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# Clinical Pearls

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## Platelet-rich plasma for alopecia

By Kim T. Nguyen, BS, and Ronda S. Farah, MD, FAAD

**1. Platelet-rich plasma (PRP) is not FDA-approved for hair growth but has been positively trending in the literature.**

Derived from one's own blood, PRP is a blood product that typically boasts a platelet concentration approximately two to five times higher than that found in whole blood.<sup>1</sup> Within the field of dermatology, PRP scalp injections have been gaining fast traction in the hair loss realm. Yet, PRP devices have not been cleared by the U.S. Food and Drug Administration (FDA) for alopecia. For patients who cannot tolerate or do not improve with conventional hair loss therapies, PRP can be a worthwhile therapeutic pursuit. In the literature, PRP has been shown to stimulate hair growth and hair thickness and may even reduce shedding.<sup>2,3</sup>

**2. The mechanism of PRP remains unclear.**

While the exact mechanism for how PRP promotes hair growth is unknown, several hypotheses have been proposed. Growth factors released from platelets are thought to induce signaling pathways which promote the growth/anagen phase of hair follicles.<sup>4</sup> The effects of certain growth factors, such as transforming growth factor-beta, platelet-derived growth factor, and fibroblast growth factor-7, are thought to play a role in the mechanism of PRP.<sup>4</sup> It has also been proposed that PRP promotes angiogenesis around the hair follicles to maximize hair growth, potentially through the release of vascular endothelial growth factor.<sup>4</sup> Ultimately, how these growth factors modulate the hair cycle (stimulatory vs. inhibitory) is still unclear.

**3. There are variations in preparation, centrifugation, and administration of PRP.**

To date, we lack a universally agreed-upon methodology for the preparation, centrifugation, and administration of PRP.<sup>1</sup> For example, platelet activation methods, devices/kits, and number of spins all vary among users.<sup>1</sup> In our clinic, we have found success in starting patients with a series of three PRP treatments, each spaced 1-2 months apart. Maintenance sessions every 4 weeks up to 6 months have been proposed. Our preferred frequency of PRP administration may change in the future when the optimal frequency of scalp PRP is uncovered. Overall, more robust randomized controlled trials are needed to elucidate the optimal way to maximize hair

growth with PRP.

**4. Androgenetic alopecia (AGA) shows the most evidence for PRP in the literature.**

Among the hair loss/scalp conditions, AGA has the most literature supporting PRP's clinical efficacy. A recent meta-analysis in AGA patients found that PRP significantly increased the hair count, thickness, and density when compared to the placebo group.<sup>3</sup> Another study found that PRP significantly reduced hair pull rates when compared to topical minoxidil after 12 weeks.<sup>2</sup> PRP has demonstrated favorable results in scarring alopecia patients, but larger studies are needed before we can draw conclusions.<sup>2</sup> For scarring alopecia (e.g., frontal fibrosing alopecia, lichen planopilaris), the evidence for PRP is still at the case report and case series level.<sup>2</sup>

**5. Scalp PRP injections have a favorable safety profile.**

While scalp PRP is a relatively safe in-office procedure, there are some risks and adverse effects that dermatologists should keep in mind. The most common side effects of scalp PRP are immediate and self-resolve within 24 hours after the procedure. These include pain, swelling, bleeding, lightheadedness/hypotension, and erythema.<sup>3</sup> Of these adverse effects, pain is most commonly reported in the scalp PRP literature.<sup>3</sup> To reduce some of these adverse effects, dermatologists can consider implementing simple proactive measures such as vibratory devices to distract from pain or advising patients to arrive well-hydrated and after a recent meal.

**References:**

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