



## Hair loss

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### Introduction

In today's society, many people aspire to achieve a healthy appearance and an active lifestyle. This includes having strong, voluminous and shiny hair. If the condition of a person's hair deteriorates and the sudden development of hair loss occurs, this can be an emotionally distressing and embarrassing issue for an individual.<sup>1,2</sup>

### Classification of hair loss

Hair loss, also known as alopecia, may happen during any stage of an individual's life. Alopecia can be classified as scarring and non-scarring hair loss, and includes several different types, as described in Table I.<sup>3</sup>

**Scarring alopecia** is identified by the formation of scar tissue on the scalp due to an underlying disorder or pathology that causes permanent damage to the hair follicle and results in no regrowth of the hair.<sup>4,5</sup>

**Non-scarring alopecia** is characterised by thinning of hair. A number of factors can contribute to this class of alopecia, such as reduction in the size of the hair follicle, external factors that influence the cycle of hair growth or cause damage to the hair follicle or breakages to the hair. The most commonly presented non-scarring type of hair loss is androgenetic alopecia. This type of hair loss occurs more frequently in males than in females.<sup>4,5,6</sup>

### Signs and Symptoms

#### Normal hair growth

Normal hair growth occurs in a cycle of three phases, firstly the anagen phase, secondly the catagen phase and lastly the telogen phase.<sup>1,11</sup>

The anagen phase is when hair is actively growing from the hair follicle, as depicted in Figure 1. Approximately 90% of hairs are in the anagen phase and this can last from a couple of months to several years. The second phase, catagen, is when the hair begins to degenerate. Less than 10% of hairs are undergoing this phase. Lastly, during the telogen phase or also known as the resting phase, the hair follicle sheds the hair. Between 5 and 10% of hairs will be shed during the last phase of the cycle.<sup>1,9,11</sup>

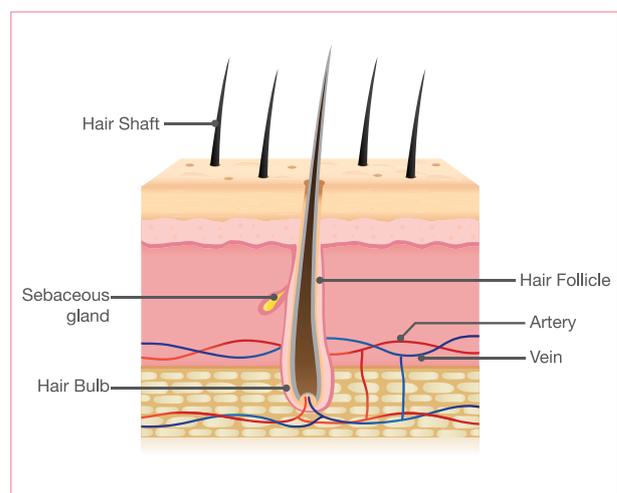


Figure 1. The hair follicle

### Hair loss patterns

Hair loss naturally takes place over the entire body but is most noticeable on the scalp. On average 30–150 hairs are shed daily. When patients develop a form of alopecia, they will begin to notice that hair loss far exceeds this daily average during brushing or washing in the shower.<sup>1,6,9</sup>

**Table I.** Types of alopecia<sup>1,3,6-11</sup>

Type of alopecia	Cause	Signs
<b>Non-scarring:</b>		
Androgenetic alopecia	History of hair loss within a family.	Male and female pattern hair loss.
Anagen effluvium	Chemotherapy	Thinning of hair due to diffuse hair loss over the entire scalp. Occurs days to weeks after chemotherapy.
Alopecia areata	Inflammation caused by unknown factors. Is associated with some autoimmune disorders. For example, but not limited to, diabetes, thyroid disease, or lupus.	Smooth bald patches appear on scalp. Hair pigment is affected and hair may turn white.
Trichorrhexis nodosa/Traction alopecia	Trauma to the hair follicle or extreme stress on hair shafts due to pulling of hair; this includes hair styling, styling with a flat iron and over brushing, as well as patients continually scratching the scalp.	Seen mostly in women. Hairs break because of trauma and damage to hair follicle can cause permanent damage preventing hair growth. Hair loss can occur on both temporal sides of the head due to tying back hair too tightly or a receding hairline from the forehead.
Telogen effluvium	External factors that disrupt the normal hair cycle: a traumatic event, another disease and side-effects to medication, weight loss or severe dieting, malnutrition and iron deficiency.	Hair is shed from all over the head. Increased hair loss is more obvious during washing and brushing. More hair is also found on the pillow after sleeping.
Trichotillomania	Psychological-onset. Patients have a constant compulsion to pull out their hair. Patients should be referred to a psychiatrist.	Patchy regions on the head, as well as eyebrows and some patients also pull out their eyelashes.
Tinea capitis	A fungal infection of the hair follicle.	Bare patches on scalp due to hair lost from infected hair follicles.
<b>Scarring:</b>		
Trauma to hair follicles	Injury or burns, severe fungal, bacterial or viral infections.	Localised bald patches on scalp due to scarring.
Cicatricial alopecia	Autoimmune disease: Discoid lupus erythematosus. The inflammation of the hair follicle causes permanent damage. Scarring occurs which prevents hair growth.	Red scaly patches or lesions occur on the skin/scalp.

Hair loss patterns differ according to the cause. Generally, hair loss patterns are either patchy or diffuse. A patchy pattern is when large clumps of hair fall out and bald patches are seen all over the head. A diffuse pattern is when the hair on the head begins to thin out all over the scalp.<sup>1,3,6,7,9,12</sup>

Male and female patients can experience different hair loss patterns with androgenetic areata. Males generally experience hair thinning, resulting in a receding hairline from the forehead and/or balding around the crown of the head. Hair loss in females causes thinning around the crown and can have a 'Christmas tree' pattern.<sup>1,3,6,7,9,12</sup>

## Treatment

Various treatments are available to patients with alopecia, but this depends on the underlying cause of the hair loss. Once the family doctor or dermatologist has done a physical examination and the necessary laboratory tests, the correct treatment can be prescribed. The range of treatments includes medication, the use of wigs, laser treatment or surgery.

## Medication

Androgenetic alopecia is the most common form of hair loss in the general population and can be treated with an over-the-counter 2% or 5% Minoxidil topical solution.<sup>1</sup>

Patients who exhibit the signs and symptoms of any of the other types of alopecia should consult with their family physicians.

## Non-medicinal treatments

Depending on the severity of hair loss, patients may use wigs or toupées for aesthetic purposes to avoid feeling self-conscious in public or at social events.

In recent years, the development of laser or light therapy to stimulate hair growth has provided some patients with a 'home-based' treatment. However, more research and clinical placebo trials are needed to determine and validate the exact 'biological mechanism' of this therapy as an effective treatment for alopecia. The improvements in surgical treatments, such as hair transplants, provide patients with another alternative. However, surgery is considered an invasive and expensive therapy.<sup>6</sup>

## Conclusion

Although patients with alopecia can experience feeling undignified and stigmatised, as there are no 'quick-fixes' for treating the disorder, there is a silver lining. The continuous advancements of medical research and technology could provide a better and more 'natural-looking' solution for

patients. One such example is the research of cell-mediated treatment, where cells from a hair follicle are grown in the laboratory and induce hair follicle formation in epithelial (skin) cells.<sup>6</sup>

However, it is always of the utmost importance to advise patients to consult with their family physician or dermatologist if they present with any signs of hair loss, particularly if scarring occurs, for an accurate diagnosis of the type of alopecia. This will provide patients with the best possible care and treatment for their condition.

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