

Available online on 15.06.2024 at <http://ajprd.com>

Asian Journal of Pharmaceutical Research and Development

Open Access to Pharmaceutical and Medical Research

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Review Article

Revolutionizing Hair Care with Cosmetic Products

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ABSTRACT

Over the past 20 years, there has been a significant shift in the hair cosmetics market. The emphasis has shifted drastically from just cleaning to repairing, strengthening, minimizing oxidative damage, and promoting growth. More recent, shorter methods have emerged to give hair a naturally more glossy, silky, and manageable appearance. Over the past 20 years, there has been a significant shift in the hair cosmetics market. The emphasis has shifted drastically from just cleaning to repairing, strengthening, minimizing oxidative damage, and promoting growth. More recent, shorter methods have emerged to give hair a naturally more glossy, silky, and manageable appearance. A variety of hair types, including dry, greasy, colored, and gray hair, can benefit from the cleansing, calming, and conditioning properties of specialized grooming products. [5] Other products, such as hair dyes, relaxers and perms, shampoos, conditioners, and serums, are designed to change the color or composition of the hair shaft. Waxes and gels, as well as hair sprays, can change the hair shaft's "lift." Dermatologists are specialists in treating disorders of the scalp and hair, although the cosmetic uses of more recent cosmetic treatments are still undiscovered. With a focus on the Indian market for chemical and "natural" hair products, this research aims to. In conclusion, a comprehensive review of hair care emphasizes the importance of individualized routines, considering factors like hair type, concerns, and lifestyle. Quality products, with attention to ingredients and formulations, play a crucial role. Sustainable and ethical practices are increasingly valued by consumers. Regular assessments of personal routines, adapting to seasonal changes, and seeking professional advice when needed contribute to optimal hair health. The evolving landscape of hair care demands a dynamic approach, embracing innovation while prioritizing the well-being of both individuals and the environment. [1]

Key words: Dermatologists, Cosmetic Products, Hair Pathophysiology**ARTICLE INFO:** Received 16 Feb 2024; Review Complete 23 April 2024; Accepted. 30 May 2024; Available online 15 June. 2024**Cite this article as:**Dhanesh MS, Santosh BR, Naikawadi ND, Revolutionizing Hair Care with Cosmetic Products, Asian Journal of Pharmaceutical Research and Development. 2024; 12(3):157-168 DOI: <http://dx.doi.org/10.22270/ajprd.v12i3.1413>***Address for Correspondence:**

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INTRODUCTION:

WHAT IS COSMETIC SCIENCE?

Cosmetic science is a multidisciplinary field that combines elements of chemistry, biology, pharmacology, and engineering to develop and enhance cosmetic products. It involves researching and creating formulations for items like skincare, hair care, makeup, and fragrances, with a focus on improving appearance and promoting overall well-being. Cosmetic scientists work to understand the interactions between various ingredients and their effects on the skin and hair, ensuring the safety, efficacy, and quality of cosmetic products. Cosmetic science is a dynamic discipline that unites scientific principles with artistic flair to formulate products aimed at enhancing beauty and promoting skin and hair health.

1. MULTIDISCIPLINARY NATURE:

Cosmetic science draws from various fields such as chemistry, biology, pharmacology, and materials science. This interdisciplinary approach enables a comprehensive understanding of the physiological and chemical aspects of skin and hair.

2. FORMULATION EXPERTISE:

At its core, cosmetic science revolves around creating formulations that balance diverse ingredients. These formulations undergo rigorous testing to ensure stability, efficacy, and safety, meeting regulatory standards.

3. SKIN AND HAIR PHYSIOLOGY:

Cosmetic scientists delve into the intricacies of skin and hair physiology, studying how different compounds

interact with these biological structures. This knowledge is fundamental to creating products that are compatible with the body's natural processes.

4. ACTIVE INGREDIENTS:

Identifying and incorporating active ingredients, such as antioxidants, peptides and vitamins, is crucial. These components often provide specific benefits like anti-aging, hydration, or UV protection.

5. SAFETY AND REGULATION:

Ensuring the safety of cosmetic products is paramount. Cosmetic scientists work within regulatory frameworks, conducting thorough safety assessments and complying with industry standards to guarantee consumer well-being.

6. INNOVATION AND TRENDS:

Cosmetic science is marked by constant innovation to meet evolving consumer needs. Researchers stay attuned to emerging trends, integrating novel technologies and sustainable practices into product development.

7. CONSUMER-CENTRIC APPROACH:

Understanding consumer preferences and needs is central to cosmetic science. This involves considering factors like skin types, cultural diversity, and lifestyle choices to create products that resonate with a diverse audience.

8. ETHICAL AND SUSTAINABLE PRACTICES:

The industry is increasingly focusing on ethical and sustainable practices. Cosmetic scientists explore eco-friendly ingredients, cruelty-free testing methods, and sustainable packaging to align with growing environmental consciousness.

9. COSMETIC TECHNOLOGY:

Advancements in technology, such as nanotechnology and delivery systems, play a pivotal role in cosmetic science. These technologies enhance the penetration of active ingredients, improving product performance.

10. ACT OF COSMETIC SCIENCE:

The Drugs and Cosmetics Act, 1940 is an act of the Parliament of India which regulates the import, manufacture and distribution of drugs in India. The primary objective of the act is to ensure that the drugs and cosmetics sold in India are safe, effective and conform to state quality standards. The related Drugs and Cosmetics Rules, 1945 contains provisions for classification of drugs under given schedules and there are guidelines for the storage, sale, display and prescription of each schedule.

The act has been amended several times. The following are a list of amending acts:

The Drugs (Amendment) Act, 1960 (35 of 1960)

The Drugs (Amendment) Act, 1962 (21 of 1962)

The Drugs and Cosmetics (Amendment) Act, 1964 (13 of 1964)

The Drugs and Cosmetics (Amendment) Act, 1972 (19 of 1972)

The Drugs and Cosmetics (Amendment) Act, 1982 (68 of 1982)

The Drugs and Cosmetics (Amendment) Act, 1986

The Drugs and Cosmetics (Amendment) Act, 1995 (71 of 1995)

The Drugs and Cosmetics (Amendment) Act, 2008 (26 of 2008)

COSMETICS ARE MAINLY CLASSIFIED AS:

Skin Cosmetics: eg .Powder, lipstick,toner,soap

Nail cosmetics: eg . Nailpolish

Teeth cosmetic: eg. Toothbrush

Hair cosmetics: eg. Shampoo, Conditioner, Serum, Toner, Spray, Hair Oil, Waxes, Gel etc

HAIR PATHOPHYSIOLOGY:

STRUCTURE OF HAIR:

Hair, protective appendages on the body and structures of integument with sebaceous glands, Sweat glands and nails are considered an important part of the body, derived from the skin ectoderm. They are also known as epidermal derivatives, since they originate from the epidermis during Embryological development. As we know, the hair is mainly constituted by three parts: (a) the bulb, (b) the root and (c) the stem, and are implanted in the pilosebaceous follicle in the dermis. The bulb is the deepest end of the hair and is also the portion that makes it grow. It is connected to the richly innervated and vascularized dermal papillae, which allow the contribution of nutrients necessary for hair growth. The root is firmly fixed in the hair follicle, the part of the hair located between the bulb and the surface of the epidermis where hair takes the form of the stem. The root and stem are made of the same three concentric layers: the medulla, the cortex and the cuticle on the outside (Figure 1). The medulla is the central core. The next stratum, the cortex, represents the largest and thickest part of the hair determining many of their mechanical properties. The cortex is made of packed spindle-shaped cortical cells, filled with keratin filaments parallel oriented to the longitudinal axis of the hair shaft, and of an amorphous matrix of high sulfur proteins.

In particular, cysteine residues in adjacent keratin filaments tend to form covalent disulfide bonds with a strong crosslink between adjacent keratin chains; thus, it contributes to providing the shape, the stability, and the texture of the hair. The cuticle is a very resistant layer of overlapping dead cells that form a protective barrier against the outside environment and external aggressions. It consists of Endocuticle and Exocuticle. Normal cuticles have a smooth appearance, allowing light reflection and limiting friction between the hair shafts. Indeed, it is responsible for the hair luster and texture.

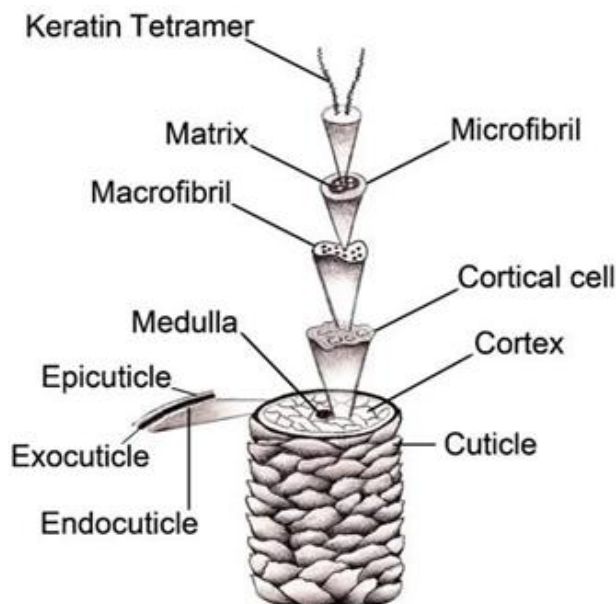


FIGURE 1:

The combination of the outer hydrophobic layer with the cortex gives the Physical properties of shine and volume (body), essential for the appearance of “healthy hair”. Indeed, if hair is damaged by frictional or chemicals forces with the subsequent removal of the flayer, the first hydrophobic defense, the hair fiber becomes much more fragile. It is useful to remember that hair fibers contain sulfur-rich proteins, lipids, water, melanin, and trace elements. Keratin is the main component of the hair. It is a fibrous and resistant protein, whose amino acidic chains are organized in α helix and contains mainly tyrosine, glycine and cysteine. It is usually present as acidic, neutral and basic keratin.[5]

STAGES OF HAIR GROWTH:

The Four Stages of the Hair Growth Cycle: **Anagen, Catagen, Telogen&Exogen**

- **ANAGEN PHASE:** Also known as the ‘Growth Phase’ or ‘Active Phase’, the Anagen Phase is when the cells in the root of your hair are most rapidly dividing so more

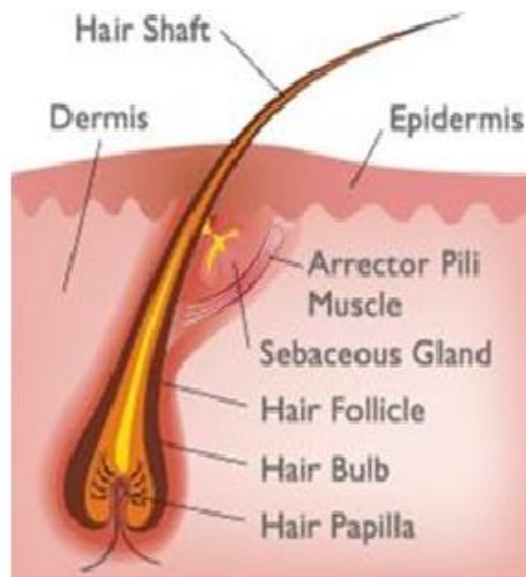


FIGURE 2:

new hair is formed. During the Anagen Phase, your hair grows around half an inch a month [about 6 inches a year], and faster in the summer than in winter. This phase of the Hair Growth Cycle lasts an average of 3-5 years.

- **CATAGEN PHASE:** Your hair cycle enters a short transitional phase known as the Catagen Phase, which signals the end of active hair growth and cuts individual hairs off from the blood supply and from the cells that produce new hair. Approximately 3% of all hairs are in this stage at any time.
- **TELOGEN PHASE:** The third stage of your natural hair growth cycle is the Telogen Phase, a resting period when strands remain in their follicles but are not actively growing. An estimate of 10-15% of your hairs are in the Telogen Phase at any given moment. It takes approximately 3 months or 100 days to grow hairs in this stage.



- **EXOGEN PHASE:** The final stage of the Hair Growth Cycle, when individual hair strands are released from their follicles and fall out. Now the whole process can begin again.[3]

VARIOUS TYPES OF HAIR COSMETICS:

1. Shampoo
2. Conditioner
3. Toner
4. Spray
5. Gel
6. Serum
7. Hair oil

8. Hair waxes**1. SHAMPOO:**

Shampoo is a hair care product, typically in the form of a viscous liquid that is used for cleaning hair. Less commonly, shampoo is available in solid bar format. Shampoo is used by applying it to wet hair, massaging the product into the scalp, and then rinsing it out.



Hair cleansers were made by boiling soapnut (Reetha; SapindusMukorossi) with Indian gooseberries (Amla; Phyllanthusemblica) and shikakai (Acacia concinna) in water and using the strained water to wash the hair. The other option was using a paste of Fuller's earth (multanimatti) on the scalp and rinsing it off with water.

INGREDIENTS USED IN FORMULATION OF SHAMPOO.

INGREDIENTS	
Anionic	Lauryl/Laureth Sulfates, Sarcosines, Sulfosuccinates
Cationic	Amino Esters, Long Chain, Amino Acids
Amphoteric	Imidazoliniums, Sultaines, Betaines
Non-Ionic	Polyoxyethylene Fatty Alcohols Sorbitol Esters
Natural	Soap bark, Agave, Soapwort, PolyoxyethyleneSorbital Esters, Polyoxyethylene Fatty Alcohols, Alkanolamides, Soap nut, Acacia Concinna
Foaming agents	Lauramine Oxide, Lauramide MEA, Cocamide MEA, CocamidopropylHydroxysultaine, Polysorbate 20
Conditioners	Fatty alcohol esters, Vegetable/ mineral oils, Hydrolyzed animal protein
Thickeners/ Opacifiers	Aqueous : Celulose gum, guar gum, PEG, mthylcellulose, clays Non-aqueous: Organoclays, Polyethylenes, trihydroxystearin, fumed silica
Additives	Natural, Plant Extracts, Almond Extract, Bam mint oil, Egg yolk, Chamomile, Citrus, Clove, Basil collagen, Vitamins, Veramides and Glutamic acid

ADVANTAGES:

1. Using the right type of shampoo on our hair makes our hair healthier.
2. Shampoo keeps our hair follicles clean and our scalps fresh.
3. The right shampoo can maintain hair color longer.
4. Clean and healthy scalps, follicles and hair shafts reduce the chance of hair loss.

2. CONDITIONERS:

Hair conditioner is a hair care cosmetic product used to improve the feel, texture, appearance and manageability of hair. Its main purpose is to reduce friction between strands of hair to allow smoother brushing or combing, which might otherwise cause damage to the scalp. Various other benefits

are often advertised, such as hair repair, strengthening, or a reduction in split ends.

Conditioners are available in a wide range of forms, including viscous liquids, gels and creams, as well as thinner lotions and sprays. Hair conditioner is usually used after the hair has been washed with shampoo. It is applied and worked into the hair and may either be rinsed out a short time later or left in.



INGREDIENTS	
Oil Phase	Cetearyl - Alcohol , Coco - Caprylate, Shea Butter
Viscosity Agent	Hydroxy - Ethyl - Cellulose
Wetting Agent	Glycerine
Preservative	Methyl-Isothiazolinone, Phenethyl-Alcohol Propylene - Glycol - 2 - Methyl Ether Citric Acid
pH Modifier	Citric Acid Lauryl - Glucoside (Neutral)
Emulsifier System	Cationic Surfactant 1 Cationic Surfactant 2
Dispersing Phase	Water

ADVANTAGES:

1. It helps to soften and smooth strands. We're often asked that age-old question how to get silky hair because it's such a sought after, hair-commercial-worthy look. .
2. It deep conditions.
3. It helps to add shine.
4. It provides moisture to a dry mane.
5. It detangles tresses.

3. TONER:

Hair toner, as a cosmetic product, is designed to adjust the tone of hair color. It helps eliminate unwanted brassiness or yellow tones, leaving the hair with a more balanced and desirable shade. Toning products can be applied at home or in a salon, depending on the desired results.

Hair toner is a product used on hair after it has been subject to strong chemical bleaching and lightening processes in order to get rid of brassy hair tones. The toner works most noticeably on light hair as it does not lift or permanently alter the color of hair, but rather adds a tone over it.

HOW TO USE HAIR TONER:

While it's generally recommended to always seek professional assistance when making any major color or style change to your hair, toning hair typically has relatively short-term results lasting between 4-6 weeks. Consequently, your time and finances might not stretch to receiving salon treatment every time, so here's a simple guide to how to use hair toner at home for best results, after, for example, dyeing your hair with Color Metallics M17 Metallic Silver.

1. Wash hair thoroughly and then apply the toner to towel dried or completely dry hair.
2. Apply the toner first to areas that require the most color correction or simply apply to the central part of the strands before working up to the roots and down to the tips.
3. If you have never toned your hair before, it's best to do a strand test first as the results of the treatment will vary depending on your hair's porosity.
4. Leave the toner in for between 5-20 minutes; you can rinse a small section to see when the color has fixed to your liking

INGREDIENTS	PURPOSE
Apple Cider Vinegar	Restores pH Balance
Chamomile Tea	Adds Highlights
Lemon Juice	Brightens and Clarifies
Aloe Vera Gel	Soothes and Moisturizes
Lavender Oil	Adds a Pleasant Fragrance



ADVANTAGES:

Hair toners can be used to achieve two things.

1. It can be used to add pigment to hair color that has faded over time and
2. It can be used to counteract unwanted colors like yellow tones or brassiness. Toning and glossing also add a nice boost in shine to the hair.

4. SPRAYS:

Hair spray is a styling product used to hold hair in place. It comes in aerosol or pump bottles and typically contains polymers that create a flexible film on the hair, providing a firm hold. There are various types, including volumizing, extra hold, and flexible hold sprays. It's important to follow usage instructions and avoid excessive application to prevent hair damage. Some brands also offer specialized sprays for specific hair types or concerns.

There are various types of hair sprays designed for different purposes. Some common types include:

1. old/Finishing Sprays: These provide a firm hold to maintain hairstyles.
2. Volumizing Sprays: Add volume and thickness to the hair.
3. Texturizing Sprays Enhance texture and create a tousled look.
4. Shine Sprays: Add a glossy finish to the hair.
5. Heat Protectant Sprays: Shield hair from heat damage during styling.
6. Anti-Frizz Sprays: Tame frizz and flyaways for smoother hair.
7. Dry Shampoos: Absorb excess oil and refresh hair without water.
8. Color-Enhancing Sprays: Revive or enhance hair color temporarily.

INGREDIENTS	PURPOSE
Water	Base for formulation
Ammonia	Adjust pH and opens hair cuticles
Hydrogen Peroxide	Lightens Hair Color
CetylAlcohol	Emolient, adds thickness and texture
Citric Acid	Balances pH and enhances shine
Conditioning Agents	Improve manageability and softness
Pigments or Dyes	Adds color or neutralizes unwanted tones
Fragrance	Provides a pleasant Scent
Preservatives	Extends product shelf life



ADVANTAGES:

1. Gives structure.
2. Endures humidity.
3. Can be worked also after application.
4. Dries out very quickly.
5. Easy to remove.
6. The formula is paraben-free and with no added colourings.

5. GELS:

These are useful products for individuals with diffuse hair thinning, as when applied to the damp hair, can be styled to

give a lift from the scalp, giving a semblance of volume. They also give a gloss to the hair. The constituents are similar to hair sprays and can be used for 'styling' or 'sculpting' the hair

Hair gel is composed of mostly water and may contain humectants, proteins, conditioners and oils.

There are many types of hair gel. Gels can hold moisture and protect the hair, enhance and define curls, lengthen the hair, style hair into place, control frizz, create a flexible hold, add body and shine, provide help with manageability of the hair and provide a smooth comb through.

Hair gels are perfect for most hair types and can be applied to wet or dry hair.

INGREDIENT	FUNCTION
Water	Solvent
Polymers / Carboner	Thickening and Gelling Agent
Alcohol	Solvent and helps in quick drying
Fragrances	Adds Scent to the Gel
Preservatives	Extends shelf life and prevents Spoilage
Conditioning Agents	Improves hair Texture and manageability
Thickeners	Enhance Viscosity for better consistency
Humectants	Attracts and retains moisture
Styling Agents	Aids in shaping and holding the hairstyle



ADVANTAGES:

1. Gels can hold moisture and protect the hair
2. Enhance and define curls
3. Lengthen the hair
4. Style hair into place
5. Control frizz
6. Create a flexible hold
7. Add body and shine,
8. Provide help with manageability of the hair and
9. Provide a smooth comb through.

6. SERUM:

Hair Serum is a silicon-based hair care product which is applied on the hair to make it more soft and shiny. Hair serum forms a protective layer on your hair and helps to make your dry, frizzy hair more manageable. Unlike oil, hair serums do not penetrate into the hair shaft, but remain on the surface of your hair, forming a thin protective film. Silicon-based hair serums help to strengthen your hair and add shine to it.

Benefits of Hair Serum:

Just as a facial serum adds shine to your face by providing nourishment and moisturization to the skin, similarly hair serum helps to boost the volume of hair and makes hair lustrous. It can be considered as a hair growth serum which helps to treat your major hair problems. Let's have a closer look and have a better understanding of the uses of hair serums:

1. Protects Against Sun Damage, Hair Serum forms a protective coating over your hair and protects it against sun damage.
2. Protection Against Pollution And Humidity, Using the right kind of serum helps to protect your hair against dust, grime and humidity.

3. Tames Your Frizzy Hair, It helps to make your frizzy hair soft and manageable.
4. Prevents Hair Damage, Hair serums have low pH, hence it helps to minimize hair damage.
5. Promotes Hair Growth

Hair serums help to soften the strands, by moisturizing and nourishing your strands, thus preventing hair fall. This adds to the volume of your hair and promotes hair regrowth.

The latest in the market is Hair Volumizing Serum from Anveya, which instantly volumizes hair along with acting as a heat protectant. It's an instant hair bulk-up formula perfect for limp and flat hair. The serum makes hair soft, smooth, and more manageable.

When, Why And Who Should Use A Hair Serum?

If you feel that your favourite shampoos and conditioners are not giving you the desired result, then dab a few drops of hair serum onto your damp hair to see the wonders it does to your hair. If you happen to use hair styling tools very often and you tend to colour your hair, then your hair tends to lose the natural moisture and becomes dull, dry and frizzy. If you are going through bad hair days, usage of this serum comes to your rescue.

To utilize the maximum benefits of hair serum you should always apply the serum on clean and washed hair. Everyday your hair has to go through a lot of wear and tear, fighting pollution, grime and humidity etc. But a good hair serum can prove to be a lifesaver as it acts as a quick fix for your damaged hair. It immediately brings back life to your dull, damaged and frizzy hair.[11]

INGREDIENTS	PURPOSE
Dimethicone	Smoothing and Shine
Cyclomethicone	Enhances product spread
Argan Oil	Nourishment and hydration
Jojoba Oil	Misturising
Vitamin E	Antioxidant, promotes Shine
Panthenol	Strengthens and conditions
Silicone Compounds	Smoothness and fizz control



ADVANTAGES:

1. Adds Shine. Using hair serum boosts the shine of the hair, and makes it striking to look at.
2. Helps Nourish Dry Hair. Dry hair can be very annoying.
3. Softens Your Strands.
4. Protects Against Humidity.
5. Helps With Damage.

7. HAIR OIL:

Hair oil is an oil-based cosmetic product intended to improve the condition of hair. Various types of oils may be included in hair oil products. These often purport to aid with hair growth, dryness, or damage

Humans produce natural hair oil called sebum from glands around each follicle. Other mammals produce similar oils such as lanolin. Similar to natural oils, artificial hair oils can decrease scalp dryness by forming hydrophobic films that decrease trans epidermal water loss, reducing evaporation of water from the skin.[4] Oils on the hair can reduce the absorption of water that damages hair strands through repeated hygral stress as hair swells when wet, then shrinks as

it dries.[5] Oils also protect cuticle cells in the hair follicle and prevent the penetration of substances like surfactants.[5] Saturated and monounsaturated oils diffuse into hair better than polyunsaturated ones

Benefits of Using Hair Oil

Natural oils are rich in vitamins, antioxidants, and fatty acids, essential for a healthy scalp and hair. Hair oils can be good for everybody if chosen for the suitable hair type and texture.

Hair oils, in general, provide the following benefits:

They keep the scalp hydrated by providing them with moisture. They aid hair growth by providing the hair follicles with the correct amount of nutrients. Oils benefit your hair by strengthening it and protecting it from external damage (harsh chemicals or pollutants). Preventing damage is another advantage that they provide your hair with. Many people oil their hair regularly for the shine and glow. Hair oil takes care of premature greying by keeping the vitamin deficit at bay. A dry scalp exposed to many environmental issues leads to active hair fall. Hair oils take care of it effectively.

INGREDIENTS	BENEFITS
Coconut Oil	Moisturizes and promotes hair growth
Argan Oil	Adds shine and reduces frizz
Olive Oil	Conditions and improves hair elasticity
Jobba Oil	Mimics natural scalp oils, promotes health
Almond Oil	Nourishes and strengthens hair
Castor Oil	Stimulates hair growth and reduces breakage
Amla (Indian Gooseberry) Oil	Supports scalp health and hair growth
Lavender essential Oil	calms the scalp and promotes relaxation



ADVANTAGES:

1. Preventing Hair Breakage and Split Ends.
2. Promoting Hair Growth and Thickness.
3. Nourishing and Moisturizing the Scalp.
4. Reducing Stress and Promoting Relaxation.
5. Reducing Dandruff and Itchy Scalp. ...
6. Maintaining Your Colored Treated Hair.
7. Onion Hair Oil.

8. HAIR WAX:

Hair wax is a thick hairstyling product containing wax, used to assist with holding the hair. In contrast with hair gel, most

of which contain alcohol, hair wax remains pliable and has less chance of drying out. It is often sold under names such as pomade, putty, glue, whip, molding gum, or styling paste. The texture, consistency, and purpose of these products vary widely and each has a different purported purpose depending on the manufacturer. Traditionally, pomade is a type of hair wax that also adds shine to one's hair.

Aside from conditioning hair, wax enhances hair volume, shine, structure and texture. That's a formidable list of benefits from just one product. Find out why exactly wax for hair is the ideal all-in-one styling aid. Wax for hair styling is a solid substance with qualities similar to hair gel.

INGREDIENTS	PURPOSE
Beeswax	Provides hold and Texture
Carnauba Wax	Adds Firmness and glass
Emollients	Imparts Shine and smoothness
Lonolin	Enhances moisture retention
Essential Oils	Adds fragrance and potential benefits
Polymers	Improves hold and style longevity
Glycerine	Helps retain moisture in the hair



ADVANTAGES:

1. Instantly shape the hair.
2. Styling the hair.
3. Reduce Split ends.
4. Not harmful to hair.

EVALUATION TEST

To revolutionize hair care cosmetics, the following evaluation parameters should be adopted:

1. Ingredients Quality:

- Assess the efficacy and safety of ingredients.
- Prioritize natural and nourishing components.

3. Scientific Research:

- Conduct thorough scientific research to support product claims.
- Invest in studies validating the effectiveness of the formulations.

4. Customization Options:

- Offer personalized solutions for different hair types.
- Consider factors like texture, thickness, and specific hair concerns.

5. Sustainability:

- Use eco-friendly packaging and sustainable sourcing.
- Consider biodegradable formulations to minimize environmental impact.

6. Clinical Testing:

- Conduct clinical trials to validate product performance.
- Obtain third-party certifications for credibility.

7. Ethical Practices:

- Ensure ethical sourcing of ingredients.
- Promote cruelty-free and transparent manufacturing processes.

8. Regulatory Compliance:

- Adhere to local and international regulations.

- Ensure product safety and compliance with cosmetic standards.

By evaluating these parameters, you can create a comprehensive strategy for revolutionizing hair care cosmetics with innovative and consumer-centric products.

CONCLUSION

- A thorough analysis of hair care concludes by stressing the value of customized regimens that take lifestyle, concerns, and hair type into account. High-quality goods that pay close attention to formulations and ingredients are essential.
- Consumers are beginning to value ethical and sustainable behaviors more and more. For maximum hair health, it's important to regularly evaluate one's habits, adjust for seasonal variations, and, when necessary, seek professional counsel.
- Utilizing technology, adopting sustainable practices, and improving formulas are all necessary to revolutionize hair cosmetics.
- Biotechnology and plant-based extracts are two examples of innovative components that might improve product efficacy while reducing environmental impact. In line with the evolving ideals of consumers are cruelty-free and sustainable packaging methods.
- Personalized hair care recommendations with AI integration guarantee customized solutions. Working together with salons to gain expert views and ongoing research and development to adjust to changing trends reinforce a transformational strategy.
- In the end, transforming hair cosmetics necessitates a comprehensive dedication to sustainability, creativity, and quality.

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