



Topical minoxidil for androgenetic alopecia: When blood pressure agents make you hairy

CLINICAL QUESTION

How effective is topical minoxidil for androgenetic alopecia?

BOTTOM LINE

In men and women, topical minoxidil improves hair density by about 21 hairs/cm² versus 5-9 (placebo) after 16-48 weeks. Oral and topical minoxidil are similarly effective albeit with different adverse effects. Finasteride is likely more effective than topical minoxidil in men.

EVIDENCE

- Results statistically significant unless indicated.
- One systematic review of randomized controlled trials (RCTs) with extractable data of topical minoxidil, past 5 years.¹ After 16-48 weeks:
- Women:
 - Versus placebo:¹
 - Additional hairs/cm² over placebo: 12-14 (2-4 RCTs, 476-717 participants).

- Example 21 additional hairs/cm² minoxidil versus 9 (placebo).
 - Additional RCT topical versus oral minoxidil (52 participants):²
 - 1mg oral versus topical 5% once-daily:
 - Additional hairs/cm², global improvement: No difference.
- Men:
 - Versus placebo:¹
 - Additional hairs/cm² over placebo: 8-15 (4-10 RCTs, 598-1207 participants).
 - Example 21 versus 5 (placebo).
 - Additional RCT topical versus oral minoxidil (90 participants):³
 - 5mg oral versus topical 5% twice-daily:
 - Additional hairs/cm²: No difference.
 - Proportion with improvement at vertex: 46% versus 70% (oral); no difference at frontal areas.
 - Additional RCTs topical minoxidil versus 1mg oral finasteride:
 - Topical 2% twice-daily (99 participants):⁴
 - Additional hair/0.49cm² (baseline: 61-65): 9.6 versus 18 (finasteride).
 - "Improvement": No difference.
 - Topical 5% twice-daily (65 participants):⁵
 - Improvement: 52% versus 80% (finasteride).
- Adverse effects, examples:
 - Hypertrichosis (25% topical versus 49% oral),³ headaches (2% topical versus 14% oral).³
No meaningful changes in blood pressure/heart rate with oral.^{2,3}
 - Scalp eczema (16% topical versus 2% oral).³
 - Shedding (9-16% oral/topical).³
 - Loss of libido 0% (minoxidil oral/topical) versus 15% (finasteride).⁵
- Limitations: Clinical significance of hairs/cm² unclear, few studies looking at patient satisfaction, RCTs often unblinded, mostly in 30-40 year-old men, high drop-out rates.

CONTEXT

- Health-related quality-of-life impairments with androgenetic alopecia comparable/greater than acne vulgaris.⁶
- In men, higher efficacy topical minoxidil with higher concentration: 19 additional hairs/cm² (5%) versus 13 (2%), and patient assessment scores higher (51 on 100-point scale versus 41 for 2%).⁷
 - Severe scalp symptoms also higher with higher concentration: 4% versus 1%.
 - Inconsistent results in women.⁸

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Authors do not have any conflicts of interest to declare.

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