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## Patterned hair loss

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### Summary

- All men and women will develop some degree of hair loss as they age.
  - There are a number of medical treatments available to slow or reduce hair loss and stimulate partial regrowth.
  - Hair transplantation can be used to restore hair to bald scalps when medical therapy does not achieve a satisfactory result.
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Patterned hair loss is a progressive hair loss that occurs in a specific pattern. The pattern in men is different to the pattern in women. Men develop recession at the temples, thinning and eventually a bald spot on the top of the head (vertex scalp), then ultimately total baldness over the entire crown. Hair above the ears and at the back of the head is relatively spared.

In contrast, women develop diffuse thinning over the entire scalp that is most pronounced over the crown. Baldness is only seen in a minority of women (less than five per cent).

Patterned baldness is the most common cause of hair loss in both men and women, and is the result of genetic and hormonal factors. Hereditary baldness is so common that it is considered to be a normal part of the ageing process.

All men and women will be affected by patterned hair loss at some stage in their lives. While the majority of men have developed temporal recession by their mid 20s and noticeable balding by their mid 50s, for most women, hair loss is mild and only occurs later in life. However, when hair loss is premature or severe, it can cause distress. A range of treatments is available to slow or reduce hair loss, and stimulate partial regrowth

### How hair grows

The human body is completely covered with hair follicles, except on the palms of the hands, soles of the feet and lips. Most follicles are tiny, and many of the hairs they produce do not grow long enough to emerge out from the pore.

Hair is made from a protein called keratin. The only living part of the hair is the root (sometimes known as the bulb), which is attached to the base of the follicle. The follicle supplies oxygen and nutrients to the root, and lubricates the hair shaft with an oily substance called sebum.

Hair is in a constant cycle of growth, rest and renewal. On the scalp, there are approximately 100,000 hair follicles. Over the course of three years, every one of these follicles will produce a hair that grows, rests, falls out and then regrows. That means that every 1,000 days, you shed 100,000 hairs. This equates to 100 hairs shed every day.

As long as the new hair that grows from that follicle is the same as the one it replaces, the hair density will remain constant. In patterned hair loss, hormones affect the follicle, making it smaller and the new hair becomes shorter and finer than the one it replaces. Eventually, the new hairs are so short and fine they become invisible and the scalp becomes bald.

### Causes of hair loss

It is likely that several genes determine susceptibility to baldness. Some of these genes come from your mother's side and some from your father's side of the family. Identical twins lose hair at the same age, at the same rate and in the same pattern. This indicates that genetic factors are more important than environmental factors in causing hair loss.

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Androgenetic hair loss is caused by androgen hormones (produced in different amounts by both men and women) that affect the hair follicles in people with a genetic susceptibility.

Some people think that stress, diet, wearing hats, frequent washing and drinking alcohol are causes of hair loss, but researchers have found no link between any of these activities and patterned hair loss. There is some uncertainty about smoking cigarettes and hair loss, but the evidence is not strong.

### **Male pattern baldness (androgenic alopecia)**

While there are a number of treatments available for male pattern baldness, there is no cure. Treatments include minoxidil, and finasteride. Minoxidil lotion is available over the counter from pharmacies, but finasteride tablets are only available on prescription from your doctor. Cosmetic options include camouflage sprays, wigs and hair transplant surgery.

### **Hair loss in women (androgenetic alopecia)**

Hair loss in women produces scattered thinning over the top of the scalp rather than a bald spot. Patterned hair loss occurs in over 55 per cent of women as they age. For most women, the hair loss is subtle, but about 20 per cent of women develop moderate or severe hair loss.

A number of treatments are available for female pattern hair loss, including topical minoxidil lotion (not recommended for pregnant or breastfeeding women), and tablets such as spironolactone, which have antiandrogen properties (they lower the levels of male hormones). These are available on prescription and require a doctor's supervision.

### **Treatment for hair loss**

Although there is no cure for hair loss, a number of treatments can slow or reduce hair loss, stimulate partial regrowth or replace damaged hair. Surgical hair transplantation can help some men who have advanced balding.

Despite advances in our understanding of hair loss, there are limits to current treatment. In particular, age-related hair loss and inherited forms of hair loss are difficult to reverse, although treatment may prevent further loss and produce partial regrowth. Non-surgical treatments include lotions and tablets. These generally need to be used continuously for the benefits to be maintained. If you stop treatment, regrowth will cease and hair loss will resume.

Cosmetic options include wigs and hairpieces.

A number of other treatments have been suggested for hair loss, including massage, vitamin supplements, herbal remedies (such as saw palmetto), zinc, amino acids, hair lotions and tonics. None of these have been shown to promote hair growth or prevent hair loss. There is also no scientific evidence that the use of lasers is effective.

If you are unsure, consult with your doctor before starting treatment.

### **Minoxidil**

Minoxidil lotion has been available in Australia since the 1970s. A number of different brands are available from pharmacies without a prescription. Drops are applied to the scalp morning and night and rubbed in. There is also a foam preparation. Hair regrowth generally takes six months to become apparent.

### **Finasteride**

Finasteride is the active ingredient in the men's hair-loss treatment Propecia, which has been available in Australia since the late 1990s. One tablet a day will arrest further hair loss in over 95 per cent of men and stimulate partial hair regrowth in two thirds of men. Regrowth may be apparent at six months, but can take up to two years to be visible.

Side effects are uncommon, but include reduced libido and sexual dysfunction. This occurs in around one per cent of men taking finasteride. Finasteride requires a prescription from your doctor.

### **Spironolactone**

Spironolactone has been widely used in Australia since the 1960s to treat high blood pressure and fluid retention. It blocks the effect of androgen hormones. In women, androgens can cause oily skin, acne, unwanted facial and

body hair, and hair loss on the scalp. Women can use spironolactone to treat all of these conditions, but requires a prescription from your doctor.

Pregnant or breastfeeding women should not use spironolactone.

### **Cyproterone acetate**

Cyproterone acetate was also developed in the 1960s. It blocks the effect of androgen hormones and is an alternative to spironolactone for women with patterned hair loss. It is a weak progestogen and is found in some oral contraceptives (the pill). Cyproterone acetate can also be used to treat acne, unwanted facial and body hair, and hereditary hair loss in women. Cyproterone acetate requires a prescription from your doctor.

Cyproterone acetate is not recommended as a treatment for hair loss in men.

### **Hair transplantation surgery**

Hair transplantation is a surgical procedure for the treatment of hair loss that first became popular in the 1950s. Originally, large plugs of hair were used, which sometimes led to unsatisfactory and unnatural-looking results.

These days, small mini- and micro-plugs of skin, each containing between one and five hairs, are used. Unlike the original large plugs, this modern technique does not produce very thick or dense hair growth. It appears more natural and, in many cases, is undetectable as a transplant.

Types of hair loss that respond best to hair transplantation include:

- androgenetic hair loss in men – the most common type of baldness that can be helped by hair transplantation
- hair loss due to accidents and operations.

The surgeon removes hair follicles from the back or sides of the scalp (where the hair is less likely to fall out) and transfers them to the bald areas. The surgeon places the hair follicles in such a way that they receive adequate blood flow during the healing process. The transplant session may take several hours.

A person may need several treatment sessions to get satisfactory coverage of a bald scalp. Hair will grow from the transplanted follicles. A sedative is usually given prior to the procedure. Local anaesthetic is used at the hair removal (donor) and recipient sites. As the anaesthetic wears off, you may notice some discomfort. This can be eased with simple pain-relieving medications.

### **Complications of hair transplantation surgery**

Complications of hair transplant surgery can include:

- Infection – this can occur because the skin is broken to perform the procedure. It can be treated with antibiotics.
- Bleeding – this is usually controlled through careful post-operative care.
- Scarring – this may occur at the site of removal of the donor follicles.
- Temporary, operation-induced hair loss – known as telogen effluvium, can occur with hair transplantation, as well as some other operations. It occurs in approximately five per cent of people.
- Unacceptable cosmetic results – scarring and poor cosmetic results are more common when hair transplants are carried out by inexperienced practitioners.

Many hair clinics offer hair transplantation. Specialist dermatologists are best qualified to properly advise about this surgery and have the most knowledge about hair in health and disease.

### **Where to get help**

- Your **GP (doctor)**
- **Dermatologist**
- **Australasian College of Dermatologists** Tel. **1300 361 821**
- Wigmaker
- Hair transplant surgeon

**This page has been produced in consultation with and approved by:**

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