SWT alone.

Chang et al. (2024)

Prospective study (n=26): PRP lysate improved International Index of Erectile Function-5 (IIEF-5), Erection Hardness Score (EHS), and penile Doppler ultrasound parameters—supporting microvascular regeneration.

Chakrobartty & Hasan (2025)

Prospective observational study (n=45): PRP injections into the corpus cavernosum led to significant improvement in erectile function among men aged 40–70 with longstanding erectile dysfunction. IIEF-EF increased from 13.2 to 23.5 over six months ($p < 0.001$), with additional gains in orgasmic function, sexual desire, satisfaction, and general well-being.

Key Takeaways:

- PRP improves erectile function with durable outcomes, particularly in mild to moderate vasculogenic erectile dysfunction (ED).
- Combined approaches (e.g., with low-intensity shockwave therapy) yield synergistic vascular and functional gains.
- Vascular improvements confirmed on penile Doppler ultrasound highlight regenerative mechanisms.
- PRP provides structural repair in ED, with positive effects across multiple domains of sexual function and quality of life.

2. Female Sexual Health & Urogenital Atrophy

Atlihan et al. (2025)

Randomized controlled trial (RCT) (n=66): PRP significantly improved Female Sexual Function Index (FSFI) and Vulvovaginal Symptoms Questionnaire scores in postmenopausal women with vulvovaginal atrophy. Outperformed topical estrogen in sexual function outcomes.

Ragy et al. (2025)

Randomized trial (n=20): PRP and hyaluronic acid (HA) both improved FSFI and vaginal wall thickness. HA showed greater structural gains, but PRP yielded robust functional benefit.

Neto (2017)

Pilot study (n=68): PRP (“O-Shot”) led to 94% satisfaction—enhancing lubrication, orgasm, and continence.

Berndt et al. (2025) – *In vitro*

PRP and PRP combined with hyaluronic acid (PRP-HA) promoted fibroblast proliferation, collagen production, and reduced cellular senescence in vaginal tissues.

Key Takeaways:

- PRP offers a hormone-free regenerative option for vaginal atrophy and female sexual dysfunction.
- Enhances lubrication, sensitivity, and tissue regeneration—confirmed through both clinical and histologic outcomes.

3. Fertility & Regenerative Relevance

Khan et al. (2025)

Prospective study (n=30): In women with premature ovarian failure, intraovarian PRP reduced follicle-stimulating hormone (FSH) by 30%, increased anti-Müllerian hormone (AMH) by 20%, restored ovulation in 40%, and led to spontaneous pregnancy in 15%. Demonstrates functional regeneration of ovarian tissue.

Moustakli et al. (2025) – *Narrative Review*

Synthesizes intraovarian PRP’s regenerative mechanisms—angiogenesis, stem cell activation, stromal reprogramming—and positions it as a translational therapy bridging fertility, orthopedics, and urology.

Simavlı et al. (2025)

Large cohort (n=234) with poor ovarian response: PRP increased AMH, antral follicle count (AFC), and

oocyte yield. 67% developed embryos; 39% achieved live birth per transfer. Strong evidence for tissue repair and fertility restoration.

Key Takeaways:

- Intraovarian PRP enhances folliculogenesis, hormonal balance, spontaneous ovulation, and embryo development in women with diminished ovarian reserve (DOR), premature ovarian insufficiency (POI), or poor ovarian response (POR).
- Repeatedly shown to improve AMH, AFC, and oocyte quality across diverse studies.
- Demonstrates broad regenerative capacity—highlighting the crossover potential between orthopedics and reproductive medicine and underscoring opportunities for interdisciplinary collaboration.

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