

## Alopecia, androgenetic - male - Management

### Scenario: Diagnosis and Assessment of a man with androgenic alopecia

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#### Overview of diagnosis

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- **The diagnosis of androgenetic alopecia in men is usually made from the history and clinical findings alone.**
- **Take a [history](#)** to assess the severity, impact, and possible causes of hair loss.
- **[Examine](#) the pattern and distribution** of hair thinning and inspect the scalp.
  - The typical pattern in men is a longstanding, slowly progressive hair loss affecting the fronto-temporal area and the crown (vertex).
- **Suspect an [underlying cause or alternative diagnosis](#)** to the hair loss if assessment reveals:
  - Systemic disease — particularly a recent severe systemic infection, iron deficiency, or thyroid dysfunction.
  - Drugs — particularly anabolic steroids or supplemental androgens, drugs with antithyroid activity, or chemotherapy.
  - Extreme dietary habits or rapid weight loss.
- **Consider whether any [further investigations](#)** are required.

#### What history should I take in a man with suspected androgenetic alopecia?

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- **Ask men with suspected androgenetic alopecia about the following:**
  - Timing and pattern of the hair loss:
    - When did it start?
    - Was it sudden or gradual?
    - Where was it noticed most?
  - Changes in hairstyle to compensate for alopecia and use of any haircare procedures or products.
  - Past medical problems, including systemic or endocrine disorders in recent months.
  - Family history of hair loss.

- Use of medication.
- Dietary habits.
- **Ask specifically about the psychological impact of hair loss** and the impact on quality of life.

### **Basis for recommendation**

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This recommendation is based on expert opinion from two guidelines [[Drake et al, 1996](#); [Blume-Peytavi et al, 2010](#)] and expert opinion from review articles [[Sinclair, 1998](#); [Shapiro et al, 2000](#); [Hillman and Blume-Peytavi, 2009](#)].

### **How should I examine a man with suspected androgenetic alopecia?**

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- **Examine the pattern and distribution of hair thinning.**
  - Typically there is recession of the hairline and thinning of the hair of the crown and frontal/parietal areas. Normal hair may be replaced by short, thin vellus hairs, a more common occurrence in men than women.
  - Shedding activity and thinning may be more noticeable in autumn and winter.
  - The degree of hair loss can be assessed using the [Hamilton-Norwood Scale](#).
  - Presentations vary, and about 10% of men with androgenetic alopecia present with a female pattern of hair loss (see section on the [Ludwig Scale](#) in the CKS topic on [Alopecia, androgenetic - female](#)).
- **Examine the scalp for any bald patches, scarring, erythema, or scaling.**
- **Consider the pull test (only if personal experience allows).**
  - The technique is to tug a bundle of approximately 50–60 hairs firmly, but not forcibly, away from the scalp, sliding the fingers along the hair shaft. The test is positive if more than 10% of grasped hairs (around six hairs) are pulled away from the scalp. It indicates active hair shedding.
  - The pull test is usually negative in androgenetic alopecia, except in active periods where there may be a moderate degree of telogen hair shedding.
  - A positive pull test requires investigation for [telogen effluvium](#) (but androgenetic alopecia may still coexist).

- The 'pull test' is of value only in experienced hands, as it shows high inter-observer variation and is influenced by shampooing. Examiners should standardize their own procedure.
- More advanced tools for assessment are now available, such as the trichogram (microscopic examination of hair roots), photographic techniques, and dermatoscopy.

### The Hamilton-Norwood Scale

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- The degree of male baldness is compared to the Hamilton-Norwood scale, sometimes known only as the Norwood scale.
- An illustration can be found at [www.nature.com](http://www.nature.com).
- There are seven levels of loss in the Norwood scale:
  - **Norwood 1** — The man has a normal head of hair with no visible hair loss.
  - **Norwood 2** — The hair is receding in a wedge-shaped pattern.
  - **Norwood 3** — The man has the same receding pattern as Norwood 2, except the hairline has receded deeper into the frontal area and the temporal area.
  - **Norwood 4** — The hairline has receded more dramatically in the frontal region and temporal area than in Norwood 3 and there is the beginnings of a bald spot at the back of the head.
  - **Norwood 5** — The hair grows in the same pattern as Norwood 4 but with a much reduced hair density.
  - **Norwood 6** — The strip of hair connecting the two sides of the head that existed in Norwood 4 and 5 no longer exists in Norwood 6.
  - **Norwood 7** — The man has hair receding all the way back to the base of the head and the sides just above the ears.

### Basis for recommendation

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These recommendations are based on expert opinion from two guidelines [[Drake et al, 1996](#); [Blume-Peytavi et al, 2010](#)] and expert opinion from review articles [[Sinclair, 1998](#); [Shapiro et al, 2000](#); [Hillman and Blume-Peytavi, 2009](#)].

### What investigations should I make when assessing a man for androgenetic alopecia?

- **Laboratory testing for the diagnosis of androgenetic alopecia is generally unnecessary**, as the diagnosis is usually made on clinical grounds.
- **The following tests may be of value if presentation is atypical or an [alternative or underlying diagnosis](#) is suspected:**
  - Thyroid function tests.
  - Full blood count.
  - Serum ferritin.
- For example, if [telogen effluvium](#) is suspected, measure ferritin level and thyroid-stimulating hormone to exclude iron deficiency or hypothyroidism.

### **Basis for recommendation**

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These recommendations are based on expert opinion from two guidelines [[Drake et al, 1996](#); [Blume-Peytavi et al, 2010](#)].

- Laboratory testing in men with hair loss in a pattern typical of androgenetic alopecia is unnecessary because an underlying hormonal cause is unlikely. Further diagnostic testing is indicated only if there is reason to suspect an underlying disorder or alternative diagnosis.
- The evidence for an association with iron levels relates mainly to hair loss in females rather than males. Some have found a tendency to a lower mean ferritin level in women but the evidence is conflicting.

### **[What else might it be?](#)**

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**Alternative diagnoses include other diseases affecting hair growth, diseases of the scalp, and associated underlying factors.**

- **Telogen effluvium** is the most common alternative diagnosis.
  - Sudden and severe shedding may occur when a higher percentage of hairs are in the resting phase.
  - Shedding may be precipitated by significant events, such as a severe infection, crash diets, or major surgery, or by some medications.

- Usually, scalp coverage is good because more than half the hair must be lost before it is objectively apparent.
- In the active phase, the [pull test](#) may be positive. Later, regrowth of shorter hairs with tapered ends may be seen.
- **Underlying causes of hair loss** (particularly in effluvium), but less common in men than women, include:
  - Thyroid disease (hypo- and hyperthyroidism) and other endocrine disorders.
  - Drugs, such as those implicated in telogen effluvium (for example antidepressants, anticoagulants, cancer treatments, and hormonal treatments).
  - Iron deficiency and poor nutritional status.
  - Severe pyrexial infection.
  - Systemic disease, such as systemic lupus erythematosus.
  - Malignancy.
- **Less common causes of hair loss** include:
  - **Alopecia areata** — this can occasionally present as diffuse hair loss (see the CKS topic on [Alopecia areata](#)).
  - **Trichotillomania** — a psychiatric condition in which people pull their hair out. It may be associated with obsessive-compulsive disorder and is less common in males than females. Hair loss is asymmetrical and has an unusual shape. Single or multiple areas can be affected, including eyebrows and eyelashes.
  - **Traction alopecia** — such as from styling that involves hair being pulled back.
  - **Hair fragility from chemical application** — such as bleaching.

#### **Basis for recommendation**

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This information is based on expert opinion from two guidelines [[Drake et al, 1996](#); [Blume-Peytavi et al, 2010](#)] and expert opinion from review articles [[Shapiro et al, 2000](#); [Hillman and Blume-Peytavi, 2009](#)].

## What general advice should I give men with androgenetic alopecia?

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- Inform the man, where possible, what he may expect in terms of continuing hair loss.
- Pharmaceutical treatments may be best viewed as preventing progression of hair loss, and this may be difficult to detect.
- Discuss available treatment options, including non-drug options which provide aesthetic coverage of the scalp (see [Treatment](#)).
- Hair may be shampooed as frequently as desired without fear of worsening hair loss.
- Counselling or support groups may be of value if the man requires further support, such as Hairline International ([www.hairlineinternational.com](http://www.hairlineinternational.com)).

### Basis for recommendation

These recommendations are based on expert opinion from two guidelines [[Drake et al, 1996](#); [Blume-Peytavi et al, 2010](#)] and advice from CKS expert reviewers.

## How should I treat men with androgenetic alopecia?

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**Discuss expectations, wishes, and goals, give [general advice](#), and discuss the following management options:**

- **Doing nothing** is likely to be the best option for most men.
- **Using a medical treatment.** Two drugs are available for use in men. Neither is prescribable on the NHS and they are expensive. There are three options:
  - Twice daily application of minoxidil 2% — available over the counter or on private prescription.
  - Twice daily application of minoxidil 5% (may be slightly more effective than the 2% strength, but carries a higher risk of scalp irritation) — available over the counter or on private prescription.
  - Oral finasteride 1 mg daily — available on private prescription only.
- If the man opts for a medical treatment, choosing between topical minoxidil or oral finasteride depends principally on the man's preference for either tablets or twice daily topical application. The decision is informed by the following:
  - There is no good-quality evidence that one is better than the other.

- Results are frequently underwhelming. Most men discontinue using any medications due to dissatisfaction with results.
- Both medications work better the earlier they are taken and are much less effective when alopecia is established.
- Hair regrowth is not usually noticed for at least 4 months. Some experts recommend a trial period of 6–12 months.
- Both need to be taken indefinitely to maintain any effect, as benefits (and adverse effects) disappear when stopped, sometimes with a period of rebound shedding.
- Both medications are costly options in the long term.
- Both share good safety profiles but have different adverse effects.
- Finasteride may cause adverse sexual effects in a small number (2%) of men during usage of the medication.
- Topical minoxidil may cause scalp irritation.
- If the decision is made to recommend topical minoxidil, a reasonable approach would be to initiate minoxidil 2%, and, if this is tolerated, to then go straight up to 5% to maximize the effect.
- **Consider use of [aesthetic options](#).**

### **Aesthetic options**

- **Hairpieces and wigs** — can be interwoven (these are more expensive and need regular readjustment) or worn on top of the man's own hair.
  - In certain circumstances, men on low incomes may be eligible for free or reduced cost wigs on the NHS.
  - More information on buying wigs and NHS policy is available at [www.nhs.uk/wigs](http://www.nhs.uk/wigs).
- **Other cosmetic options** to camouflage hair loss are not prescribable on the NHS. They include:
  - **Hairstyling** — waving, dyeing, sprays, and mousses.
  - **Hair camouflage products** — which provide scalp cover.

- **Hair extensions** — which provide fullness but may result in further pulling and traction on existing follicles.
- **Surgical hair transplantation** for androgenetic alopecia is not available on the NHS and the cost may be prohibitive.
- Modern techniques, although costly, use micrografting to produce a more natural appearance than older techniques which transplanted plugs of follicles.

### **Basis for recommendation**

This recommendation is based on evidence from randomized controlled trials and expert opinion from review articles [[Sinclair, 1998](#); [Shapiro et al, 2000](#)].

### **Doing nothing**

- Expert opinion recommends that, for the vast majority of men, the option of doing nothing is most appropriate [[Sinclair, 1998](#)]. It is cheap and avoids any risk of side effects, and many of these men will never present to medical services.

### **Minoxidil**

- Topical minoxidil 2% has been shown to promote hair growth in [evidence](#) from several clinical studies.
- There is [evidence](#) that topical minoxidil 5% is more effective than lower concentrations at improving hair counts; however, differences in perceived improvement are less convincing and likely to be modest, and there is a higher risk of local scalp irritation.
- The best responders are thought to be those in whom the balding process is early and not severe [[Mapar and Omidian, 2007](#)].
- Minoxidil needs to be used indefinitely to maintain its effect. There is [evidence](#) that long-term adherence to treatment is poor in most men, with dissatisfaction with cosmetic results being the most common reason for stopping.
- There is no evidence on which strength of minoxidil to initiate. CKS expert reviewers have different approaches. There was a preference for starting with minoxidil 2% and then going straight up to 5% to minimize adverse effects. Others start at minoxidil 5% and go down to 2% if irritation occurs. One initiated finasteride as first line.
- The recommendation to try minoxidil for 6–12 months is based on CKS expert reviewers.



## Finasteride

- The use of finasteride in men is supported by [evidence](#) from large randomized controlled trials (RCTs), which demonstrate that hair growth peaks at about 1 year, and although there is a slight decline thereafter, measures of hair density stay above baseline values.
- Finasteride has a good safety profile.
- Approximately 2% of men develop mild sexual adverse effects which resolve when the medication is discontinued [[Rogers and Avram, 2008](#)].
- An increased risk of breast cancer with finasteride cannot be excluded [[MHRA, 2009](#)].
- It lowers Prostate Specific Antigen levels but the consensus among most physicians is that it is neither a preventer nor a promoter of prostate cancer [[Avram and Rogers, 2009](#)].
- Long-term adherence to treatment is likely to be poor, as the drop-out rate over a 5-year period under trial conditions was high — see [Oral finasteride \(up to 5 years\)](#).

## Choice of medication

- There is insufficient [evidence](#) to determine the relative efficacy of finasteride compared with topical minoxidil. CKS found no blinded RCTs which have studied this. Two open trials concluded that growth of hair in men taking finasteride was greater than in men using minoxidil 2% or 5%, but these results need confirmation in larger and better studies.

## Combining medical treatments

- There is insufficient [evidence](#) to recommend combination treatment with topical minoxidil and oral finasteride, and this would add considerably to the cost of treatment for the individual.

## Aesthetic options and hair transplantation

- Information on hair transplantation is based on an expert review [[Avram and Rogers, 2009](#)].
- Unless part of a reconstructive surgery, hair transplantation is considered cosmetic surgery and is not covered by the NHS. It is therefore important to consider both the risk and price of surgical hair treatments. Many people cannot afford this type of elective surgery.
- Cloning hair is another possibility for the future, but expert reviewers advised that studies have been disappointing and the expense of transplanting will still be prohibitive for most.

## When should I refer a man with androgenic alopecia?

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- Referral to a dermatologist is not usually necessary.
- Consider appropriate referral in men with:
  - Atypical presentation or uncertain diagnosis.
  - Possible underlying condition requiring treatment in secondary care.
  - Requirement for further psychological support.

### Basis for recommendation

Recommendations for referral are based good clinical practice extrapolated from information in two guidelines [[Drake et al, 1996](#); [Blume-Peytavi et al, 2010](#)].

### Prescriptions

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For information on contraindications, cautions, drug interactions, and adverse effects, see the electronic Medicines Compendium (eMC) (<http://emc.medicines.org.uk>), or the British National Formulary (BNF) ([www.bnf.org](http://www.bnf.org)).

### Topical minoxidil (private prescription)

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#### Age from 18 to 65 years

##### Minoxidil 2% solution

Minoxidil 2% solution  
Apply 1ml to the affected area(s) of hair loss on the scalp twice a day.  
Supply 60 ml.

**Age:** from 18 years to 65 years

**Licensed use:** yes

**Private prescription:** yes

**Patient information:** Allow hair to dry naturally. Wash your hands after use.

##### Minoxidil 5% solution

Minoxidil 5% solution  
Apply 1ml to the affected area(s) of hair loss on the scalp twice a day.  
Supply 60 ml.

**Age:** from 18 years to 65 years

**Licensed use:** yes

**Private prescription:** yes

**Patient information:** Allow hair to dry naturally. Wash your hands after use.

## Finasteride (private prescription)

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### Age from 18 years onwards

#### Finasteride 1mg tablets

Finasteride 1mg tablets

Take one tablet once a day.

Supply 28 tablets.

**Age:** from 18 years onwards

**Licensed use:** yes

**Private prescription:** yes