CAIRNS COSMETIC CLINIC

A science-based overview for anyone considering platelet-rich plasma (PRP) for thinning, shedding, or density concerns — including androgenetic alopecia (pattern hair loss) and select non-scarring types.

PRP at a Glance

PRP takes a small sample of your blood and concentrates the platelets—little packets of growth factors that help tissues repair. When injected into the scalp, those signals can coax resting follicles back into the growth phase, often improving hair count, overall density, and the share of thicker, multi-hair follicular units—especially in androgenetic alopecia (AGA). It's minimally invasive, generally well-tolerated, and most protocols use three monthly sessions, with results judged around 3–6 months.

Quick note: Some hair-loss patterns—like scarring alopecias (e.g., lichen planopilaris, CCCA)—and medical contributors (iron deficiency, thyroid issues, medications) need specific treatment first. A qualified clinician can confirm your diagnosis and advise on timing for PRP. Results vary from person to person, and clinic protocols (how PRP is prepared and scheduled) can differ, which may influence outcomes.

Who PRP may help

- Pattern hair loss (AGA) in men and women: strongest evidence base.
- Post-shedding density recovery in some non-scarring cases (e.g., telogen effluvium) — evidence emerging.
- Aesthetic thickening in areas with miniaturized (finer) hairs, where follicles are still present.

Inside the Science: How PRP Helps Hair Grow

Wakes up resting follicles

PRP can nudge "resting" hairs to start growing again, so more follicles are actively making hair at any given time. *(Biology: helps shift follicles from telogen → anagen; targets dermal papilla + outer root sheath/bulge stem-cell niches.)*

Improves the follicle's blood supply

It encourages tiny new blood vessels around the follicle, bringing better oxygen and nutrients to the hair root. *(Biology: angiogenesis via growth factors like VEGF → stronger perifollicular microvasculature.)*

Supports cell survival and repair

PRP turns on pro-growth, pro-survival signals inside hair cells, helping them resist “shut-down” cues and make thicker strands. *(Biology: activates Wnt/β-catenin and ERK/Akt pathways; ↑ Ki67 on IHC marks cells re-entering the growth cycle.)*

Builds fuller-looking follicle groups

In areas that respond, you can see fewer single hairs and more natural “bundles” of two or three hairs from the same pore, which looks denser. *(Biology: follicular unit remodeling on trichoscopy—shift from single-hair units to multi-hair units.)*

Counters miniaturization *(context for pattern hair loss)*

Over time, PRP can help reverse the trend toward finer, wispy hairs by supporting thicker, terminal hairs. *(Biology: promotes anagen duration and matrix activity; dampens apoptosis that drives miniaturization.)*

PRP for Hair Growth — Evidence Highlights

Randomized & controlled trials (individual studies)

Mitra et al. (2025) — Split-scalp, placebo-controlled (n=35)
Monthly PRP ×3: +8.4% density at 3 months and +19.1% at 6 months vs baseline on the PRP side; placebo side kept thinning. Shift toward multi-hair follicular units; Ki67 increased at 3 & 6 months.
→ Objective evidence (AI trichoscopy + IHC) that PRP pushes follicles into growth (anagen) and improves visible coverage, especially frontal/vertex.

Gentile et al. (2015) — Randomized, evaluator-blinded, intra-patient
Monthly PRP ×3 increased hair density and terminal hair density vs saline over 2–24 months.
→ Early controlled signal that PRP improves density in AGA.

Alves & Grimalt (2016) — Randomized, double-blind, split-scalp
PRP improved density and anagen ratio vs placebo; later work suggested PRP + topicals may add benefit.
→ Reinforces objective trichoscopy improvements.

Tawfik (2018) — Randomized, double-blind (women)
Weekly PRP ×4 (activated, double-spin) produced sustained density gains at 6 months.
→ Higher-frequency induction protocols can perform well.

Meta-analysis

Kieling et al. (2024)
Across randomized trials, PRP increased hair density vs placebo by ~+27.6 hairs/cm² (CI 14–41). Hair-shaft diameter findings were inconsistent. Heterogeneity and probable publication bias noted, but the signal favors PRP overall.
→ Supports a real density benefit in AGA while underscoring protocol variability.

Combination / adjunct evidence

Babayiğit et al. (2025) — Retrospective cohort (n=45)
PRP alone and PRP + 5% minoxidil improved hair count, density, terminal hair, and anagen ratio; the combo reduced vellus (miniaturized) hair more than PRP alone.
→ Practical signal that pairing PRP with minoxidil can further reverse miniaturization.

Pilot / safety signals (small uncontrolled)

Khan et al. (2025) — Prospective before–after (n=5)
Three PRP sessions: shedding resolved on hair-pull; density and satisfaction improved; no major adverse events.
→ Feasibility and tolerability; effect signal needs controlled confirmation.

Mechanism-adjacent

Zhang et al. (2024) — Pre/post scalp microbiome profiling (n=14 men)
After 6 months of PRP, relative abundance shifted toward more Cutibacterium and less Staphylococcus/Lawsonella alongside visible density gains.
→ Hypothesis-generating: PRP may also help by rebalancing the scalp microbiome in addition to growth-factor effects.

Other randomized trials frequently included in reviews

(See Kieling et al., 2024, for pooled results and details.)
Dicle (2018); Rodrigues (2019); Shapiro (2020); Gressenberger (2020); Singh (2020); Dubin (2020); Qu (2021); Chuah (2021).

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Other randomized trials frequently included in reviews: Dicle (2018); Rodrigues (2019); Shapiro (2020); Gressenberger (2020); Singh (2020); Dubin (2020); Qu (2021); Chuah (2021). *(Pooled and summarized in Kieling et al., 2024.)*