

# Male and Female Pattern Hair Loss

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# Disclosures

**Dr. Brett King has served on advisory boards and/or is a consultant and/or is a clinical trial investigator and/or is on a Data Monitoring Committee for Abbvie, AltruBio Inc, Almirall, AnaptysBio, Arena Pharmaceuticals, Aslan Pharmaceuticals, Bristol Meyers Squibb, Concert Pharmaceuticals Inc, Equillum, Horizon Therapeutics, Eli Lilly and Company, Incyte Corp, Janssen Pharmaceuticals, LEO Pharma, Merck, Otsuka/Visterra Inc, Pfizer Inc, Q32 Bio Inc, Regeneron, Sanofi Genzyme, Sun Pharmaceutical, TWi Biotechnology Inc, and Ventyx Biosciences Inc. He has served on speaker bureaus for Abbvie, Incyte, Eli Lilly, Pfizer, Regeneron and Sanofi Genzyme. He is a scientific advisor for BiologicsMD.**

# Male and Female Pattern Hair Loss

Male Pattern Hair Loss and Female Pattern Hair Loss = Androgenetic Alopecia (AGA)

I will add photos

# Androgenetic Alopecia Epidemiology

**Common in males and females**

**May develop during puberty, with increasing prevalence with age**

**Affects all races**

# Confirming the Diagnosis of AGA

**AGA is often a clinical diagnosis**

**Dermoscopy can help confirm the diagnosis and reveals miniaturized hairs and intact follicular ostia**

**In some cases, a biopsy is helpful**

Scalp Biopsy Influences Diagnostic Accuracy and Treatment in Black Women with Alopecia: A Retrospective Study

# Androgenetic Alopecia Pathogenesis

## Androgens hormones

- Successful treatment with finasteride (interrupting conversion of testosterone to dihydrotestosterone)

## Genetics

- Likely multiple genes contribute to androgenetic alopecia

## Unknown factors

- Successful treatment with minoxidil via unclear mechanism

# Laboratory evaluation of AGA?

## Tests for Hair Loss in Females

- Hormone levels (DHEAS, free testosterone, total testosterone, etc)

Only when clinical features of hyperandrogenism are present (eg, hirsutism, irregular menses, moderate to severe acne)

- Serum ferritin

Decreased Serum Ferritin is Associated With Alopecia in Women

- Thyroid levels (TSH, etc)

Hair Growth and Alopecia in Hypothyroidism

- Complete blood count (CBC)

## What about for Males?

- NA

mean ferritin level (ng per ml)

- No hair loss 59.5
  - AGA 37.3\*.
  - AA 24.9\*
  - AT/AU 52.3
  - TE 50.1
- \*p<0.05 vs normals

9 patients with hair loss and hypothyroidism were studied:

- 6 had symptomatic, untreated primary thyroidal failure
- 3 initially had thyrotoxicosis

# Treatment of AGA

## FDA approved

Topical minoxidil

Finasteride (in males)

## Commonly used

Spironolactone (in females)

Finasteride/dutasteride

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Biotin

Vitamins and supplements

## Commonly used devices and procedures

Low-level laser therapy

Platelet rich plasma (PRP)

Microneedling



# Case scenario

**A patient goes to their dermatologist for androgenetic alopecia and is prescribed a treatment regimen. What is the patient's expectations of treatment?**

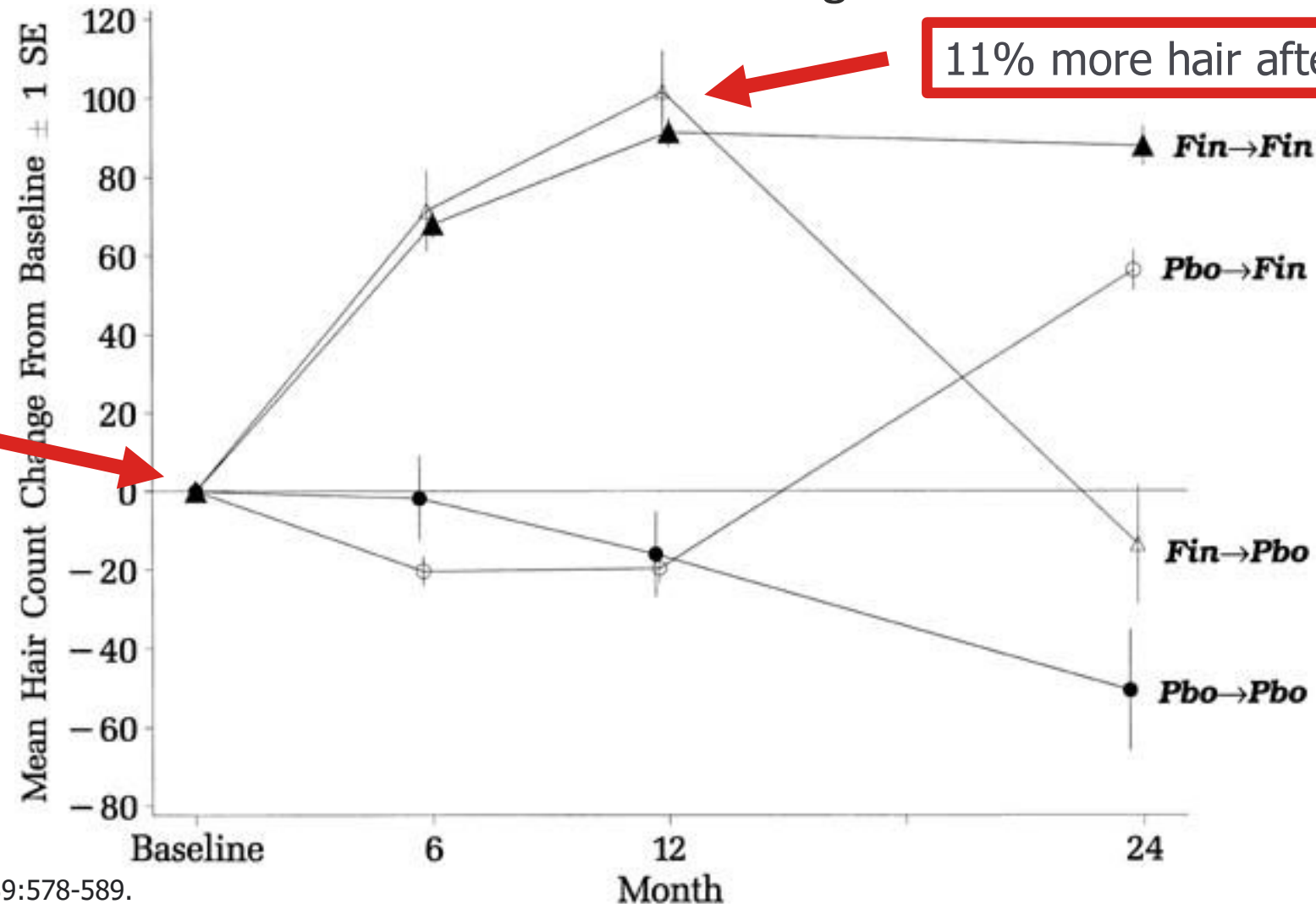
I will add photos

# What is Treatment Success in AGA?

# Finasteride in the treatment of men with androgenetic alopecia

FDA  
approved

Hair count mean change from baseline



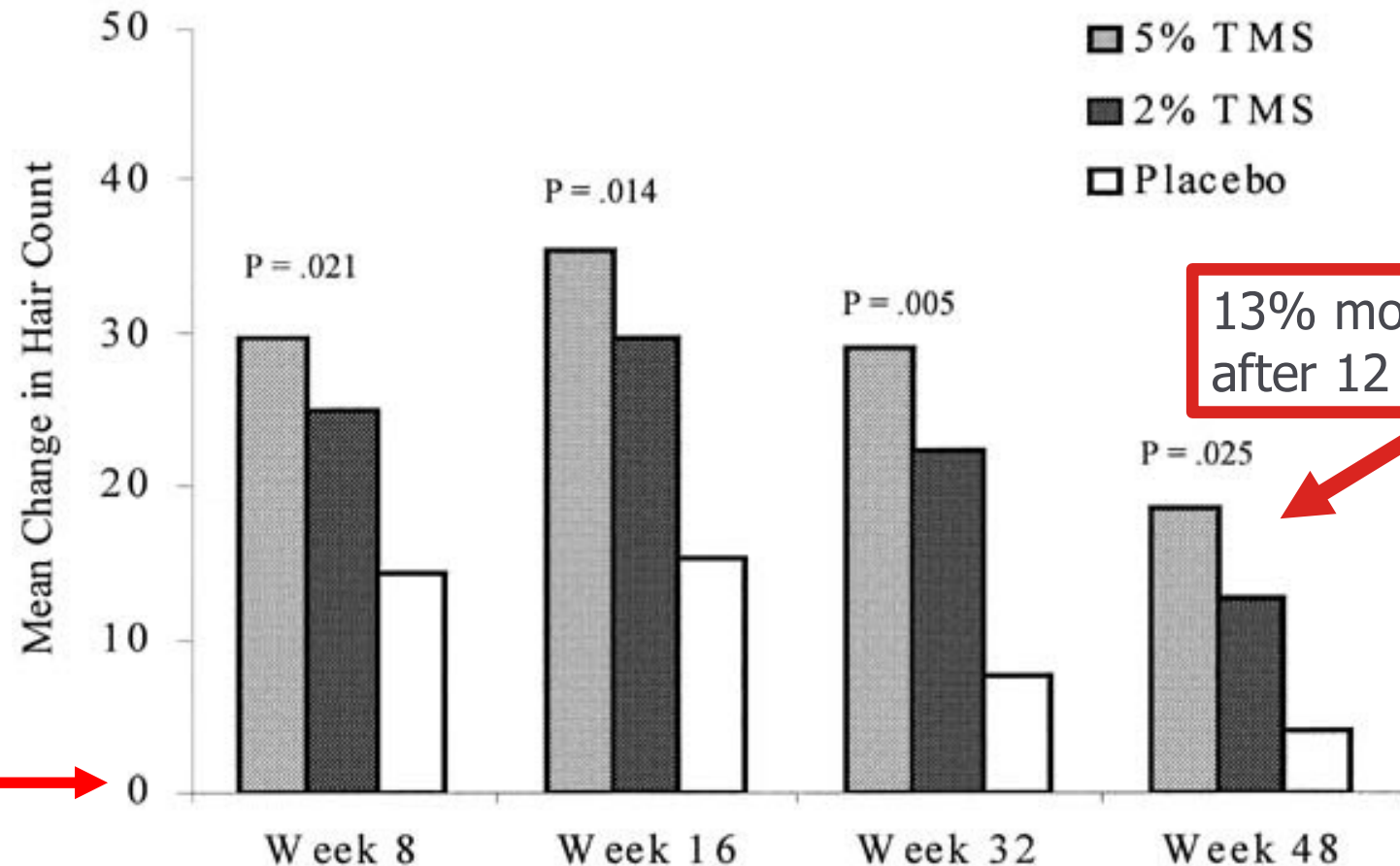
Kaufman KD, et al. JAAD. 1998;39:578-589.

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# A randomized clinical trial of 5% topical minoxidil versus 2% topical minoxidil and placebo in the treatment of androgenetic alopecia in men

FDA  
approved

Change from baseline in nonvellus hair count



Baseline nonvellus hair  
counts 143–152

13% more hair  
after 12 months

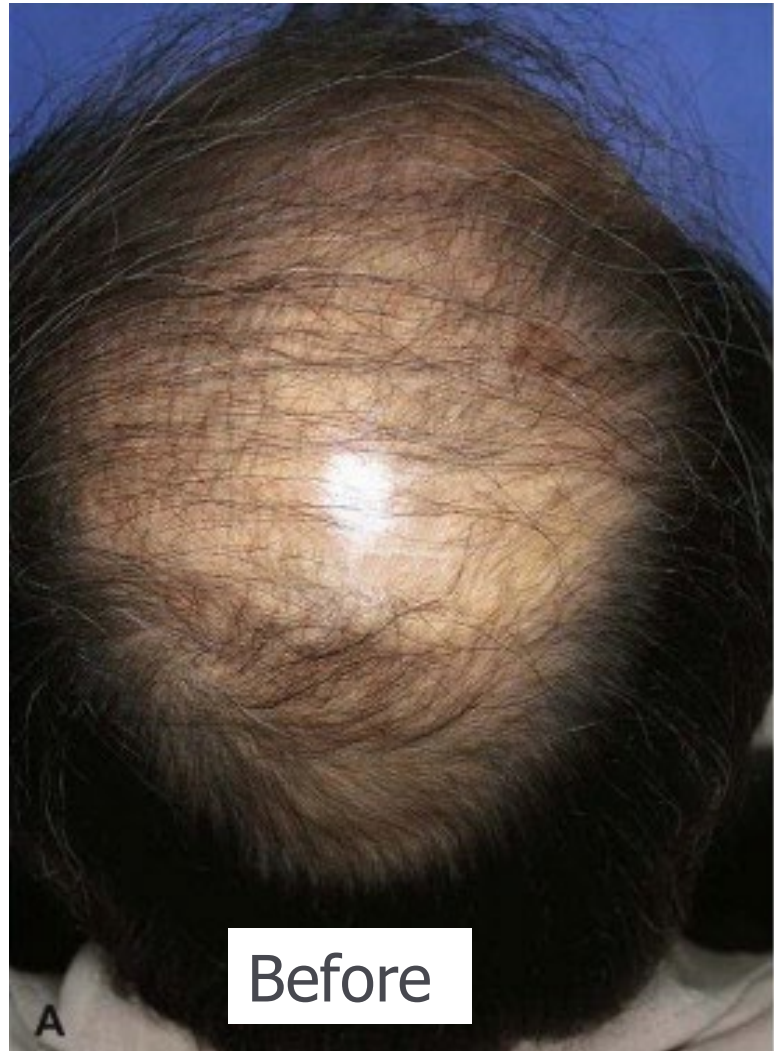
P-values reflect statistically significant differences favoring 5% topical minoxidil over 2% minoxidil. *TMS*, Topical minoxidil solution.

Olsen EA, et al. JAAD 2002;47;377-385.

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# Efficacy, safety, and tolerability of dutasteride 0.5 mg once daily in male patients with male pattern hair loss: A randomized, double-blind, placebo-controlled, phase III study

Off label



baseline

8% more hair after 6 months

eride

o

6

Intention-to-treat population. \* $P < .05$ , mean  $\pm$  SEM.

Eun HC, et al. JAAD 2010;63;252-258.

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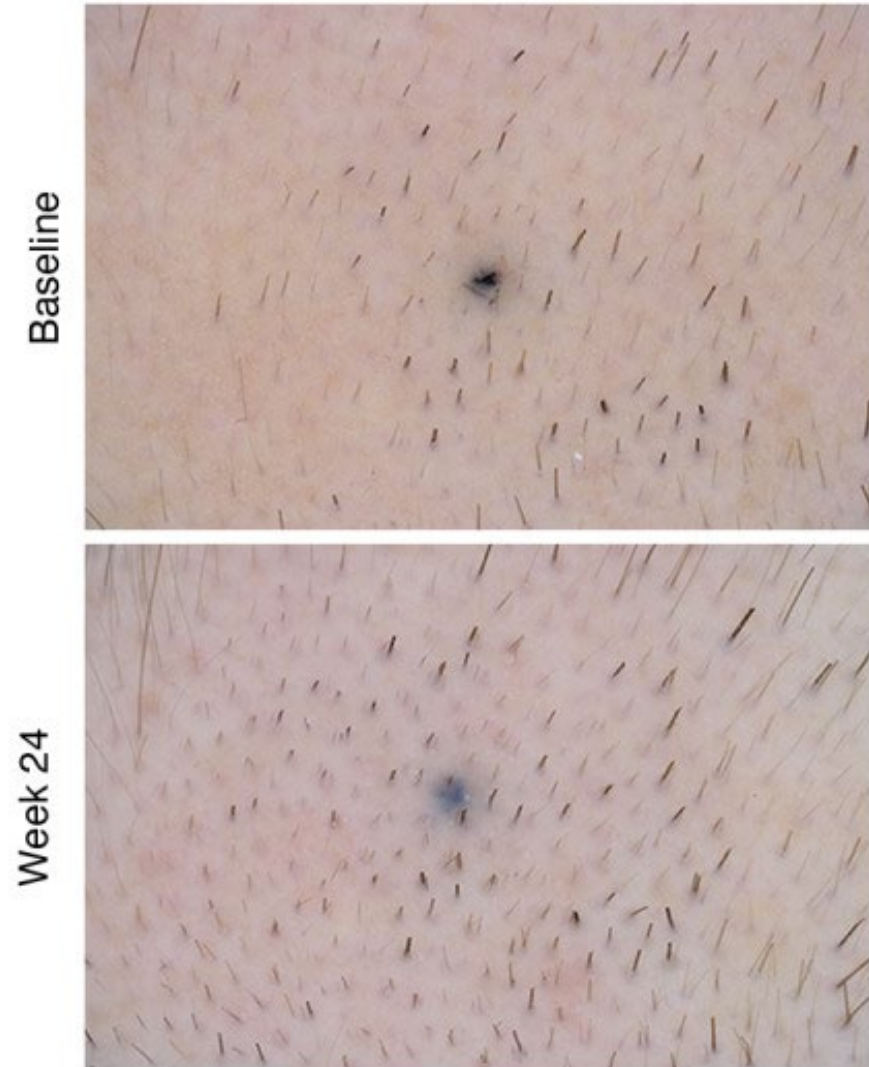
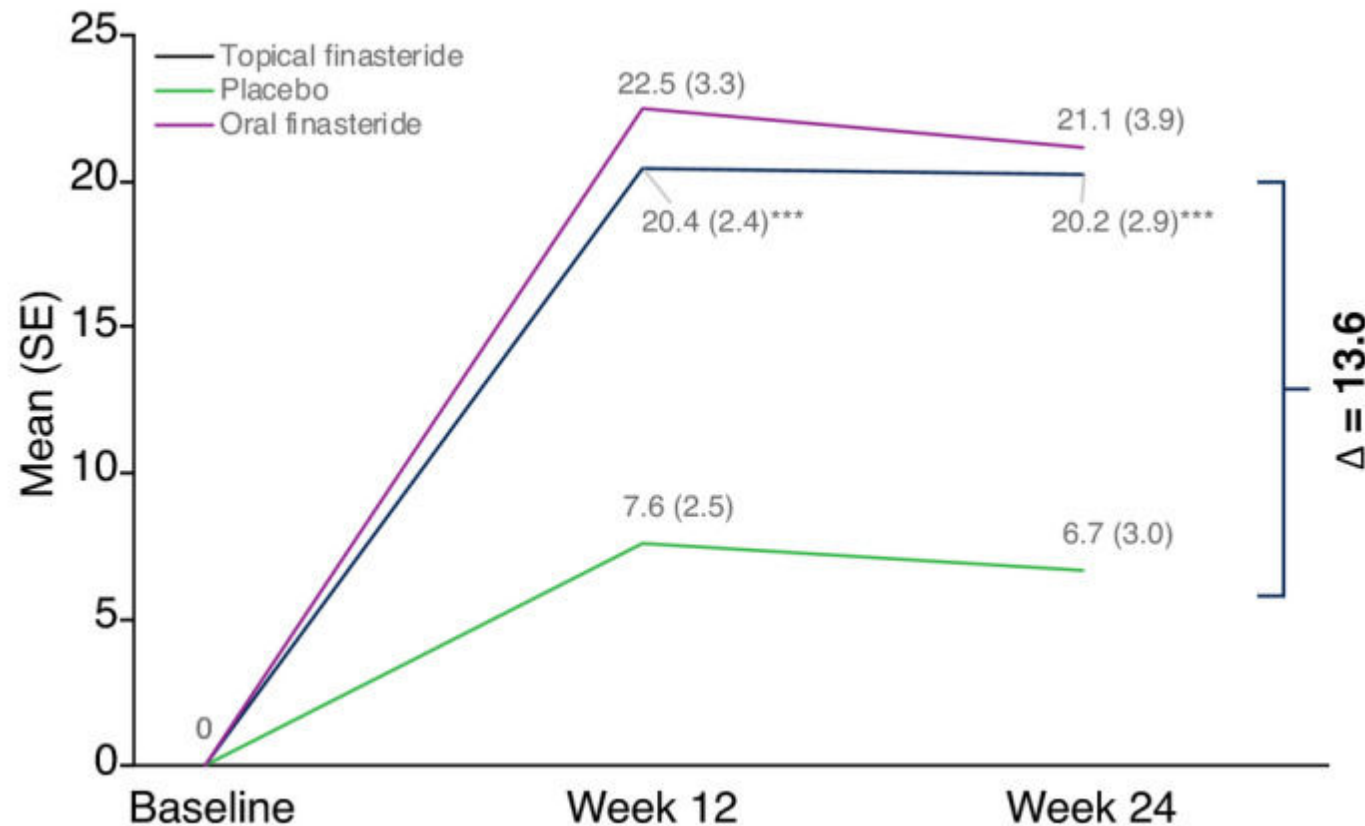


# Efficacy and safety of topical finasteride spray solution for androgenetic alopecia: a phase III, randomized, controlled trial

Baseline and week 24 macrophotographs of a patient treated with finasteride 0.25% topical solution who was rated as showing **MARKED IMPROVEMENT**

Off label

Adjusted mean change from baseline in target area hair count in the vertex



Intention to treat population. \*\*\*  $P < 0.001$  vs. placebo. SE, standard error.

Piraccino BM, et al. J Eur Acad Dermatol Venereol. 2022 Feb;36(2):286-294.

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# Relative Efficacy of Minoxidil and the 5- $\alpha$ Reductase Inhibitors in Androgenetic Alopecia Treatment of Male Patients: A Network Meta-analysis

Rank order probability of being the most efficacious treatment:

- 0.5 mg/d of oral dutasteride
- 5 mg/d of oral finasteride
- 5 mg/d of oral minoxidil
- 1 mg/d of oral finasteride
- 5% topical minoxidil
- 2% topical minoxidil
- 0.25 mg/d of oral minoxidil

# Oral Minoxidil for AGA

Oral minoxidil treatment for hair loss: A review of efficacy and safety

Safety of low-dose oral minoxidil for hair loss: A multicenter study of 1404 patients

Effectiveness and safety of low-dose oral minoxidil in male androgenetic alopecia

Review of oral minoxidil as treatment of hair disorders: in search of the perfect dose.

Very-low-dose oral minoxidil in male androgenetic alopecia: A study with quantitative trichoscopic documentation.

Efficacy and safety of oral minoxidil 5 mg once daily in the treatment of male patients with androgenetic alopecia: an open-label and global photographic assessment.



# Before and After Treatment With Oral Minoxidil 2.5 mg BID



Photos courtesy of Brett King, MD, PhD.

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# Before and After Treatment With Oral Minoxidil 5 mg QD



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# Before and After Treatment With Oral Minoxidil 10 mg QD



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# Before and After Treatment With Oral Minoxidil 10 mg QD



Photos courtesy of Brett King, MD, PhD.  
These materials are provided



# Before and After Treatment With Oral Minoxidil 10 mg QD





# Before and After Treatment With Oral Minoxidil + Finasteride 5 mg QD





# Spironolactone Safety in Females

## **Association of Spironolactone Use With Risk of Cancer: A Systematic Review and Meta-analysis**

No statistically significant association was observed between spironolactone use and risk of breast cancer...

## **Spironolactone use does not increase the risk of female breast cancer recurrence: A retrospective analysis**

Spironolactone was not independently associated with increased breast cancer recurrence and may be considered for the treatment of alopecia in breast cancer survivors.

## **Exploring the historical stigma of spironolactone use in breast cancer survivors with alopecia**

The historical association between breast cancer and spironolactone is unfounded, and women with breast cancer should not be discouraged from using spironolactone for their alopecia treatment.

# Conclusions

- AGA is common over the span of life
- Biopsy when there is any uncertainty in diagnosis
- Lab evaluation of females is of limited utility unless there are signs of hyperandrogenism
- Medical treatment options include oral and topical minoxidil (M/F), spironolactone (F), finasteride/dutasteride (M/F)
- Discuss goals of treatment, including hair regrowth and slowing down loss
- Set expectations of regrowth, e.g. “better than today, but *not* your 18-year-old hairline”
- It takes time to grow hair. Evaluate treatment progress at 6 and 12 months and even later.
- Take photos before treatment and at follow-up visits
- Use oral minoxidil 1.25 – 10 mg QD in combination with spironolactone/finasteride/dutasteride/etc.