

ALOPECIA

PLATELET-RICH PLASMA IN THE MANAGEMENT OF ALOPECIA: A SYSTEMATIC REVIEW AND META-ANALYSIS OF CLINICAL EVIDENCE

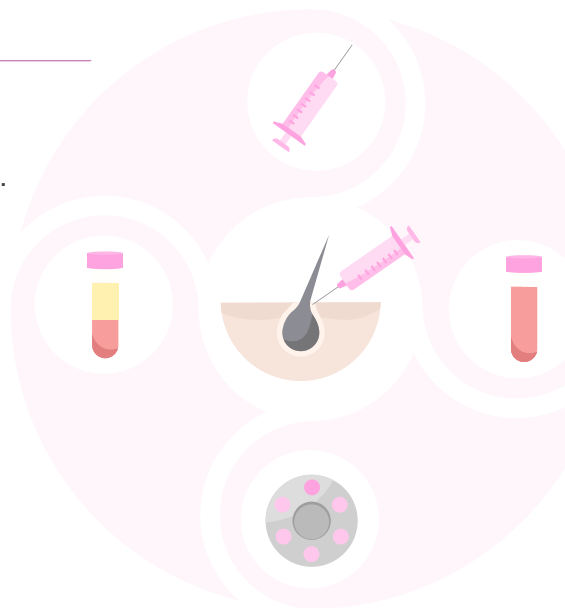
ACTIVATED PRP IS SIGNIFICANTLY ASSOCIATED WITH THE INCREASE OF THE HAIR DENSITY AND WITH A REDUCTION IN THE HAIR LOSS RECURRENCE RATE

ACTIVATED PRP vs NON-ACTIVATED PRP

- Activated PRP **improves hair density** compared to non-activated PRP.
- Only activated PRP **reduces the recurrence rate**.
- Non-activated PRP is associated with an increase in side effects.

PRP vs OTHER TREATMENTS

- PRP **increases hair density** compared to placebo.
- PRP is more effective in **reducing hair loss** than minoxidil.
- PRP treatment is associated with **greater patient satisfaction** compared to control groups.



ABSTRACT

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Platelet-Rich Plasma in the Management of Alopecia: A Systematic Review and Meta-Analysis of Clinical Evidence

INTRODUCTION

Alopecia is a common hair loss condition with different treatment modalities. Platelet-rich plasma (PRP), a minimally invasive autologous therapy, has emerged as a topic of interest, but its effectiveness remains debated. The present systematic review and meta-analysis aims to evaluate the safety and efficacy of PRP for alopecia.

METHODS

A comprehensive search of PubMed, EMBASE, and Scopus conducted on 27 May 2025 with monthly updates until July 10 2025 identified 43 randomized controlled trials (1877 participants) assessing PRP in alopecia. Primary outcomes were changes in hair density and thickness. Secondary outcomes included side effects, hair loss, clinical improvement, patient satisfaction, recurrence, and other hair follicle metrics.

RESULTS

Activated PRP was effective in increasing hair density and minimizing recurrence compared with placebo, whereas non-activated PRP was associated with a higher frequency of adverse effects. PRP also improved clinical outcomes and patient satisfaction. Moreover, hair loss decreased with PRP therapy regardless of activation status or control type. However, PRP did not significantly affect hair thickness.

DISCUSSION

These findings support PRP as a relatively safe and effective therapy for alopecia, particularly in increasing hair density and reducing hair loss. Patient satisfaction was generally favorable. The clinical efficacy of PRP was often comparable or superior to conventional treatments. Activation status appears to influence response, highlighting the importance of preparation protocols. However, as a result of heterogeneity in study designs and incomplete reporting of the effect of specific PRP composition- related covariates on treatment efficacy or patient safety outcomes, no significant variation in overall effect modification was attributable to alopecia subtype.

CONCLUSIONS

Moderate evidence highlights that PRP is safe and effective in improving hair density, reducing hair loss, and enhancing clinical outcomes and satisfaction. No significant benefits were demonstrated for hair thickness or other follicle-related parameters as derived from PRP therapy. Further high-quality, standardized trials are needed to confirm these findings and clarify the clinical significance of PRP formulations.