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**[Hair growth stimulation. What's new?](#)**

In all hair transplant clinics, all patients are counseled on medical therapy to help halt further hair loss and thus maximize the impact of any transplant long term. In the past, options were limited, with the minoxidil and finasteride; however in the past several years, both low-level laser light therapy and PRP have emerged as adequate treatment options for both men and women.

Low-level laser light has many dermatological applications, but with respect to hair, it was originally discovered paradoxically. At high energy, devices emitting red\*near-infrared wavelengths cause hair destruction; but at lower energy, it has been found to actually stimulate hair growth. To date, many different devices exist, from laser caps to combs. A recent evidence-based review of all the trials performed show that the handful of randomized control trials provides a moderate-high level of evidence in support of the devices safety and efficacy. In our opinion, the results are more moderate than the other treatment already FDA approved for the treatment of pattern hair loss, although they can be helpful adjunct.

Platelet-rich plasma (PRP) has been utilized for years in wound healing and orthopedic conditions, but more recently it has gained traction in aesthetic medicine, especially with respect to hair loss. Several clinicians have had some success in treating alopecia of various etiologies (lichen planopilaris, alopecia areata, etc.), but most of the limited data have been focused on PRP use for male and female pattern hair loss.

Although not all is known regarding PRP's mechanism of action, it is known that once activated, platelets are able to aggregate together and release alpha-granules containing various growth factors, such as platelet-derived growth factor, transforming growth factor-beta, vascular endothelial growth factor, epidermal growth factor, fibroblast growth factor, and insulin-like growth factor-1 (IGF-1). Their release increases angiogenesis and vascularization, providing resting telogen hairs the signal that they need to enter the anagen phase. This increased vascularization and mix of growth factors also fosters the proliferation of dermal papilla cells and inhibits apoptosis, helping to prolong the anagen phase. More specific to androgenetic alopecia, PRP may help to counteract certain effects of dihydrotestosterone (DHT). In a mouse model of androgenetic alopecia, DHT was shown to block IGF-1 contributing to hair loss and PRP is a known source of IGF-1.

Although not all studies have shown positive result, enough literature has shown that both are capable of moderate success in treating androgenetic alopecia and have the added benefits of being very well tolerated. Platelet rich plasma is also autologous and thus provides patient a more "natural" treatment, with side effects limited to procedural discomfort and bruising. There is no standard system, quantity or interval of treatment regarding PRP for hair loss. They currently treat patients monthly 2 or 3 times and then judge efficacy after 8 to 12 months. Of a patient have a response, then retreatment at

follow-up may result in continued efficacy if performed at a 6-to-12 month basis, although no studies have been performed to support this.

With respect to hair transplantation, PRP has been discussed anecdotally in the treatment of the donor area to promote the growth of hairs transected during the procedure, use a storage solution to keep grafts viable, and treatment of the recipient sites to promote earlier regrowth and an overall higher yield. One study have been published to date, a single-blinded study that treated the recipient area in patients undergoing FUE with either PRP or placebo. All 20 patients in the PRP group had > 75% regrowth at 6 months post-op, compared with only 4 of 20 patients in the placebo group. The PRP group was also noted to have significant regrowth at 8 weeks post-op, which is much earlier than expected after receiving a hair transplant.

In the next few years, longer-term studies will help better define the medical and surgical role of PRP and hair loss.

### **Conclusion**

A new interest in preventing baldness has been stimulated by the advertising given to certain product (minoxidil, finasteride, cyproterone) that have shown an ability to retard or reverse male and female pattern baldness in certain individuals. The PRP procedure is more and more indicated for male and female alopecia.