Peptide Perspectives™

THE HAIR RESTORATION STACK

Copper Peptides, Supplements & Stronger, Healthier Hair



THE BIOLOGY OF HAIR GROWTH: KEY AREAS

THE HAIR CYCLE

- **Anagen** – growth phase (2 – 7+ years).
- **Catagen** – transition phase (≈ 2 – 3 weeks).
- **Telogen** – resting/shedding phase (≈ 2 – 4 months).

DERMAL PAPILLA & WNT SIGNALS

- Dermal papilla cells send growth signals.
- Wnt/β-catenin signaling helps keep follicles in the anagen (growth) phase.

DHT & MINIATURIZATION

- DHT (from testosterone) can shrink hair follicles in genetically sensitive areas, leading to thinner, shorter hair over time.

SCALP BARRIER & INFLAMMATION

- Scalp inflammation, oxidative stress, and a weakened barrier may contribute to hair thinning and slower regrowth.

EXPERIMENTAL HAIR RESTORATION STACKS: TOPICAL APPROACHES & DOSING CONTEXT

1. AHK-Cu + GHK-Cu

- **AHK-Cu** (copper tripeptide-1): Community topical range: 0.05 – 0.5% (conservative), up to 1% in some anecdotal use, once daily.
- **GHK-Cu:** A 2% topical serum was investigated in a small human eyebrow study, not a scalp study and not a validated paired concentration.

2. GHK-Cu + Pal-GHK

- **GHK-Cu:** Exploratory topical use (commonly 0.1 – 2% in cosmetic formulations).
- **GHK-Cu** (palmitoyl–GHK): A lipid-modified GHK peptide used in cosmetic products, typically in low-ppm amounts (e.g., 10 – 100 ppm / 0.001 – 0.01%) in finished formulas.

No validated pair dose or hair-growth trial.

3. AHK-Cu + Pal-GHK

- **AHK-Cu:** 0.05 – 0.5% (up to 1% in some anecdotes), once daily.
- **Pal-GHK:** Typically formulated in ppm amounts (e.g., 10 – 100 ppm) in cosmetic products.

No hair-growth trial or combined schedule has been validated.

4. GHK-Cu + Matrixyl

- **AHK-Cu:** Exploratory topical (≈ 0.1 – 2% in cosmetic use).
- **Matrixyl:**
  - Original Matrixyl® = palmitoyl pentapeptide-4
  - Matrixyl® 3000 = blend (palmitoyl pentapeptide-4 + palmitoyl tetrapeptide-7), tested in skin-focused studies at 3%.

3% refers to the blend in skin studies, NOT 3% pure peptide, and there is no scalp hair evidence.

5. Copper Peptide + Barrier Support

- **Copper peptide** (e.g., GHK-Cu or AHK-Cu): exploratory topical use.
- **Barrier support:** Ceramides, glycerin (2 – 10%), and panthenol (0.5 – 2%) to improve scalp hydration and barrier function.

Experimental combination; no validated follicle regrowth dose.

6. Minoxidil + Experimental Peptide

- **Minoxidil:** FDA-established topical for hair loss (see dosing below).
- **Experimental peptide** (e.g., GHK-Cu, AHK-Cu, or Pal-GHK); explored by some for a potential additive effect.

Research comparison only; no validated peptide add-on dose or proven added benefit.

ESTABLISHED HAIR-LOSS TREATMENT COMPARATORS

Minoxidil (Topical)

- **5% foam:** Men – ½ cap (≈ 1 g) twice daily; Women – ½ cap once daily.
- **2% solution:** Women – 1 mL twice daily.
- **Common side effects:** scalp irritation, dryness, itching, or increased initial shedding (usually temporary).

Finasteride (Oral)

- 1 mg once daily (prescription) for appropriate adult men (androgenetic alopecia).
- **Common side effects:** decreased libido, erectile changes, or mood changes in some users.
- Do NOT use during pregnancy: can cause harm to a male fetus (women who are pregnant or may become pregnant should avoid handling crushed or broken tablets.

NUTRITION SUPPORT (FOUNDATIONAL FACTORS)

- **Protein:** Adequate daily intake (≈ 1.2 – 1.6 g/kg/day) supports hair structure (keratin).
- **Iron:** Supplement only if deficient (e.g., low ferritin; often aim > 50 ng/mL for hair support).
- **Zinc:** Use only if deficient (typical 15 – 30 mg/day); excess zinc can deplete copper.
- **Vitamin D:** 1,000 – 4,000 IU/day if deficient (based on labs).
- **Biotin:** Deficiency is rare. High-dose biotin (≥ 5,000 – 10,000 mcg/day) can interfere with lab tests (e.g., thyroid, troponin).
- **Collagen peptides:** 2.5 – 10 g/day used in skin research; not proven to regrow scalp hair.
- **Omega-3s** (EPA/DHA): 1 – 3 g/day may support scalp health and reduce inflammation.
- **Saw palmetto:** 320 mg/day (standardized extract) has preliminary evidence for loss.
- **Vitamin C:** 100 – 500 mg/day or through a nutrient-rich diet to support collagen and scalp tissue.

EVIDENCE LADDER: WHAT THE RESEARCH SHOWS

Early / Preclinical (Most Data)

- **AHK-Cu:** Human scalp hair follicles ex vivo (lab studies) show growth-related signaling, not a human treatment study.

Limited Human Data

- **GHK-Cu:** Small human study (eyebrows only) using a topical serum showed increased hair appearance, not a scalp study and not combined with other peptides.

Cometic / Skin Device

- **Pal-GHK and Matrixyl:** Evidence from skin and cosmetic formulation studies (e.g., collagen, skin elasticity), not scalp hair-growth trials.

Evidence Ladder:

- No controlled human trials demonstrate that any of these peptide stacks (e.g., AHK-Cu + GHK-Cu, GHK-Cu + Pal-GHK, AHK-Cu + Pal-GHK, or GHK-Cu + Matrixyl) increase scalp hair density or reverse hair loss.



MEASURE WHAT MATTERS (TRACK PROGRESS OBJECTIVELY)

- Hair count per area (e.g., dermatoscopy or phototrichogram, if available).
- **Terminal hair density** (thicker, longer hairs).
- **Hair shaft diameter** (thickness, if measurable).
- **Shedding** (e.g., hairs lost during washing or daily count).
- **Standardized photos** (same lighting, angle, and distance).
- **Scalp tolerance** (redness, itching, irritation).
- **Assessment timeline:** at least 3 – 6 months (multiple hair cycles are needed to see change).

KEY TAKEAWAYS

- Copper peptides (AHK-Cu, GHK-Cu) are promising research compounds for hair and skin signaling.
- Most data is preclinical or limited (e.g., small eyebrow study).
- Matrixyl and Pal-GHK have cosmetic skin evidence, not scalp hair trials.
- Established treatments (minoxidil, finasteride) have strongest clinical evidence for hair loss.
- A combined approach (scalp health, key ingredients they offer, and established therapies when appropriate) may offer the best real-world strategy while research evolves.

COMMUNITY CONCENTRATIONS ARE NOT SAFE OR EFFECTIVE TREATMENT PROTOCOLS. NO EXPERIMENTAL STACK HERE HAS PROVEN HUMAN SCALP REGROWTH.

Educational / research overview | November 2026 | Not medical advice