

PRESCRIPTION MONOGRAPH

Compounded Active Ingredients: Minoxidil/Finasteride/Tretinoin

Form: Topical Solution

Drug Class:

- Minoxidil: Antihypertensive vasodilator
 - Finasteride: Type II 5- α -reductase inhibitor
 - Tretinoin: Vitamin A-derivative topical retinoid
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Mechanism of Action^{1,2,3}:

When compounded together, Minoxidil, Finasteride, and Tretinoin have the potential to provide a multi-targeted approach that enhances overall hair growth and preservation. Together they are intended to work by:

- Stimulate vascular and follicular activity by opening potassium channels in dermal papilla cells, to enhance blood flow and nutrient delivery to follicles, promoting local growth factors.
 - Lower levels of DHT (a hormone linked to hair loss) in the scalp, to help protect hair follicles from shrinking and to slow down shedding.
 - Improve penetration and cycling by increasing absorption of minoxidil and promoting keratinocyte turnover to synergize with follicular cycling.
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Indications Commonly Prescribed For:

- Androgenetic alopecia
 - Post-inflammatory shedding
 - Cosmetic hair quality: To improve density, thickness, and retention
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Before Use: Let your health care provider know if you have any medication allergies before you take this compounded preparation. Let your health care provider know if you have any liver or kidney problems. Let your healthcare provider know of all supplements you are currently taking.

Contraindications:

- Hypersensitivity to any component
 - Scalp irritation or dermatitis where barrier is compromised
 - Systemic absorption of high minoxidil concentrations may cause hypotension
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Cautions: Let your Healthcare provider know if you experience any adverse side effects. Benefits persist only while on therapy.

How to Use: This compounded preparation is provided as a topical solution in a spray bottle. Apply the directed number of sprays evenly to the affected areas of the scalp, usually once or twice daily as instructed by your provider. Gently massage the solution into the scalp if recommended. Wash your hands after application. Avoid getting the solution in your eyes, mouth, or on broken skin. If you miss a dose, apply it as soon as you remember, but do not double the application if it is nearly time for the next one. Consistent use is important, and desired results may take several weeks to become noticeable.

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Warnings and Precautions:

- Initial shedding: Minoxidil may cause early “shedding” as follicles transition.
 - Systemic absorption risk: monitor for hypotension and tachycardia.
 - Retinoid irritation: Tretinoin can cause erythema, peeling, burning; start low or cycle dosing.
 - Scalp conditions: Use with caution with psoriasis, eczema, or other compromised barrier.
 - Finasteride may lower serum DHT; counsel men of reproductive age.
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Adverse Reactions:

Common:

- Mild skin irritation, burning sensation
- Itching, Dryness, Redness
- Initial shedding

Rare:

- Tachycardia, Hypotension
 - Dizziness
 - Decreased libido, erectile dysfunction
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Interactions:

- Concurrent strong vasodilators or antihypertensives may have additive hypotensive effect if absorption is higher than expected.
 - Tretinoin may increase minoxidil absorption and heighten irritation if used with other keratolytics.
 - Additive antiandrogen effect with dutasteride; may alter PSA levels.
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Use in Specific Populations:

- Pregnancy: Avoid if pregnant or planning pregnancy due to teratogenic risk
 - Pediatrics: Avoid unless under dermatologic supervision
 - Geriatrics: Start with the lower minoxidil strength (2%) and monitor tolerability
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Storage:

- Store in original container at room temperature (up to 30°C or 86°F)
 - Store in a cool dry place away from heat, sunlight, and moisture
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Monitoring Parameters:

- Skin/hair response over 8–12 weeks
 - Prostate screening (men >50): Adjust PSA interpretation if systemic absorption suspected.
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Citations:

1. Li M, Marubayashi A, Nakaya Y, Fukui K, Arase S. Minoxidil-induced hair growth is mediated by adenosine in cultured dermal papilla cells: possible involvement of sulfonyleurea receptor 2B as a target of minoxidil. *J Invest Dermatol.* 2001;117(6):1594-1600. doi:10.1046/j.0022-202X.2001.01570.x
 2. Kaufman KD, Olsen EA, Whiting D, Savin R, DeVillez R, Bergfeld W, Price VH, Van Neste D, Roberts JL, Hordinsky M, Shapiro J, Binkowitz B, Gormley GJ; Finasteride Male Pattern Hair Loss Study Group. Finasteride in the treatment of men with androgenetic alopecia. *J Am Acad Dermatol.* 1998;39(4):578-589. Available from: Radcliffe Department of Medicine website. Accessed September 17, 2025.
 3. Kwon OS, Pyo HK, Oh YJ, Han JH, Lee SR, Chung JH, Eun HC, Kim KH. Promotive effect of minoxidil combined with all-trans retinoic acid (tretinoin) on human hair growth in vitro. *J Korean Med Sci.* 2007;22(2):283-289. doi:10.3346/jkms.2007.22.2.283
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