

## An overview of common causes of hair loss

A hair disorder is any condition in which the visible hair coverage over the skin falls outside of normal growth parameters. The definition of “normal hair growth” varies with gender, ethnicity, age, and often the particular opinion of the individual concerned. There are usually three wide categories of diseases that affect the hairs, namely hirsutism(excessive hair growth), alopecia(decreased hair growth) or structural hair abnormalities (see table1). The alopecia can also be subdivided into the cicatricial types and non-cicatricial types (see table 2). Some of the most commonly encountered alopecia in a dermatology practice will be discussed below.

Telogen effluvium can lead to diffuse hair loss all over the scalp. Unlike animals, human hairs grow in an asynchronous manner. Anagen is the active longest phase, lasting up to 4 or 5 years. Catagen is the phase where the hair ceases to grow and the hair bulb enters in an involution phase. This can last a few weeks. Following this, the follicle enters the telogen phase where it is shed over a three months period. This hair cycle is tightly regulated with most hairs in the anagen phase and any disturbance can lead to more hair entering in the falling phase, leading to noticeable hair loss. Telogen effluvium has many causes including high fevers, post surgery, crash dieting, psychological illness, use of certain medications and post partum. During pregnancy, hair grows luxuriantly because the hair cycle remains in anagen, but three months after delivery, the hairs that should have gone into catagen during pregnancy, fall out precipitously. This type of hair loss tends to improve with time.

Alopecia areata is a fairly common type of hair loss with no appreciable abnormality of the underlying skin. It affects both males and females equally and can range from a single localised patch of hair loss to loss of hair involving the whole body surface. In adults who have a mixture of grey and black hairs, the black hairs are preferentially shed and the grey hairs remain, which can account for the term “ becoming grey overnight”. This disease is caused by an organ-specific T cell-mediated defect, which targets the anagen stage hair follicles, leading to anagen unrest. Rarely, alopecia areata has been associated with other autoimmune diseases like diabetes mellitus, vitiligo and Hashimoto’s thyroiditis. There are many prognostic factors for this disease, however, early management will lead to the highest success rates. Treatment modalities available to dermatologists include the use of steroids, minoxidil, retinoids, irritants and sensitizers like dithranol and DPCP, UV light, cyclosporine and tacrolimus.

Androgenetic alopecia occurs as a result of altered hair growth cycling and hair follicle miniaturization, with transformation of terminal to vellus hair follicles and the production of shorter, finer hair shafts. The anagen phase reduces to a few months and there may be an increase in the telogen phase. This type of hair loss is hereditary and the 5 alpha reductase gene may play a role.

Male pattern baldness is very common in men, however, it can be encountered to a lesser extent in females as well. There is a variable degree of hair loss with retention of parietal and occipital hair. This condition is inherited as autosomal dominant. Patients suffering from this type of alopecia do benefit from 5 alpha reductase inhibitors.

The prevalence of traction alopecia is increasing in Africa. It tends to affect mainly people of African origin, who tend to have hairstyles that put stress on the hair roots. Cornrows and plaits can result in permanent receding of the hairline. This type of alopecia is far more common in women and very difficult to treat. In most cases patients end up wearing wigs.

How does one treat hair loss?

Firstly a good history is very important. It should include the age of onset, duration, whether the hair is being uprooted or is breaking, whether it is increased shedding or increased thinning. Other questions should include the medications being taken, past health, pregnancy, family history, diet, hair care, occupation and hobbies. Once all these have been answered and a full general medical examination has been concluded, the potential trigger factors for the hair disorders can be attributed to one or more of these categories: inflammation, genetics, environment or hormones.

It is only then that a treatment plan can be put forward. The objectives are to return an individual's hair follicle size, density and growth cycles to within normal parameters. Treatments fall into one of three categories: modifiers of the hair growth cycle (duration of anagen, catagen and telogen), modifiers of hair follicle size (terminal, intermediate and vellus hairs) and normalisation of hair density. Most patients with non-cicatricial alopecia can be expected to make a full recovery if treated early enough, however, some will never regain their hairs. In those cases, the wearing of a toupee or wig might be a solution, or in selected cases, the use of hair transplants may help.

Table 1: Structural defects of the hairs

1. Moniletrix  
The thickness of the shaft varies because of the intermittent absence of the hair medulla.
2. Pili torti  
A flattening of the hair and twisting through 180 degrees on its own axis, which results in fragility
3. Trichorrhexis nodosa  
The hair has localised loss of cells, leading to formation of nodes on the hair shaft. This leads to localised weakness of the hair.
4. Trichothiodystrophy  
A disorder of brittle hairs caused by sulphur deficiency
5. Menke's disease (kinky hair disease)  
A sex-linked recessive disorder associated with low serum copper and ceruloplasmin level leading to abnormal hair shafts.
6. Trichostasis spinulosa  
The production of multiple, vellus hairs from a single hair follicle

Table 2:

1. Non- cicatricial alopecia
  - A: Alopecia areata
  - B: Androgenetic alopecia
  - C: Telogen Effluvium
  - D: Trichotillomania
  - E: Traction alopecia
2. Cicatricial alopecia
  - A: Discoid lupus
  - B: Lichen planopilaris
  - C: Central centrifugal cicatricial alopecia
  - D: Pseudopelade de Brocq
  - Alopecia mucinosa
  - F: Keratosis follicularis spinulosa decalvans
  - F: Dissecting folliculitis
  - G: Acne keloidalis nuchae
  - H: Burns or other trauma to the scalp

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