



## Research Article

# HAIR DISORDERS, TREATMENT AND CARE: AN OVERVIEW

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## ABSTRACT

Hair loss is very common disorders in human belonging to every age group. Hair loss (alopecia) affects men and women and often significantly affects social and psychological 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. Androgenetic alopecia, one of the most common forms of hair loss, usually has a specific pattern of temporal-frontal loss in men and central thinning in women. Topical minoxidil has approved to treat men and women, with the addition of finasteride for men. Telogen effluvium is characterized by the loss of “handfuls” of hair, often following emotional or physical stress. Alopecia areata, trichotillomania, traction alopecia, and tinea capitis have unique features on microscopic examination that aid in diagnosis. Evaluating and treating hair loss (alopecia) is an important part of primary care, yet many physicians find it complex and confusing. Hair loss affects men and women and frequently has significant social and psychological consequences. Therefore it is highly imperative to find safe alternative or a new therapy to treat such hair losses. RCHMA has developed a new homeopathic formulation to treat all kind of hair disorders. Formulation “HAIR LOSS” is highly efficient to treat various disorders. About more than 4000 diagnosed cases of hair loss are well treated. Some cases were detailed in the present paper. A detail review of its efficiencies are explored in the paper for general as well as scientific interest.

**KEYWORDS:-**Hair Disorder

## INTRODUCTION

We have approximately 5 million hairs on our body. Of these, about 150,000 are found on our scalp. Human hair follicles act independently of each other. Every follicle follows a common growth pattern, although its life cycle is determined by age and location on the body, and can be modified by a variety of factors. (Messenger AG. Related Articles 1993)

Each hair grows from a pocket in the skin called the hair follicle. During its growing phase, the follicle has a bulb-shaped bottom, the center of which is called the dermal papilla. The papilla is fed by very small blood vessels, which bring it food and oxygen and take wastes away. The papilla is highly sensitive to hormones. It is here that hormones and chemicals secreted by your body (or injected as a medicine) work on the hair, making it grow faster, slower, or not at all.

The color of our hair is determined by pigmented cells growing at the dermal papilla. These cells (melanocytes), contain a chemical pigment (melanin - stained dark purple-FIGURE-2). The amount and density of melanin in these cells determines the exact color of your hair. The color, shape and thickness is in a large part determined by genetics...just look at your folks! Marshall RC, Orwin DF, Gillespie JM1991 Powell BC, Rogers GE1997 Lee LD, Baden HP1975)

Sebaceous glands surrounding the hair root secrete oil (sebum) while salt-water (perspiration) is secreted from nearby sweat glands. The sebum oil protects the hair and keeps it shiny and waterproof, while the sweat is a way for the body to cool down if it's too hot. Hair is actually composed of a protein called keratin. It's the same protein found in our nails and in our skin. Amino acid-cysteine is the key component of this protein. (TABLE-1)

**AMINO ACIDS ARE PRESENT IN HAIR FIBER**

|               |      |               |      |
|---------------|------|---------------|------|
| Cysteine      | 17.5 | Serine        | 11.7 |
| Glutamic acid | 11.1 | Leucine       | 6.9  |
| Glycine       | 6.5  | Valine        | 6.1  |
| Valine        | 5.9  | Arginine      | 5.6  |
| Aspartic acid | 5.0  | Alanine       | 4.8  |
| Proline       | 3.6  | Isoleucine    | 2.7  |
| Tyrosine      | 1.9  | Phenylalanine | 1.4  |
| Histidine     | 0.8  | Methionine    | 0.5  |

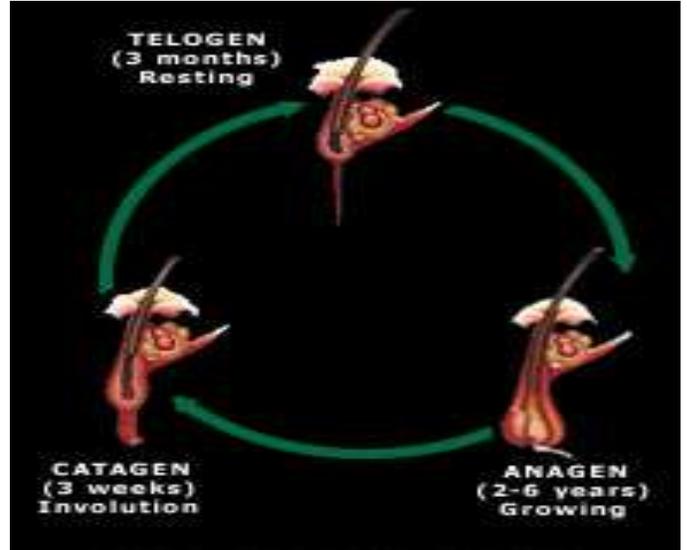
**LIFE CYCLE OF HAIR**

The life cycle of a hair is composed of three phases: "anagen" (active growth), "catagen" (transition) and "telogen" (resting). The anagen phase lasts about 1000 days, the catagen phase lasts a few weeks, and the telogen phase lasts about 100 days. At any given time, about 90% of hairs are in the anagen phase. (Courtois M, Loussouam G, Hourseau S, Grollier JF1996. Paus R1998)

**HAIR LOSS AND ITS CAUSES**

During the resting stage of the cycle of hair growth, the hair follicle relaxes its hold on the hair shaft bulb, and the bulb of the hair shaft moves closer to the surface of the skin. Over time, normal hair movement and shampooing cause the hair shaft to loosen further. Eventually the hair is shed. Shedding hairs is normal. On average we shed about 15-20 hairs each day. The actual quantity of hairs shed each day depend upon several factors, including the total number of hair, a person

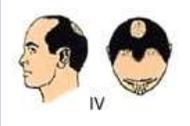
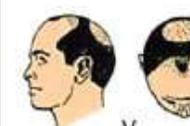
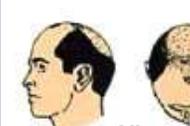
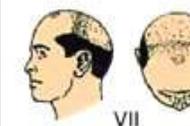
has, the average length of their hair growth period, the degree of physical loosening activity (such as vigorous shampooing). All hairs are shed at the end of their growth cycle (telogen), so some degree of hair loss is normal. There are many possible causes of hair loss -environmental/work stress, mycoses(fungal infections), toxicity, hormonal imbalance, nutritional deficiencies. and few others



**IDENTIFIED KINDS OF HAIR LOSS**

**Androgenetic alopecia** is the scientific name for the genetic predisposition in both men and women for pattern baldness or pattern hair loss

|  |     |  |
|--|-----|--|
| Norwood I shows a normal head of hair with no visible hair loss  | I   |  |
| Norwood II shows the hair receding in a wedge-shaped pattern.  | II  |  |
| Norwood III shows the same receding pattern as Norwood II, except the hairline has receded deeper into the frontal area and the temporal area. | III |  |

|  |  |
|--|--|
| <p>Type IV on the Norwood Scale indicates a hairline that has receded more dramatically in the frontal region and temporal area. Additionally there is a balding area at the very top center of the head, but there is a bridge of hair remaining between that region and the front.</p> |   |
| <p>Type V on the Norwood Scale shows that very same bridge between the frontal region and the top center, also called the vertex, beginning to thin.</p>   |   |
| <p>Type VI on the Norwood Scale indicates that the bridge between the frontal region and the vertex has disappeared</p>  |   |
| <p>Type VII on the Norwood Scale shows hair receding all the way back to the base of the head and the sides just above the ears. Norwood patterns are determined genetically.</p>  |  |

**Alopecia areata** is an immune system disorder which causes hair follicles to stop producing hairs. Sudden loss of hair from small patches on the head are a common symptom. Advanced forms of the disorder include alopecia totalis, where all hair on the head is lost, and alopecia universalis, which results in the absence of all body hair.

**Delayed Hair Loss from Stress**

Telogen effluvium is a slowing of new hair growth resulting from sudden severe stress, followed by a delayed shedding of hair. The stress induces a high proportion of follicles to enter the resting stage (telogen), and a few months after the stressful event, all of the resting follicles begin to shed hairs at about the same time.

**Mycoses (Tinea Capitis)**

Fungal infections of scalp and hair are the second major cause of hair loss. It consist of both type of hair loss either diffused or patchy. Dandruff and severe itching is also the result of such fungal infection. Severity of such infection may cause infection to all over body. The most common causal agents are *MICROSPORUM* sps. *TRICHOPHYTON* sps. Diagnosis may be done by “Hair root culture” in any Medical Mycology Lab under expert Medical Mycologist. (Srivastava O.P., Srivastava A.K., Shukla P.K., 1998. Kligman A.M., 1952, Randhawa H.S., Nath A., Viswanathan R., 1959)

**Sudden Hair Loss**

Anagen effluvium is the sudden loss of growing hairs as a result of chemicals or radiation.

Cancer treatments such as chemotherapy and radiation therapy halt the growth phase of hair follicles, and result in the sudden shedding of hair. Some medications can also cause hair loss as a side effect.

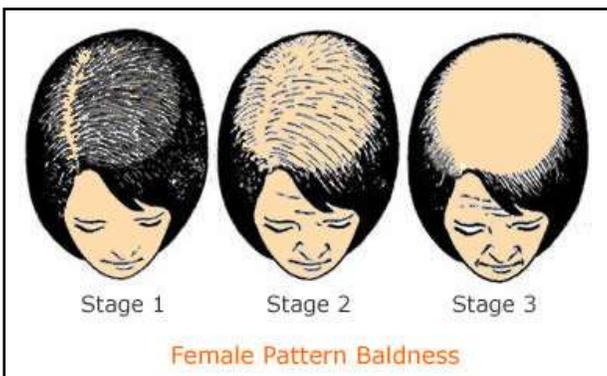
**Hormonal**

In every individual there is a balance between male and female hormone. Hormonal imbalance or abnormality or irregularity may cause hair loss. Subjects under this category are strongly recommend for medical evaluation.

**Broken Hairs**

Hair shaft breakage is when part of a hair breaks off, but the growing end remains in the follicle and continues to grow. Hair shaft breakage results in thinner hair, and can be caused by excessive styling, chemicals, sun, and chlorine in swimming pools.

Hair loss in women is unlike male pattern of balding Female pattern balding is not associated with recession of the line.



Hair loss in such kind of male/female baldness can be delayed but could not be stopped because it is genetically programmed. Age factor is very important controlling such hair loss.

**Nutritional Deficiencies**

Nutritional deficiencies are rarely a cause of hair loss. In rare cases certain nutritional deficiencies can cause weak hair shafts that tend to break off. Microscopic examination of hair root can explore some kind of nutritional deficiency.

Other diagnostic parameters to establish the cause of hair loss include Hair pull test, Hair root culture, Hair analysis, Scalp scraping, Scalp biopsies, blood levels of estrogen, Progesterone, androgenic concentration, concentration of thyroids hormones, iron and copper , Lymphocyte or RBC in plasma. (Rippon J.W., 1988. Medical Mycology. Gupta Girish, Srivastava A.K. 2000)

**Other Hair Loss Causes**

Certain chronic illnesses including. Skin Infections can result in hair loss. Trauma such as burns and injury to hair follicles can cause permanent hair loss. Under normal conditions, approximately the same number of new hairs will just start growing to replace the hairs that have been shed, so the average number of growing hairs remains about the same all the time.

**DIAGNOSTIC PARAMETERS**

**A Simple Hair Loss Test which you can Do**

One of the easiest ways to determine if you are losing hair at an abnormal rate is to count your own shed hairs. At the beginning of each day collect hairs from your pillow and bed linens. Collect hair from your shower drain, and from your hair brush or comb. Collect hair from your clothing. Count the hairs and put them into an envelope, and mark the day and the quantity on the envelope. Use a new envelope for the next day. if your hair count s are more than 15-20/day then report to your doctor or to us for further investigations.

**Possible Etiologies On Appearance of Hair Loss**

| If the patient has or reports...  | Consider...  |
|---|--|
| Systemic/chronic illness (e.g., autoimmune disorder, cancer)  | Alopecia areata, cicatricial alopecia, telogen effluvium |
| Infection (systemic or local)   | Cicatricial alopecia, telogen effluvium, tinea capitis   |
| Medication exposure (especially chemotherapy) or serious illness within previous three to four months | Telogen effluvium  |
| Psychiatric disorder (e.g., psychosis, anxiety, obsessive compulsive disorder)                        | Trichotillomania   |

| Physical stress (e.g., surgery, pregnancy, malnutrition) or life-threatening psychologic stress |   | Telogen effluvium                  |
|---|---|------------------------------------|
| Tight braids or “pulled-back” hairstyle   |   | Traction alopecia                  |
| Signs and symptoms of hormonal abnormalities  |   |                                    |
| Hirsutism, amenorrhea, infertility  |   | Androgenetic alopecia (women)      |
| Hypothyroidism, other endocrinopathies  |   | Alopecia areata, telogen effluvium |
| Hair loss disorder  | Studies   | Findings                           |
| Female androgenetic alopecia  | Prolactin, FSH, LH, DHEAS                                     | Hyperandrogenism                   |
| Telogen effluvium   | TSH, other endocrine tests                                    | Metabolic disorder                 |
| Alopecia areata, telogen effluvium  | ESR, ANA, RF  | Autoimmune disease                 |
| Alopecia areata   | CBC   | Pernicious anemia                  |
| Tinea capitis   | Culture swab, KOH examination, fluorescence with Wood's lamp* | Fungal infection                   |
| Telogen effluvium   | Hair-pull test with microscopic evaluation                    | White bulb on shaft                |
| Tinea capitis, environmental/external factor, systemic disease                                  | Same as above   | Mid-shaft, fractured hairs         |

|  |                 |                                |
|--|-----------------|--------------------------------|
| Alopecia areata, alopecia totalis, alopecia universalis                    | Same as above   | Exclamation-point hairs        |
| Telogen effluvium  | Hair-pluck test | Increased telogen:anagen ratio |
| Unclear etiology, mixed signs/ symptoms, failure to improve with treatment | Scalp biopsy    | Underlying pathology           |

**MICROSCOPIC EXAMINATION OF HAIR ROOT AND THEIR INTERPETATION**

A normal catagen hair that has a green center both in the bulb and the stem of the hair. Green means good in the center part of the hair (FIGS-1-15)

The green stays in the bulb. The green should move up into the shaft. This hair will not grow properly until it is nourished. This is form of male pattern baldness. This hair has a proper forming bulb but the stem is not growing out of the head properly. This can cause the appearance of hair loss, thinning and weak brittle hair. (FIG-2) Shows what can happen as an effect of certain fad diets on the market. This hair is hampered by lack of protein. Lack of nutrition destroys the outline of the medulla, cortex and cuticle. This breaks downthe reproduction (FIG-3)

Fig 1



Fig 2



Fig 3



Fig 4



Fig 7



Fig 8



Fig 5

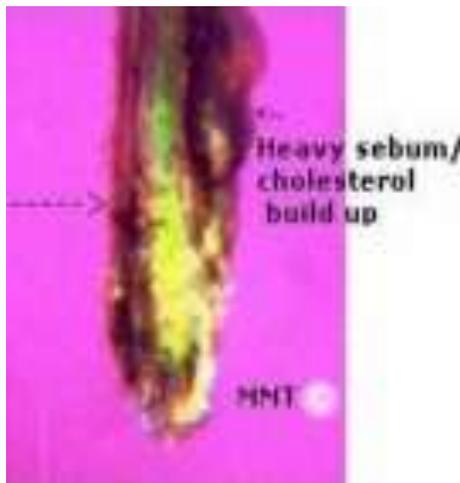
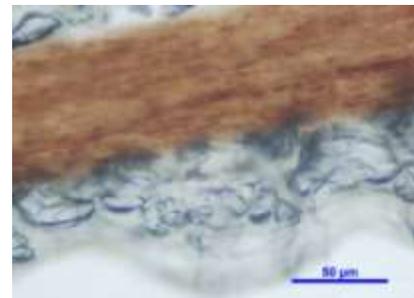


Fig 9



Fig 10



Stress causes a hair bulb to shred. Heavy stress is evident in a microscopic analysis. Stress has become one of the top causes of hair loss (that we see) for women. The hair to the left is a physically stressed hair from chemotherapy but emotional stress has a similar (FIG-4)

Sebum can build up and plug a follicle. It can wrap around the bulb and affect the dermal papilla reproduction(FIG-5)

Fig 6



**HAIR ROOT CULTURE SHOWED ISOLATION OF DIFFERENT FUNGI**

Fig 11



Fig 12



Fig 13



Fig 14



Fig 15



Fig 16

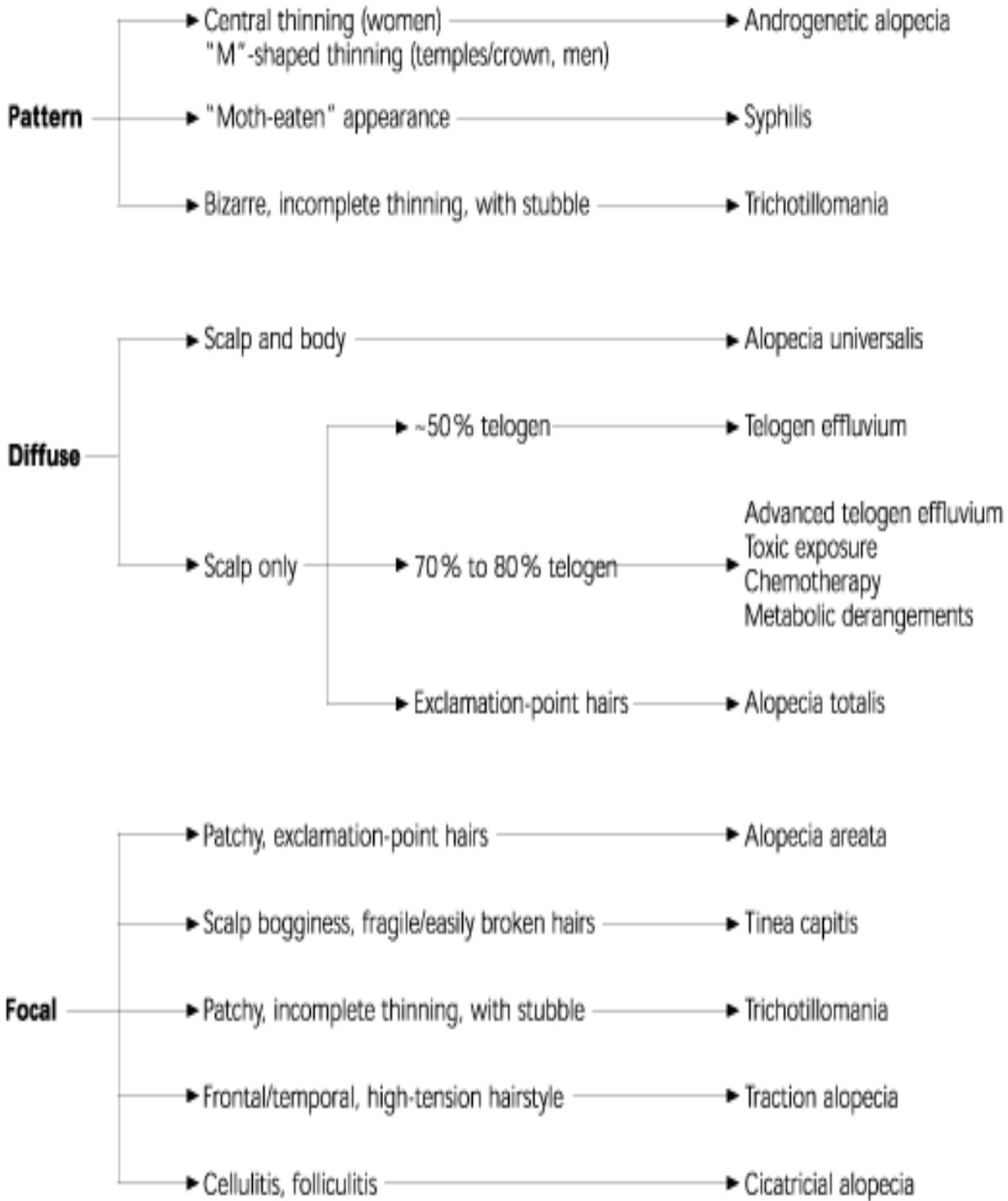


Fig 17



Fig 18





There are so many fungal species are known to cause hair mycoses. Most important fungal species are

- Trichophyton sp
- Microsporum sp
- Candida Sp



- Aspergillus sp

## TREATMENT

Treatment options for AGA focus on decreasing androgen activity. Minoxidil (Rogaine) and finasteride (Propecia) are the solution (Rogaine Extra Strength) that should be used by men only. The mechanism of action by which minoxidil promotes hair growth is unknown, but it appears to act at the level of the hair follicle. Minoxidil is an effective treatment for male and female AGA and is recommended as first-line treatment.

Minoxidil should be applied twice daily, and one year of use is recommended before assessing its efficacy. Women also may benefit from adjunctive treatments such as estrogen (hormone replacement or oral contraceptives) or spironolactone (Aldactone). In men, minoxidil may work better in areas with higher concentrations of miniaturized hairs, and its efficacy may be increased by the synergistic use of once-daily tretinoin (Retin-A) applied at separate times during the day. Minoxidil does not work on completely bald areas and has relatively few side effects.

Finasteride inhibits 5 $\alpha$ -reductase type 2, resulting in a significant decrease in dihydrotestosterone (DHT) levels. Studies have shown that, compared with placebo, 1 mg per day of finasteride slows hair loss and increases hair growth in men. Dosages as low as 0.2 mg per day result in decreased scalp and serum DHT levels in men, although the DHT levels may not correlate clinically with changes in hair loss.

Finasteride has relatively few side effects, and a dosage of 1 mg per day costs higher. Women who could be pregnant should not handle finasteride, because it may cause birth defects in a male fetus. Finasteride has not proved effective in the treatment of female AGA and is not approved for use in women. Continued use is required to maintain benefits.

Spironolactone, an aldosterone antagonist with antiandrogenic effects, works well as a treatment for hirsutism and may slow hair loss in women with AGA, but it does not stimulate hair regrowth. Estrogen may help to maintain hair status in women with AGA, but it also does not help with regrowth. Few controlled studies have examined the many non-FDA-approved hair growth agents such as cyproterone acetate, progesterone, cimetidine (Tagamet), and multiple non-prescription and herbal products. In all forms of alopecia, hairpieces and surgical transplants can produce satisfactory results but are expensive.

## A NEWLY RESEARCHED HOMEOPATHIC TREATMENT –PRELIMINARY REPORT

Recently Dr. A. K. Srivastava along with Dr. S. C. Srivastava a Homeopathic Physician at center has developed a Homeopathic formulation named as “HAIR LOSS” which are highly useful to

only medications approved all over the world for treatment. Minoxidil is available without a prescription as a 2-percent topical solution that can be used by both men and women and as a 5-percent

control diseases of hair and scalp including DIFFUSED AND PATCHY HAIR LOSS, DANDRUFF AND ITCHING.

The Homeopathic Treatment “HAIR LOSS” are completely safe nontoxic and highly economical



## BRIEF SYNOPSIS OF CASES TREATED

### Case 1: (Reg. A-3)

A 18 year old male suffered from hair loss slowly with excessive sebum release and heavy stress of carrier. The patient cured within six month with homeopathic drugs.

### CASE-2 (MHCDR REG.NO-A-604)

A 12 year old boy contacted for homeopathic treatment for dry scaly infection with severe itching on scalp. Patient was suffering from two years. He was treated with antifungal drugs- Gris OD for three months and improved upto 80 percent but recurrence was noted as medicine was withdrawn. Patient was suspected for fungal infection and scrapings from scalp was observed in KOH mount, direct culture. Culture yielded pure colony of Microsporom gypsum and disease is considered as Tenia Capities. Patient was well treated with Nat. mur 30, IM, Petroleum 30, Teleurium 30 and Mezerium 30. No recurrence of infection is claimed. After completing treatment scrapping was negative for fungal infection

### CASE-3 (MHCDR REGISTRATION NO.K-32)

A 28 year male observed patchy hair loss from mustache and barbae area since four month with intense itching . Patient applied some natural extracts or medicine obtained from local practicner but no any relief was noted, and patient is referred to MHCDR for homeopathic Treatment. In MHCDR diagnosis was confirmed as tenia capities and the causal agent isolated was identified as *Microsporum gypseum* . Serological test of diluted culture filtrate of







fungus was positive. Patient was well treated with homeopathic drugs *Nat. mur 30*, *IM*, Petroleum 30, Teleurium 30 and Mezerium 30. No recurrence of infection is claimed. After completing treatment scrapping was negative for fungal infection

#### CASE 4 (K-79)

A 37 year old working female contacted. MHCDR for the treatment of heavy hair loss from scalp since past two years. Scalp was visible with such hair loss, She was also suffering from Leucoderma of skin however there was no any significant complaints related to hair otherwise she is normal. Her hair was culture for isolation of fungus and yielded *Microsporum Sp.* Patient was well treated with homeopathic medicine. And no recurrence was reported till publication

#### CASE5(K-49)

A 19 year old female have got registered from Sultan pur for her treatment in MHCDR. She was heavily infected total scalp, eyebrows and even face since six moths. She was under treatment of antibiotics but no any response was received. Root culture and koh mount showed presence of *Aspergillus flavus*. She was well treated by homeopathic drugs i.e. hair loss





**Case 6: (Reg. S-199)**

A 14 year old female noticed patchy hair loss with dandruff and itching. The patient is cured within 4 months with homoeopathic drugs.

**Case 7: Reg. A-101)**

A 41 year old male patient suffered from Hadgken disease (Cancer) and received Chemotherapy and lost full hair from scalp and all over body but reoccurrence of hair could not takes place up-to 6 years. As patient received hair loss treatment full growth of hair was noted within 9 months with homoeopathic treatment

**Case 8: (Reg. R-86)**

A 25 years old female patient noticed hair loss upto 200 hair/day in the pattern of Androgenic Alopecia. There patient was treated for hair loss and re-growth. After 6 months of treatment 60 percent of re-growth hair was achieved with homoeopathic treatment.

**Case 9: (Reg. A-12)**

A 30 years old male started hair loss typically in female pattern due to imbalance of sex hormone. Patient was treated with hair loss treatment within 6 months with homoeopathic drugs

**CASE-10**

A 32 year male complaints diffuse hair loss with dandruff and itching. On the examination of hair koh mount and root culture, hair was found infected with microsporum sp patient was fully treated with antifungal homeopathic drugs at mhcd

**HOW TO PREVENT HAIR LOSS**

Each year, considerable amount of one's income is spent on hair-care products and treatments. Unfortunately, some of these efforts are too rough or done frequently. The result is hair damage rather than hair care. Damaged hair stays damaged until it grows out and is cut off. This can take many months, because your hair grows only about 1/2 inch each month.

Choose shampoo and conditioner that is right for you. Hair gets dirty when sebum, an oily substance secreted by the skin's sebaceous glands, coats the shaft. Dead skin cells and airborne dirt stick to the sebum. A "good" shampoo leaves hair manageable, easy-to-comb and glossy. Most modern shampoos are synthetic detergents called surfactant – replacements for the older types that dulled hair by depositing a scum on its surface. Surfactant molecules surround a tiny glob of oil, forming a package called a "micelle." Rinse water carries the micelle away. Coloring, perming, combing, teasing and shampooing can break the cuticle's long protein chains. The cuticle gets shaggy, and hair becomes rough. Static, due to combing, can develop.

Most modern conditioners contain cationic quaternary ammonium compounds that provide a positive charge which reduces static and makes hair less "fly-away" and more manageable. Some products, particularly those containing benzalkonium chloride as the active ingredient, are good conditioners. Those with added polymers, collagen, balsam, silicones or resins that bond with and coat the hair shaft, may provide a protective film, smooth out the cuticle, reducing snarls and tangles. Conditioners that give "extra body" may contain waxes that, when dry, make it look fuller, some contain oil/fats (e.g., lanolin, mineral) to smooth hair, and a few have humectants that supposedly hold in water content. Price and exotic ingredients bear little or no relation to efficacy.

Quaternary ammonium compounds in conditioners have a tadpole-shaped molecule that is attracted to a damaged site on the cuticle. When many such molecules attach to hair, they make it slippery and easy to comb.

Protein shampoos do not penetrate your hair, but they do coat it, giving your hair more bulk. A protein shampoo acts as a shampoo and conditioner in one. These products lubricate your hair between washings and help minimize damage from brushing or combing. Those containing protein ingredients may also thicken your hair temporarily. Use shampoos tailored to your hair type—oily, dry or normal. Permanent - waved, straightened, or dye hair needs low pH shampoos. Excessive flaking may require dandruff shampoos

Choosing the right conditioner or shampoo for your hair can be a matter of trial and error. Some products may make your hair limp, while others may even dull it with a film. Choose two different brands of shampoo and conditioner that are right for you, alternate use will give the best result.

It is a myth that shampooing increases hair loss. Whether dry or greasy, hair should be washed as often as required to look good, even every day. Most experts including Dr.A.K.Srivastava recommend at least twice a week washing to prevent dandruff from clogging the scalp. If you have an oily scalp, frequent shampooing will keep the hair from lying flat, weighted down by the fats in sebum. Very dry hair may be improved by massaging with a little olive or almond oil, covering and leaving on overnight, washing out next morning.

A proper and thorough brushing should precede every shampooing. For proper washing, wet your hair completely with warm water. The first rinsing acts as a pre-wash to remove dust and water-soluble dirt and hair-care products. After the first rinsing apply the shampoo with hand to the oiliest part of the scalp and massage the entire scalp gently, using your fingers instead of your nails as you work the lather outward from your scalp. Try not to tangle the hair, and avoid scrubbing the ends, particularly if your hair is long. Rinse thoroughly with water. Shampoo can leave a residue that can dry the hair, attract dirt, and irritate the scalp. If you shampoo daily, later only once, even if you have oily hair.

#### ACKNOWLEDGEMENTS

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