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Prognosis Of Dermatology



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ABSTRACT

Hair loss (alopecia) affects men and women of all ages and often significantly affects social and psychologic well-being. Although alopecia has several causes, a careful history, close attention to the appearance of the hair loss, and a few simple studies can quickly narrow the potential diagnoses. The root cause for hair loss problem on the human scalp has not been fully understood. Today, hair loss or thinning, and hypertrichosis or hirsutism are common complaints in clinical dermatology, but patients seeking advice for their hair problem are not necessarily completely bald or overall haired. Hair loss sufferers spend billion of dollar annually on remedies ranging from drugs, vitamins to special tonics and shampoos. Patients consult for focal or diffuse effluvium, non-scarring or scarring alopecia, changes in hair structure or color and hair graying herbs and herbal drugs have created interest among the people by its clinically proven effect like hair loss. A good control of these key parameters by detumescence therapy on human scalp is found to be an effective and efficient approach for natural hair regrowth. Hair suffers aggression there can be some ailments to normal health of hair and cause trouble. The main problems associated with hair such as pigmentation problems (Fading), dandruff and falling of hair (Shedding). This article reviews the physiology of normal hair growth, common causes of hair loss, and treatments currently available for alopecia.

INTRODUCTION

Hair is a protein filament that grows through the epidermis from follicles deep within the dermis. The fine, soft hair found on many nonhuman mammals is typically called fur; wool is the characteristically curly hair found on sheep and goats. Found exclusively in mammals, hair is one of the defining characteristics of the mammalian class. Hair is an epidermal appendage that lies within the dermis. Each hair emerges from a tubular invagination called a follicle. The follicle resembles a narrow pocket within the skin as if a tiny finger had pushed the epidermis down into the Dermis and the underlying subcutaneous tissue. The lower extreme is penetrated by the Dermal Papilla an upward protrusion of connective tissue which produces microscopic cells of several kinds from which the hair is formed and developed by cellular elongation and keratinization. Hair is closely associated with sweat gland and sebaceous gland activity. Each hair-producing follicle with its sebaceous gland is known as a pilosebaceous unit.

The arrector pili muscle joins the wall of the follicle to the epidermis and is responsible for the erection of hairs and goose flesh during cold weather or emotional stresses. The hair shaft is currently believed to be a dead structure composed of cells which die after leaving the dermal papilla. As all follicles are established before birth no new ones are created thereafter. All characteristics are genetically determined. Their hair shaft – a keratinized structure composed of an outer cuticle (tile-like protective layer of keratinized cells) the cortex where cells are held firmly together, and an inner medulla where the cells are larger more loosely connected and partially separated by air spaces.

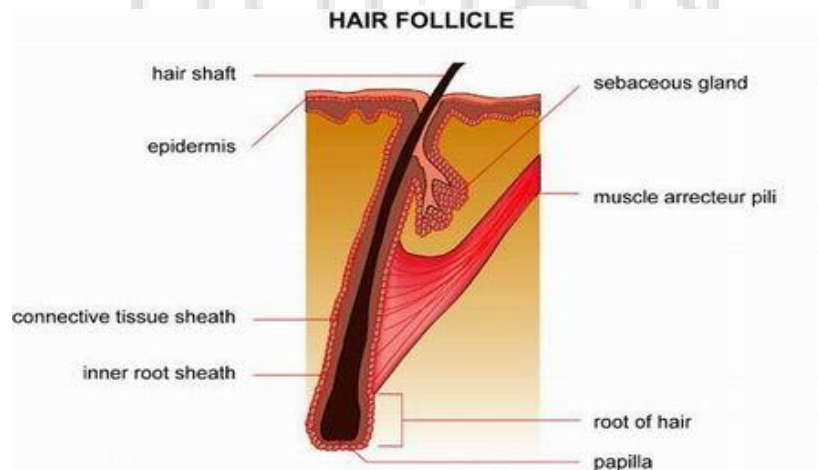


Fig.1: Stages of hair fall

The hair is approximately cylindrical. The hair can be divided into three parts length-wise:

1. The bulb, a swelling at the base which originates from the dermis.
2. The root, which is the hair lying beneath the skin surface.
3. The shaft, which is the hair above the skin surface.

In cross-section, there are also three parts:

1. The medulla, an area in the core which contains loose cells and air spaces.
2. The cortex, which contains densely, packed keratin.
3. The cuticle, which is a single layer of cells arranged like roof shingles.

Rate of growth

Normal Caucasian hair growth rate is 1-2 cm per month. Researchers have shown that this rate of growth may reduce beyond the length of approx 27cm. Afro-Caribbean hair growth rate is approximately half that of Caucasian, and due to the fragility of their multi-helical structure, rarely attain great length. Asian hair-shafts grow rapidly exceeding the average for Caucasians and may attain great length.

Hair Growth Cycle

Growth phase of about 30-45 days explaining why they are so much shorter than scalp hair. We all lose about 100 hairs per day, out of the 100,000 contained by the average scalp. Lifespan: The average lifespan of a single hair is 4.5 years; the hair then falls out and is replaced within 6 months by a new hair. Each hair follicle undergoes a cycle of activity. The hair grows to a maximum length, then hair growth ceases and the hair is shed and replaced. At any one time we only have around 85% of our hair on our head at a time, the rest being in the resting stages. The hair growth cycle has three distinctive phases:

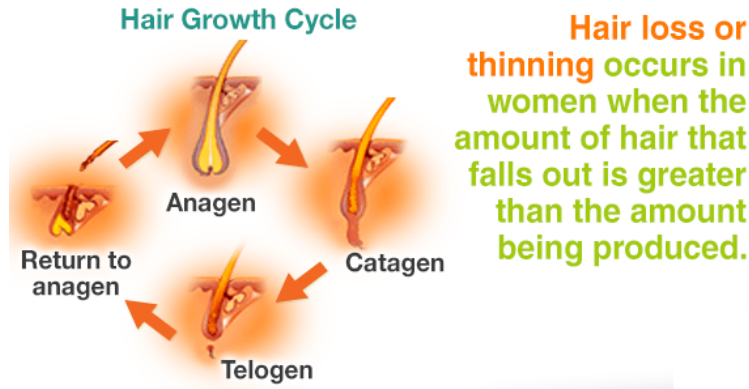


Fig.2: Growth cycle of hair

Anagen: the period of active growth.

Catagen: the period of breakdown and change.

Telogen: the resting stage before resumption of growth.

Anagen: The epidermal cells surrounding the dermal papilla form the germinal matrix or root of the hair. These cells are constantly dividing, and as new cells are formed they push the older ones upwards where they begin to change shape. By the time the cells are about one-third of the way up the follicle they are dead and fully keratinized. A scalp hair will grow actively for between one and a half and seven years (three years being an average growth period).

Catagen: This is the end of the active growth period, and is marked by changes occurring in the follicle. The hair stops growing and becomes detached from the base of the follicle forming a club hair. The hair bulb begins to break down, resulting in the follicle becoming shorter. A small section of the outer root sheath remains in contact with the group of cells that formed the papilla. This period of breakdown or change lasts about three weeks. As the inner root sheath breaks down, the hair remains in the follicle due to its shape. On average, 1% of follicles are in the catagen stage.

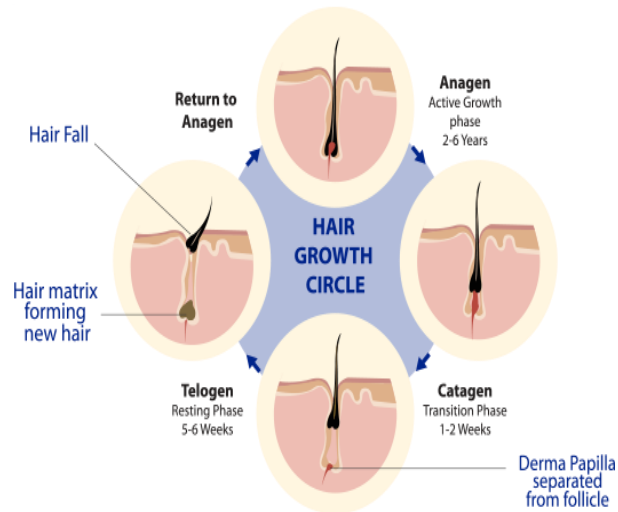


Fig.3: Hair growth cycle

Telogen: The section of remaining root sheath still in contact with the papilla is known as the secondary or root germ. It is from this germ that a new hair can grow. The shortened follicle rests for about three months. The hair may be brushed out at this time or at the onset of anagen. On average 14% of follicles are in the telogen stage. After the telogen stage, the cycle returns to anagen and the root germ begins to grow downwards and forms a new bulb around the dermal papilla. It is the lower end of the germ that forms the new bulb, producing a new hair. The upper part of the germ forms the new cells that lengthen the follicle below the club hair. The new hair may push the old hair out. Sometimes, therefore, you may see two hairs in the same follicle.

CAUSES

Physiologic

- Physiologic effluvium of the newborn
- Postpartum effluvium
- Early stages of androgenetic alopecia
- Injury or stress
- High or prolonged fever (e.g., malaria)
- Severe infection
- Severe chronic illness
- Severe psychologic stress (life-threatening situations)

- Major surgery
- Hypothyroidism and other endocrinopathies
- Severe dieting or malnutrition

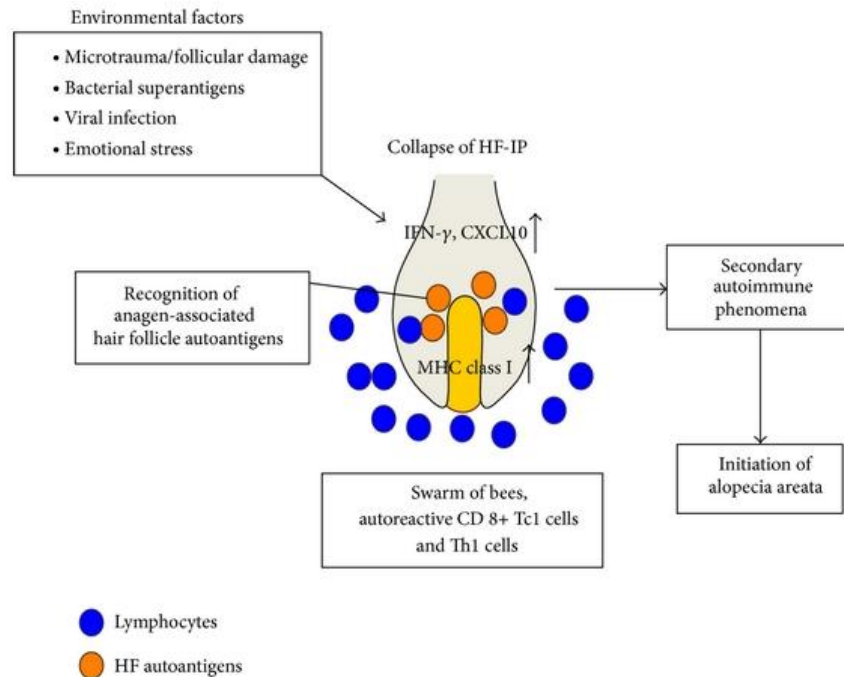


Fig.4: Causes of Hair loss

Drugs and toxins

- Ant keratinizing agents (e.g., etretinate [Tegison])
- Anticoagulants (especially heparin)
- Antithyroid agents
- Alkylating agents
- Anticonvulsants
- Hormones

EFFECTIVE FACTORS IN HAIR LOSS

Normally 90% of hair are in growth phase and 10% are in the resting phase and on average, about 50 to 80 hair during washing and combing are falling. So when a hair falls, a new hair

takes its place. The problem begins when the falling hair is further and faster than the growth of new hair or their growth cycle is short and fails to reach the maximum growth of anagen. In this case, after some time, the total number of hairs is reduced or hair is thinner and person may notice a decrease in the volume of hairs. This is the main cause of hair loss. Hair loss in men and women are different. 90% of men have some degree of alopecia. This factor is related to both genetic and hormonal reasons. Also, there are many different causes in women hair loss. One of the most common causes of female hair loss is iron deficiency. Because of monthly bleeding and difficulty in proper diet that some of them take, suffering from anemia or their body's iron stores are reduced. Usually what is seen in the women is reduction of density of hair, not bald. Various factors are effective in hair loss, some of which are only effective in women and some in men. Some of them are mentioned below.

1. Avoid Junk Food

It has been proven time and again that consumption of junk food can cause hair fall. Junk food contains excessive calories and no essential nutrients, which can eventually lead to hair loss. You can, instead, switch to including more of green leafy vegetables, protein-rich foods, and fruits in your diet.

2. Be Gentle With Wet Hair

Wet hair is more prone to breakage, which is why you must be gentle while handling it. The best way to dry wet hair is to pat it with a dry towel, instead of rubbing it harshly.

3. Exercise Regularly

Regular exercise enhances blood circulation and improves the flow of oxygen to your scalp, thereby controlling hair fall. Ideally exercise for about 30 minutes a day, five times a week.

4. Stay Hydrated

Drinking sufficient water is one more way of keeping hair fall at bay. Owing to our busy and sedentary lifestyles, we seldom remember the importance of keeping ourselves hydrated. Drink about six to eight glasses of filtered water on a regular basis.

5. Trim Your Hair Regularly

Split ends can also cause hair fall. To avoid this, keep trimming your hair periodically.

6. Avoid Steamy Showers

Hot water dehydrates the hair strands, making them brittle and vulnerable to breakage. Rinsing your hair with hot water also flushes out the essential oils of the scalp, which can lead to further shedding of hair. You can, instead, go for a shower with lukewarm or normal water.

7. Stay Away From Hot Styling Tools

Exposing your hair to high temperatures can destroy the vital proteins and damage your hair's protective cuticles. When this happens, the moisture balance of your hair gets disrupted, making it susceptible to breakage. Ideally, you can limit the usage of hot styling tools (including your blow-dryer) to not more than twice a week. Also, make it a point to apply a heat protection spray to reduce friction and protect your hair.

8. Don't Wash Your Hair Too Less (Or Too Much)

You can skip shampoo for a day, but make sure that doesn't become a habit. Not washing your hair for days together can lead to the accumulation of dirt, oil, and product residue that can clog the pores in your scalp. On the other hand, washing your hair too often (washing every day) might remove the essential oils your scalp needs. The best you can do is to wash your hair every two days, more so if you are prone to excessive sweating and use many hair products. Use a sulfate-free shampoo to prevent excessive dryness. Hair fall might be a serious problem. But like most serious problems out there, it can be prevented and treated with simple home remedies. Follow the above tips, and you will never have to worry about hair loss again.

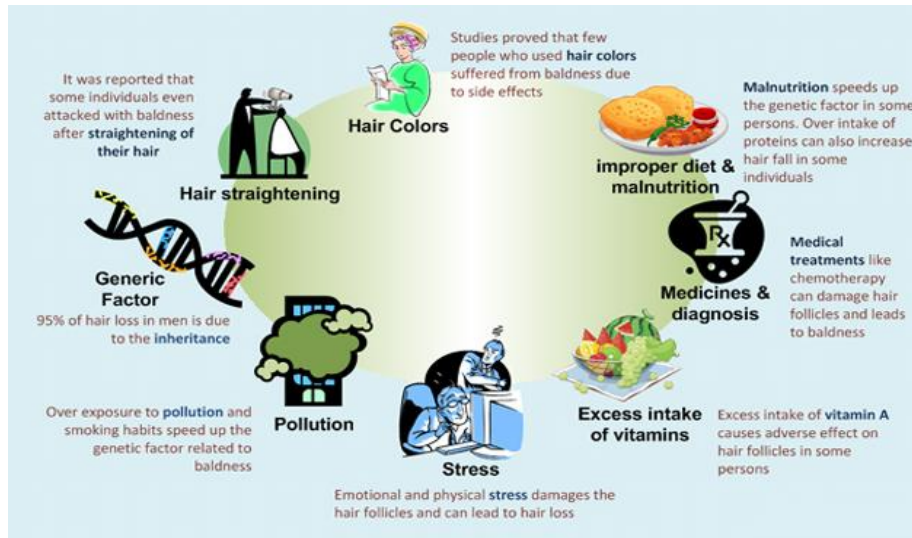


Fig.5: Reasons for hair loss

SIGNS AND SYMPTOMS

Signs of hair loss and hair loss conditions vary between men, women and children. However, people of any age or sex may notice more hair collecting in their hairbrush or in the shower drain. The signs of hair loss and hair conditions may include:

- Thinning hair on the scalp
- A receding hairline
- A horseshoe-shaped pattern that leaves the crown of the head exposed.
- Complete hair loss of all hair on the body
- Anemia
- Rapid weight loss



Fig 6: Symptoms of hair loss

TREATMENT

Anti-Hormonal Therapy

Reviews suggest that anti-hormonal therapy is helpful in treating female pattern alopecia in some women who have normal hormone levels. Spironolactone is an aldosterone antagonist employed in clinical practice as a potassium-sparing diuretic. It reduces adrenal androgen production and exerts competitive blockade on androgen receptors in target tissues. This medication has been used off-label in female pattern hair loss for over 20 years and it has been shown to arrest hair loss progression with a long-term safety profile. It should not be used in pregnancy due to its teratogenic effects. Cyproterone acetate is an androgen receptor blocker with strong progestational activity and a weak glucocorticoid action. It seems to decrease hair shedding but does not seem to promote regrowth.

The dose required for premenopausal women is 100 mg daily for 10 days of each menstrual cycle and postmenopausal women should use 50 mg daily continuously. Sinclair and colleagues performed an intervention study involving eighty female patients with FPHL to evaluate the efficacy of oral anti- androgen therapy in the management of women with FPHL. Forty patients received spironolactone 200 mg daily and 40 received cyproterone acetate, either 50 mg daily or 100 mg for 10 days per month if premenopausal. This study showed no significant difference in the results or the trend between spironolactone and cyproterone acetate.

Thirty-five (44%) women had hair regrowth, 35 (44%) had no clear change in hair density before and after treatment, and only 10 (12%) experienced continuous hair loss during the treatment period.

1. Alopecia Areata

Treatment is not mandatory considering it a benign condition. Spontaneous remissions and recurrences are common. Some therapeutic agents can be effective. This list includes systemic, intralesional and topical steroids under occlusion and topical immunotherapy with squaric acid dibutyl ester or diphencyprone.

2. Chemotherapy Induced Alopecia

Scalp cooling is a method of preventing hair loss during chemotherapy and it has been discussed by several authors as an effective option. Topical 2% minoxidil as a therapy for accelerating regrowth after chemotherapy has also proven to shorten the baldness period. Psychological support, education, and self-care strategies are important components of any management approach.

3. Trichotillomania

Behavior therapy and pharmacotherapy are the most efficacious treatments for adult trichotillomania and have shown significant reductions in hair-pulling over the short term. Pharmacotherapy agents include selective serotonin inhibitors at high dosage and domipramine. Recent developments in pharmacotherapy have suggested that other medications such as opioid blockers, atypical neuroleptics, and glutamate modulators hold promise as treatment for trichotillomania.



Fig.7: Comparison of treatment

Home Remedies for Hair Loss

There is nothing more attractive than a thick head of hair that glimmers with natural health. But hair loss is a problem that many people suffer from. There can be several factors behind hair loss such as environmental effects, aging, too much stress, excessive smoking, nutritional deficiencies, hormonal imbalance, genetic factors, scalp infections, use of wrong or chemically enriched hair products, certain medicines and medical conditions like thyroid disorder,

autoimmune diseases, polycystic ovary syndrome (PCOS), iron-deficiency anemia, and chronic illnesses.

1. Fenugreek for hair loss

One of the most effective home remedies to control hair loss is using Fenugreek / Methi. Seeds of fenugreek are rich in hormone antecedents that help in hair growth and repairs hair follicles. These seeds also contain nicotinic acid and proteins that strengthen the hair shafts and boosts hair growth. So, now as you know, how much fenugreek seed can help to control hair fall and boost hair growth you must be anxious to know how to use them for hair. Soak the fenugreek seeds in water overnight and grind it in the next morning to make a fine paste. Apply this fenugreek seed paste to the scalp and hairs and let it set for 30 minutes to one hour, covering your hairs with a shower cap so that it does not get dry. Rinse off with plenty of water, no need of using a cleanser or shampoo. Follow this process of treatment at least twice a week for a month to see effective results.

2. Aloe Vera for hair loss

Nowadays, excessive hair loss has become very common due to heavy pollution in the environment. You can use Aloe Vera as another effective home remedy for hair loss and quick hair growth. Uses of Aloe Vera can effectively reduce scalp problems like flaking and itching. The mildly alkaline property of Aloe Vera helps in restoring the natural pH level of the scalp which promotes hair growth.

Aloe Vera gel can be effective even for fighting dandruff. Take an Aloe Vera leaf, collect the pulp and apply it to the scalp and hairs. Leave it on for 45 minutes to an hour and wash off the hair with plenty of normal water. Follow this treatment for 3 – 4 times a week for better results.

3. Onion for fighting hair loss

If you are suffering from heavy hair loss, here is the most effective home remedy for controlling hair loss and boosting hair growth. The onion in your kitchen can actually do wonders for your hairs. The high sulfur content of onions capable to improve blood circulation to the hair follicles. Onion juice also contains anti-bacterial properties that can kill the germs and parasites. Prepare

fresh onion juice by grinding an onion and squeezing out the juice. Apply it onto the scalp and leave it on for half an hour. Finally, wash off with a mild cleanser and plenty of water. Onion juice for hair fall control is one of the best remedies.

4. Hot oil massage to reduce hair fall

Lack of nutrition to the hair has been often a cause of excessive hair fall and hence hot oil massage can be very effective to control hair loss. Massage the scalp daily at least for a few minutes with lukewarm oil. You can use any oil that is rich in Vitamin E. Coconut oil, almond oil, mustard oil, olive oil and jojoba oil are the best options in your hand. If you are experiencing hair loss due to dandruff, jojoba oil can be particularly effective. You can also opt for a mixture of all the oils to get the best results. Heat the oil lightly with an iron or steel container and massage your scalp and hairs with the oil. To get the complete benefits of hot oil, massage it is best if you can leave the oil on your hairs overnight and then wash off in the morning, otherwise shampoo the hair after 1 hour.

5. Sour curd as a hair fall solution

Curd is one of the most effective home remedies for hair loss. It can also help to get soft, smooth and shiny hairs. You can either apply the sour curd directly onto your scalp and hairs or mix 2 tablespoons of curd with 1 tablespoon of honey and apply the mixture to get the best effects. Leave the mask on for 30 minutes and then wash off with plenty of water. Try these homemade tips for long hair and healthy hair.



Fig.8: Home remedies for hair loss

6. Indian gooseberry to reduce hair fall

Vitamin C deficiency can trigger hair loss and Amla is rich in vitamin C. Gooseberry can help to maintain a healthy scalp and it also promotes hair growth. Take a few Indian gooseberries, discard the seeds and grind the flesh to make a pulp. Mix this pulp with a few drops of lemon juice and massage your scalp with this mixture. You can also use the pulp directly without adding the lemon juice. Keep this on for an hour and wash off with plenty of water.

CONCLUSION

It is common problem that has affected men and women. A good control of the parameters by detumescence therapy is demonstrated in this work to be an effective and efficient approach for natural hair regrowth on the scalp. It is investigated through many treatments are on offered including natural or synthetic based products, but natural product are continuously gaining popularly and the use of plant extract in formulation. Because synthetics based product may cause human health hazard with several side effects.

FUTURE WORK

In future, I will discover a tablet with the combination of natural agents (like coconut, garlic, egg, gooseberry etc.,) along with little bit chemical substances.

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