

NATURAL HAIR REMOVAL CREAM: A REVIEW**Shailendra Tripathi^{1*}, Vandana Sharma², Nitin Sharma³, Pooja Yadav³,
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Abstract

Alopecia is the medical term for hair loss and baldness. It is a health condition in which hair is lost from some or all areas of the body usually from the scalp. Hair loss can be caused due to different reasons such as genetic tendencies, environmental triggers, exposure to chemicals, medicines, nutritional deficiency, extreme stress or long illness. Based on hair loss pattern and causes, alopecia is classified into several categories. The two major forms are alopecia areata and androgenetic alopecia, which are of main concern at present. Several alternative remedies like corticosteroids, dithranol, tretinoin, minoxidil, zinc system, and irritant immunosuppressants such as finasteride and zelaic acid are available for the treatment of alopecia (both androgenetic and areata). However, no single or multiple pharmacological therapies are providing alopecia patients with satisfying and long-term outcomes. Besides, several effects are associated with the use of these synthetic compounds, including erythema, scaling, pruritis, dermatitis, itching, so to cope with the problem of alopecia, here we have looked into the new's treasure and found a number of several proved records for the treatment of alopecia. Nutritional support, DHT blockers and 5- α reductase blockers, aromatherapy, and improved scalp blood circulation are the proposed mechanisms of action for these herbal remedies. Being natural drugs, here are many advantages of using them like patient compliance, fewer side-effects, easy availability, low-cost, and more than one mode of action for the treatment of alopecia/baldness.

Keyword: Alopecia, DHT, Nutritional, 5- α Reductase, Alopecia's

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INTRODUCTION

Hair removal is a more and more concerning sector of the cosmetic and personal care industry. Both men and women are becoming more aware of the aesthetic aspect of their appearance. Every individual chooses to remove unwanted hair for cosmetic, cultural, or medical reasons. There is a bundle of hair removal

techniques that have been developed over the years, including methods for electrolysis as well as depilatory hair removal. The availability of the current methods and products may be different; most of them can be used at home; however, some can be used only in professional salons and dermatological offices.

Hair removal is becoming a threat these days and even men are raising interest towards an all-clear, no-hair body. That's the reason the market is becoming very demanding with the huge amount of hair removal options. As we know there are many expensive hair removal methods (waxing, laser hair reduction, etc.) from these expensive methods to shaver, trimmer, and finally, hair removal creams are the better options as well as they are budget-friendly.

Hair removal cream is a type of emulsion which helps in the removal of hair from the upper surface of the body and this removal technique is termed a depilatory method.

The depilatory creams/hair removal cream is used to remove on almost every area of our body rather than this some special creams are made for a sensitive place like the face and body.

The main ingredient which is responsible for the removal of hair is thioglycolic acid, which is added in the form of various salts like potassium and calcium thioglycolates and also as pure thioglycolic acid with the mixture of other ingredients, these acids breakdown the keratin (which is a natural protein in the hair).

Methodology:

A variety of hair removal methods and products are available. Depending on the procedure and the individual's physiological parameters, temporary techniques produce hairless skin for a shorter (1–3 days) or longer (1–3 weeks) period. Permanent hair loss treatments, on the other hand, can last for years. The techniques that are underlined and shaded involve the use of cosmetics. Depilation and epilation are the two different kinds of temporary hair removal.

Depilatory Methods

The term "depilatory" has been applied to any preparation designed to remove excess hair (in particular hair on the face and legs,

as well as in the axilla) without causing injury to the skin. However, a distinction must be made between mechanical removal of hair (either by plucking it with tweezers or by embedding it in an adherent material that can then be pulled away from the skin, bringing the hair with it) and destitution.

Only the hair shaft that protrudes beyond the skin's surface is removed by depilatory procedures and treatments. If there is no skin damage, these treatments are usually painless. Shaving, trimming, using abrasives, utilizing chemical depilatories, and bleaching are all samples of depilatory techniques.

Shaving is a popular procedure since it is quick, simple, painless, effective, and economical. It necessitates the use of a shaving tool, such as a razor.

Trimming is done with special scissors designed for the job. Long brow hair can be trimmed using this procedure.

Abrasives, such as pumice stones or fine sandpaper gloves, remove hair from the skin's surface by physically removing it. This approach is extremely irritating, and it is only used for hair removal on rare occasions nowadays.

Chemical depilatories break down hair fibers, causing hair to split and fall out, which can be easily wiped away. Gels, creams, lotions, and sprays are among the products available.

Bleaching is commonly referred to as a hair removal method, although it changes the color of the hair shaft rather than removing it.

Epilatory Method

Epilator methods and treatments remove the complete hair shaft from the dermis, including the root. These methods are more successful and last longer since the hair shaft takes longer to fully renew than it does to regrow from beneath the skin, as in the case of shaving. Epilation methods include epilators, tweezing, waxing, sugaring, threading, and the use of

medicines.

Tweezing, also known as plucking, is best accomplished using tweezers. It's an effective way to get rid of a tiny group of hairs on the brows, for example. This procedure is useful for small surfaces that are difficult to reach with epilators. It is, however, a time-consuming and exhausting method.

Waxing is the process of putting heated or cold wax to hairy skin and then swiftly removing the wax and hairs in the opposite direction of hair growth. Because hair is eliminated in high quantities from a vast surface area, it is the most effective epilation procedure. Sugaring is similar to waxing, but instead of wax, the syrup is made from sugar, lemon juice, and water.

Threading is an ancient manual technique that includes rotating a long twisted loop of thread across the skin quickly. Hairs become stuck and are dragged out of the tightly twisted coils. In several Arabic nations, this approach is highly popular.

Epilators are electrical devices that mechanically grip and pull hair out.

Eflornithine, a novel approach for temporary hair reduction in women, is a prescription-only topical cream that has been approved by the FDA to reduce undesirable facial hair in women. It is a topical cream that slows the growth of hair, not a hair removal or depilatory product.

Laser/Permanent hair removal

laser therapy prevents active hair growth. Its theory is based on the fact that the hair follicle and the skin are of different colors. The dark pigment in the hair follicle (i.e., melanin) absorbs light energy, which damages the follicle and reduces hair growth. The laser will impact the follicle more selectively and not the surrounding tissue the lighter the skin and the darker the hair. A laser instrument generates an intense, concentrated light beam with a fixed wavelength.

Intensely pulsed light devices, like lasers, target the melanin in the hair follicle

using the principle of thermal destruction (i.e. photo thermolysis). However, a variety of wavelengths are used here.

After inserting a small, thin needle into the hair follicle, a pulse of electric current is fired, damaging and eventually destroying the hair follicle. Hair breaks off at the root as a result and can be easily plucked out with fine tweezers. It works well, especially in compact spaces.

Ideal Qualities and Characteristics of Hair Removal Cream/ Product

The following are features of a good hair removal product: The following are features of a good hair removal product:

Good lubricant properties for razor protection

Hydrating capabilities to smooth the skin and hair

Well-tolerated, non-irritating with a nice odor

Easy application with a tendency to spread quickly

Easy to get rid of the razor and the skin

Hair removal is made easier with pre-treatment solutions that remove oil and sweat from the skin.

After-treatment products: moisturize and cool the skin, relieve discomfort and redness, and prevent infections.

Long-term stability with the right texture
Foaming products with the right foam structure, density, viscosity, and stability

No leakage from aerosol cans

Appropriate pH

Dermatological safety

Hair Removal with Typical Ingredients

Pre-Treatment Product

Depending on the type of hair removal technique pre-treatment products may serve a variety of purposes. They're made to make hair removal easier and more comfortable while they also help in lowering the risk of skin irritation. The main purpose of pre-treatment is to reduce moisture on the skin using powders, which can help the waxes work more effectively.

Soft waxes are more commonly used with them.

Dirt, makeup, sweat, and other pollutants can all be removed from the skin with cleansing products. To lessen the risk of infection, they may contain antiseptic and astringent chemicals like witch hazel or alcohol.

Hard wax sticks to the hair shaft, not the epidermis, thanks to pre-wax preparation items like oils and lotions. It's also beneficial if the patient's skin is really dry. Too many of these items, on the other hand, can prevent the wax from sticking to the hair. Emollients and botanical extracts, such as soy oil, tea tree oil, grapeseed oil, and aloe vera extract, are commonly used in pre-wax products, and they may have further relaxing and soothing characteristics.

Overuse of powders, like oils, can reduce the adhesive power of waxes on the hair.

Depilatory

The term "depilatory" has been applied to any preparation designed to remove excess hair without causing injury to the skin. However, a distinction must be made between mechanical removal of hair (either by plucking it with tweezers or by embedding it in an adherent material that can then be pulled away from the skin, bringing the hair with it) and destitution.

Chemical depilatory

The term depilatory refers to a product designed to break down excess hair chemically without harming the skin. The benefit of such preparations is that they eliminate the risk of cutting or abrading the skin in areas like the underarms, where it's difficult to view the area clearly and even more difficult to guide a razor through the intricate shapes. Shaving is also widely believed to increase the rate of hair growth or the coarseness of the hair. Even though these assumptions are false, chemical depilatories appear to have the advantage of inhibiting hair regrowth when used regularly. There appears to be no scientific explanation for this, however, it could be due to the gradual elimination

of keratinous material from the hair follicle's mouth, allowing the hair to be removed at a deeper level.

Very little, if any, skin damage will occur if the skin is generally healthy, the depilatory is applied for a reasonable amount of time, and the depilate is properly made. When developing depilatory preparations, attention should be taken to ensure that they react preferentially with hair and that their effects are fast enough to cause hair disintegration before causing any damage to the underlying and surrounding skin. Depilatory products usually comprise a strongly alkaline reducing agent as an active ingredient to meet the need for quick depilation. As a prelude to total hair breakdown, the latter causes the hair fibers to expand and triggers cleavage of cysteine bridges between neighboring polypeptide chains. There are only a few chemicals that can be used as a depilatory.

Sulfides

Sulfides have been used for a long time; patents describing the use of barium polysulfide for hair removal date back over a century. Rapid depilation can be achieved using compositions based on alkali and alkaline earth sulfides, especially when combined with a lime suspension. Alkali sulfides, such as sodium sulfide, were shown to have a too harsh effect. The hydrolysis of these substances results in the creation of sulphhydrates and sodium hydroxide, which have a depilatory effect. The latter causes erythema and acts as the main irritant. Even a dilute (2%) aqueous sodium sulfide solution will have a pH of 12. It will destroy hair in 6-7 minutes, however, it may damage the stratum corneum at the same time. As a result, it is no longer utilized in commercial depilatory products. Strontium sulfide is a considerably milder depilatory than sodium sulfide, but it must be used at a larger concentration to get the same dehairing effect. Although thioglycolates have mostly supplanted strontium sulfide-based preparations, they

are still accessible. They're quite effective, and they start working within 3-5 minutes after application.

A depilatory preparation may also include a humectant, such as glycerin or sorbitol, in addition to the active ingredient. A thickening agent (e.g., methylcellulose) may be added to the solution to thicken it enough to allow it to stay in touch with the hair for as long as necessary. Despite these drawbacks, many African American men choose sulfide-based depilatories for face hair removal due to their more quick action.

Stannites

The usage of "soluble stannites" received a lot of interest in the 1930s. Sodium stannite solutions are described as depilatories in several patents. Despite their acceptable low odor, they have mainly been abandoned due to their instability, which causes them to generate stannates when exposed to water. The indicated stabilizers, however, were found to be ineffective and did not result in stable preparations.

Substituted Mercaptans

In the 1930s, the use of "soluble stannites" drew a lot of attention. In various patents, sodium stannite solutions are characterized as depilatories. They've mostly been abandoned due to their instability, which allows them to create stannates when exposed to water, despite their tolerable mild odor. However, the suggested stabilizers were found to be inefficient and did not provide stable formulations. Thioglycolate preparations are more appealing than sulfide preparations in general. However, because of their slowness in addressing the coarse and resistant hair of the underarm, a market for sulfide depilatories for this purpose has emerged. Although depilatories can be used to smooth the legs, the amount needed to cover the leg renders it unaffordable for most people.

Thioglycolates

At use dosages of 2.5 percent to 4 percent,

thioglycolate-based medicines are safe and stable. They can cause depilation in 5-15 minutes at common use doses (about 4%), depending on the pH of the preparation. This should not be less than pH 10 and preferably around pH 12.5 to achieve depilation in a reasonable amount of time while not irritating the skin.

Other "Thio" Compounds

The most cost-effective and efficient active agent of this class is thioglycolic acid. However, due to regulatory restrictions on the use of thioglycolates at home, products containing this lactic acid, 3-mercaptopropionic acid, or thioglycerol have been introduced.

Enzymes

Depilatory preparations based on the enzyme keratinase have also been produced that are non-irritating and odorless. *Streptomyces fradiae* keratinase was discovered to be capable of digesting keratin (U.S. Pat. 2,988,488). The extremely slow depilatory activity interfered with the economic success of these remedies.

Epilatory

Epilation has a following because the epilated hairs also remove the hair bulbs or hair papillae, resulting in a somewhat longer-lasting effect. This may cause a significant delay before the hair begins to develop in the follicle and reaches the skin's surface. It is, however, not painless and can often result in major skin injury and infection, hence it is discouraged by doctors.

In the industry, there has been no significant development of a "painless" epilatory. The few and limited developments have focused on changes to the application method, such as the addition of a flexible backing strip and the development of a preparation that does not require melting before use but can be applied cold, with the preparation based on a glucose and zinc oxide mixture of honey, sugar, and citric acid mixture. A US patent covers the use of a "rubber solution," in which the solvent evaporates and the

rubber layer is peeled away.

Waxes

Waxing is a method of hair removal that includes applying heated or cold wax to hair-bearing skin and then swiftly removing the hardened wax and embedded hairs. To remove undesirable hair, two types of waxes are commonly used: cold or hot soft strip wax and hot firm stripless wax. For optimal use, all of these products require some type of instruction.

On the application, hot soft wax has a more liquid viscosity. It runs more easily to the base of the hair shaft when applied to the skin in a hot state. It forms a thin coating that can be removed with a nonwoven or muslin strip. It's applied in the same direction as hair growth and removed in the opposite.

Cold strip waxes are identical to hot soft waxes in terms of performance. Strips of wax or a cold, sugar-based substance are put onto the skin in the direction of hair development and then taken off in the opposite direction.

A thicker coating of heated wax is applied to the skin during hot hard waxing. As the wax cools and hardens, the hair becomes embedded in it. It's usually a lot thicker and sets a lot faster; it's best for thicker hair in smaller regions. The wax is rapidly removed by hand, along with the uprooted hair.

Wax products come in a variety of consistency and melting degrees. To solidify on the skin, a wax's melting point must be higher than the body temperature. Its melting point, on the other hand, should be low enough to allow it to spread across the skin without burning it. Furthermore, the wax must be strong enough to grasp the hair. Hard wax should be applied at a temperature of between 125 and 140 degrees Fahrenheit.

Hair removal waxes are based on rosins, which are typically blended with basic waxes, such as beeswax, to adjust their melting point and increase their strength, as none of the simple waxes used, for

example, match these criteria.

The following are the key components of waxes:

Hair-binding chemicals make the wax stickier and allow it to "grab" hair follicles. One of the examples of a hair binding agent is rosin. Pine trees produce rosins, which are hard and transparent components. Wood rosin, gum rosin, dimerized rosin, and rosin esters are examples of rosins. Rosinates, which are glyceryl monoesters formed of glycerin and rosins, are another example. They help waxes stick to each other. Methyl hydrogenated resinate, glyceryl hydrogenated resinate, polyethylene glycol hydrogenated resinate, and triethylene glycol resonate are examples of hydrogenated resonates.

Skin conditioning and skin protecting substances prevent the skin from harm during the waxing process as well as adjust the melting point of the rosins and resinates and make them more flexible. Waxes like beeswax, candelilla wax, and carnauba wax; oils like mineral oil, almond oil, linseed oil, soybean oil, and safflower oil; butter like cocoa butter and shea butter; and silicone oils are just a few examples. Natural ingredients are also used, and some of them may have extra benefits, such as anti-inflammatory properties. Honey extract, calendula *Officinalis* flower extract, and aloe extract are some examples. Preservatives such as phenoxyethanol, benzoates, and parabens, as well as antioxidants such as butylated hydroxytoluene (BHT) and butylated hydroxyanisole (BHA), may be added to the formulations if water is used. Water-soluble thickeners may also be added if water is included in the formulation. Colorants including iron oxide, alumina hydroxide, titanium dioxide, as well as organic pigments and perfumes, can all be used in the compositions.

Sugaring

Sugaring, like waxing, is a hair removal procedure. To make the sugar mixture, heat sugar, lemon juice, and water until it

becomes a syrup. Corn syrup, honey extract, and maltodextrin are examples of sugar components. The syrup is rolled into a ball, pressed flat against the skin, and then rapidly removed. The hair is removed fully from the hair shaft, just like waxing, and sugaring offers an alternative to waxing for those who are allergic to wax. Hair removal products based on sugar can be applied by hand or with a spatula. Because both methods are used at room temperature, there is no risk of skin burning. Furthermore, the original formulae without resins do not adhere to the skin securely. Resins are sometimes used in formulations nowadays, making them similar to waxes but without the drawbacks of waxes.

The fundamental problem of this method is that sugar and sugar derivative-based compositions contain significant volumes of water or alcohol, or mixes of both, which tend to evaporate each time the bottle is opened for product application. As a result, sugar or sugar derivatives from such compositions crystallize, causing hair loss and reducing the product's effectiveness. It also makes opening the bottle before use more difficult.

Electrolysis

Because the papillae are not always eliminated and hair quickly regrows, the mechanical waxing procedures outlined previously are only temporary and not usually totally successful. Electrolysis, which involves inserting a needle into the hair follicle and entirely killing the hair root with a mild DC, is without a doubt the most successful method of hair removal. This approach is used by some dermatologists and beauty clinics, but it is costly and time-consuming because each hair must be treated individually, and even a skilled operator can only handle 25-100 hairs per sitting.

Effects of Hair removal Cream

Getting rid of unwanted hair has become a way of life for many people. During adolescence, villus hair transforms into terminal hair in the beard area, which is

one of the reasons why young men begin shaving. The hairless face is regarded as more hygienic in some cultures. Hair removal may be required in some cultures, such as a ritual after reaching a specific age, whereas it may be prohibited in others for religious reasons. Hair removal that is done too frequently or incorrectly might have negative consequences and cause skin sensitivities.

By paying attention to the above effect of the hair removal cream there are also some major side effects of the hair removal cream, which has been explained below:

Removal of hair by dissolving the chemical in the product

When the chemical comes in the contact with hair it weakens and breaks the hair some chemicals like calcium hydroxide and potassium hydroxide are present in the hair removal which causes skin irritation as well as darkening of the skin.

In some cases, those who have sensitive skin may experience unpleasant sensations which could end up developing a rash.

Hair removal cream also causes some allergic reactions and skin damage.

As we know that our skin pH level is mildly acidic and the pH level of the cream differs from the pH of the skin they can affect the skin negatively which can lead to damage it can be more observable with sensitive skin people, so we should do a patch test before applying it on a large section of the skin.

Hair removal cream can also cause a chemical burn.

While the process of breaking down the hair, the cream can eventually break down your skin if we leave the cream or the product too long which can result in a first or second-degree chemical burn.

Hair removal cream is one of the most popular methods of getting rid of body hair but it is also a composition of many chemicals that can cause skin damage.

Strong Odors

The chemicals in hair removal creams have strong, unpleasant odors. Companies have tried hard to mask these smells, but

it's pretty much impossible. You will have to deal with the smells while using the creams and some odor may stay or remain on the skin for a few hours after application.

Another concern with the odors is that some of the chemicals emit fumes that can irritate the lungs and may be too strong for people with existing lung and breathing issues.

So here are the common side effects of the hair removal cream which can affect the skin, these side effects can also become major if they are not treated within a short period with the correct effective ways.

Conclusion

As our hair removal cream is a depilatory method & will be prepared with natural ingredients.

We are preparing natural hair removal cream just to avoid the side effects as the chemical causes irritation, chemical burn, strong odor, etc. To overcome these we are using some natural ingredients such as Papaya, mint, basil leaves, etc.

The main concern of this product is that our youth is becoming more concerned about health & they are leading towards natural as it doesn't cause any side effect to the body and they are trustworthy as well.

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