CONDITION

Baldness

Learn about common patterns and causes of baldness, how hair loss is diagnosed, available treatments, and when to seek medical care.

WHAT IT IS
Partial or complete hair loss

BODY SYSTEM
Skin and hair

MAIN SYMPTOMS
Receding hairline, thinning crown, widening center part, bald patches

WHAT CAUSES IT
Inherited, immune, infection, or other triggers

HOW IT IS DIAGNOSED
Scalp examination, dermoscopy, sometimes scalp biopsy

MAIN TREATMENT
Hair-loss medicines, procedures, and cause-specific care

CAN IT BE CURED?
Sometimes - reversible causes may improve

IS IT AN EMERGENCY?
Sometimes - trouble breathing after treatment

LONG-TERM OUTLOOK
Often gradual, but scarring can cause permanent loss

Overview

Baldness is partial or complete hair loss from areas where hair normally grows. The medical term for hair loss is alopecia . Although baldness often refers to scalp hair loss, alopecia can affect eyebrows, eyelashes, facial hair, or body hair.

The most common form is androgenetic alopecia , also called male-pattern or female-pattern hair loss. It develops when inherited sensitivity to hormones causes certain hair follicles to shrink. The follicles produce shorter, finer hairs before they may stop making visible hair.

Pattern hair loss is usually gradual and does not damage physical health. However, it can affect self-image, confidence, and emotional well-being. It is also important to distinguish pattern hair loss from conditions that may require different treatment, such as autoimmune disease, scalp infection, medication-related shedding, or scarring inflammation.

Not all hair loss is permanent. Some types improve after an illness, nutritional problem, medication change, or other trigger is addressed. Hair loss caused by destroyed or scarred follicles is more likely to be permanent. Early evaluation can be helpful when loss is sudden, patchy, painful, or accompanied by scalp changes.

Symptoms

Hair loss may develop slowly over years or appear within weeks. The pattern and speed of change provide useful clues about the cause.

Common features of male-pattern hair loss include:

Female-pattern hair loss more often causes widening of the center part and reduced density over the top of the scalp. The front hairline may remain mostly intact. Complete baldness is uncommon with this pattern.

Other types of alopecia can look different. Alopecia areata , an autoimmune condition, often causes smooth, round or oval bald patches. Telogen effluvium causes more widespread shedding, sometimes noticed as extra hair in the shower, on a brush, or on clothing. It often begins several months after a major illness, surgery, childbirth, severe stress, rapid weight loss, or another physical strain.

Symptoms that suggest inflammation, infection, or scarring include redness, scaling, crusting, pustules, burning, pain, or intense itching. Scarring alopecia may make the scalp look smooth and shiny because follicle openings have been lost.

It is normal to shed some hair each day. A noticeable change from your usual density, hairline, or amount of shedding is more useful than trying to count individual hairs.

- A receding hairline, often beginning near the temples
- Thinning at the crown or top of the scalp
- Gradual enlargement of bald areas
- A rim of denser hair around the sides and back of the head

Causes and risk factors

Androgenetic alopecia results from a combination of genetics, age, and hormone effects. In susceptible scalp follicles, a hormone called dihydrotestosterone , or DHT, shortens the hair growth phase. Each new hair may become finer and shorter. A family history on either side of the family can increase the likelihood of pattern hair loss.

Age is another factor. Pattern loss can begin after puberty and usually becomes more noticeable over time. It can occur in people of any sex, although the visible pattern often differs.

Other causes of hair loss include:

Hormonal changes may uncover or worsen pattern hair loss. In some women, irregular periods, increased facial hair, or acne may suggest an androgen-related condition that deserves evaluation. These symptoms do not identify a cause by themselves.

Hair products, frequent shampooing, and ordinary hat use do not cause hereditary baldness. Shampooing may make loose hairs more visible, but it does not usually increase the underlying rate of shedding.

- Alopecia areata: The immune system mistakenly attacks hair follicles.
- Telogen effluvium: Many follicles enter a resting phase after illness, surgery, childbirth, major stress, rapid weight change, or nutritional deficiency.
- Traction alopecia: Repeated tension from tight braids, extensions, ponytails, or headwear damages follicles.
- Tinea capitis: A fungal scalp infection that is more common in children.
- Scarring alopecia: Inflammation destroys follicles and replaces them with scar tissue.
- Hair-shaft damage: Heat, bleach, chemical straightening, and rough handling can cause breakage that resembles hair loss.
- Medical conditions: Thyroid disease, iron deficiency, and some autoimmune disorders may contribute.
- Medicines and medical treatments: Certain drugs and cancer treatments can cause temporary or lasting loss.

Diagnosis

A clinician usually begins by asking when the hair loss started, how quickly it progressed, and whether close relatives have similar thinning. Other useful information includes recent illnesses, pregnancy, weight changes, diet, stress, hair-care practices, medical conditions, and medicines or supplements.

The scalp examination looks at the location of thinning, hair thickness, breakage, inflammation, scale, and follicle openings. A dermatologist may use dermoscopy , which is examination with a lighted magnifying device, to see the follicles more clearly.

A gentle hair-pull test can help assess active shedding. Photographs may be taken so that density and hairline changes can be compared over time.

Blood tests are not required for every person with typical pattern hair loss. They may be appropriate when the history or examination suggests thyroid disease, iron deficiency, hormonal changes, nutritional problems, or another medical cause. Testing should be directed by symptoms rather than ordered as a broad screening panel.

A scalp biopsy is occasionally needed. During this procedure, a small piece of numbed scalp is removed and examined under a microscope. It can help distinguish pattern loss from inflammatory or scarring alopecia when the diagnosis remains uncertain.

Treatment and management

Treatment depends on the type of hair loss, how long it has been present, and the person's goals. Some people prefer no medical treatment. Hair styling changes, scalp concealers, wigs, hairpieces, hats, or scarves are reasonable options.

For pattern hair loss, treatment generally works best while follicles are still producing hair. It is more likely to slow further loss or produce modest thickening than to restore a full head of hair.

Topical minoxidil is available without a prescription and is used for male-pattern and female-pattern hair loss. It is applied to the scalp rather than the hair. Results usually require consistent, long-term use, and benefits gradually fade after treatment stops. Temporary increased shedding can occur early in treatment. Possible adverse effects include scalp dryness, irritation, and unwanted facial hair if the medicine spreads beyond the scalp.

Oral minoxidil is sometimes prescribed off-label, meaning the medication is being used in a way not specifically approved for hair loss. It can affect blood pressure, heart rate, and fluid balance, so it requires medical assessment and monitoring.

Finasteride is a prescription tablet approved for male-pattern hair loss in men. It lowers DHT levels and may slow loss or improve coverage in some patients. Possible adverse effects include sexual symptoms. It can also affect the interpretation of prostate-specific antigen, or PSA, blood tests. Finasteride is not used during pregnancy because of potential harm to a developing fetus.

Some clinicians prescribe antiandrogen medicines, such as spironolactone, off-label for selected women with pattern hair loss. These medicines are not appropriate for everyone and require discussion of pregnancy safety, side effects, and monitoring.

A hair transplant moves follicles from areas with denser growth to thinning or bald areas. It does not create new follicles, and untreated hair loss may continue around the transplanted

hair. Results depend on having enough stable donor hair and realistic expectations.

Low-level laser devices and platelet-rich plasma injections are also offered for pattern hair loss. Some studies report improvement, but results vary, treatment methods are not standardized, and insurance may not cover them.

Other forms of hair loss need cause-specific care. Examples include antifungal medicine for tinea capitis, reducing tension for traction alopecia, and anti-inflammatory treatment for certain scarring conditions. Telogen effluvium often improves after the trigger resolves, although visible recovery can take months. Nutritional supplements are helpful only when a deficiency or another specific need is present. Excessive doses of some nutrients can worsen hair loss or cause other health problems.

Complications

Baldness itself usually does not cause serious physical complications. Exposed scalp skin can burn more easily, so shade, hats, and sunscreen are useful when spending time outdoors.

The emotional effects can be significant. Hair loss may contribute to embarrassment, reduced confidence, social withdrawal, anxiety, or low mood. Support from a clinician, counselor, support group, or trusted community can help.

Scarring alopecia can cause permanent loss if inflammation destroys the follicles. Traction alopecia may also become permanent when pulling continues for a long time. Treating these conditions early may help preserve remaining hair.

Hair-loss treatments can cause unwanted effects or interact with a person's health conditions. Products sold online may contain undisclosed ingredients or make unsupported claims. Discuss oral medicines, supplements, or compounded products with a qualified clinician.

Follow up

Routine follow-up is useful after starting treatment because changes in hair growth are slow. Clinicians may compare standardized photographs, check for side effects, and decide whether the plan remains worthwhile. It often takes several months to judge a treatment fairly.

Arrange a routine medical appointment if hair loss is persistent, gradually worsening, emotionally distressing, or difficult to explain.

Seek prompt medical assessment for:

Baldness is rarely an emergency. Seek emergency care for trouble breathing, swelling of the

face or throat, fainting, or another severe reaction after using a hair-loss product or medicine.

- Sudden or rapidly increasing hair loss
- Smooth bald patches or loss of eyebrows and eyelashes
- Scalp pain, burning, redness, heavy scale, crusting, or pus
- A shiny area where follicle openings are disappearing
- Hair loss with fatigue, unexplained weight change, menstrual changes, or other new symptoms
- Hair loss in a child
- Shedding that begins after starting or changing a medicine

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