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Review Article

Nasya Karma

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Nasya Karma in Cosmetology: An Anatomical Approach - A Natural Solution for Skin and Hair Wellness

Choudhary M[1*], Sharma S[2]

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[1*] Mamta Choudhary, Post Graduate Scholar, PG Department of Rachana Sharir, Post Graduation Institute of Ayurveda, Dr Sarvepalli Radhakrishanan Rajasthan Ayurved University, Jodhpur, Rajasthan, India.

[2] Shyoram Sharma, Associate Professor, PG Department of Rachana Sharir, Post Graduation Institute of Ayurveda, Dr Sarvepalli Radhakrishanan Rajasthan Ayurved University, Jodhpur, Rajasthan, India.

In Ayurveda, Nasya Karma is a specialist therapeutic treatment that involves administering medication via the nose. Traditionally used to treat problems of Urdhvajatrugata (above the collarbone), its use in cosmetology is becoming more well-known because of its effects on the head and face. The anatomical foundation, conventional wisdom, and current applicability of Nasya Karma in skin and hair health are examined in this paper. The relationship between neurovascular networks and nasal administration pathways that impact skin texture, hair development, and rejuvenation is highlighted. This article examines the fundamentals of Nasya Karma, its workings, and its uses in enhancing facial characteristics, halting hair loss, and improving skin texture.

Keywords: Nasya Karma, Cosmetology, Ayurveda, Anatomical Approach, Skin Wellness, Hair Health

Corresponding Author

Mamta Choudhary, Post Graduate Scholar, PG Department of Rachana Sharir, Post Graduation Institute of Ayurveda, Dr Sarvepalli Radhakrishanan Rajasthan Ayurved University, Jodhpur, Rajasthan, India.

Email: monu7733943294@gmail.com

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Introduction

One of the *Panchakarma* treatments in *Ayurveda, Nasya Karma* is mostly recommended for conditions affecting the head and upper body. *Nasya* may have wider uses, such as improving skin and hair health, according to recent integrative medicine techniques.

The nasal cavity presents a special pathway for the administration of therapeutic drugs because of its high vascularity and physical closeness to the brain. The neuroanatomical and physiological foundation of *Nasya Karma* is examined in this study, along with its potential applications in trichology and dermatology.**[1,2]**

Stress, hormone imbalances, and environmental pollutants are frequently implicated in modern dermatological problems such as premature greying, hair loss, acne, and facial dullness. The anti-inflammatory, cleansing, and restorative qualities of *Nasya Karma* offer a natural substitute.

Despite its historical origins, there is still little anatomical research and scientific support. By going over the anatomical justification, therapeutic mechanisms, and empirical data pertaining to *Nasya Karma's* cosmetic benefits, this paper seeks to close that gap.

Materials and Methods

This conceptual study combines modern anatomical and physiological knowledge with traditional *Ayurvedic* classics.

Traditional *Ayurvedic* treatises, neuroanatomical books, and peer-reviewed journal publications were consulted. The parameters listed below were looked at:

1. Nasya Karma's Neuroanatomical and Physiological Mechanisms in Cosmetics

A. The Neuroanatomical Routes

The nasal cavity provides direct access to the olfactory (CN I) and trigeminal (CN V) nerves. It is known that these cranial nerves use neuroendocrine signals to affect skin physiology. Hormonal control is impacted by the olfactory nerve's connections to the limbic system and hypothalamus.**[3]** These nerves may be impacted by intranasal stimulation, which could improve local circulation, modulate stress hormones, and provide nutrients to hair follicles.

B. Activation of the Hypothalamic-Pituitary Axis (HPA)

The health of skin and hair is influenced by the HPA axis, which regulates systemic hormonal responses. This axis might be stimulated by *Nasya Karma* through olfactory-limbic-hypothalamic connections. Collagen synthesis and hair development are supported by increased DHEA and growth hormone release.**[4]** Additionally, sebaceous gland activity and melanogenesis are impacted by the regulation of thyroid hormones and cortisol.

C. Cerebral Blood Flow and Access to CSF

Rapid systemic absorption is made possible by the nasal mucosa's strong vascularization. Direct access to the brain's pial circulation is made possible by the vascular network of the lamina propria.**[5]** This could lessen sympathetic hyperactivity, which is connected to baldness and early aging. *Nasya Karma's* delivery of neuronutrients may help promote follicular and dermal regeneration.

D. Facial Neurovascular Stimulation and *Marma* Points

Anatomically, a number of *Marma* sites are connected to neurovascular confluences and cranial sutures. *Adhipati, Apanga, Utkshepa,* and *Shankha* the superficial temporal and occipital arteries' vascular regions line up with *Marma* points. By indirectly stimulating these areas, *Nasya Karma* encourages collagen remodeling and microcirculation.**[6]**

E. The Immune and Lymphatic Interface

The deep cervical lymph nodes are connected to the nasal lymphatic drainage, which is essential for immunological control. This mechanism eliminates oxidative byproducts and inflammatory cytokines that damage skin and hair follicles.**[7]** Therefore, the detoxifying properties of *Nasya Karma* may help with illnesses including seborrheic dermatitis, acne, and eczema.

2. Ayurvedic and Contemporary Integrative Views on the Anatomical Foundation of *Nasya Karma* in Skin and Hair Wellness

Ayurvedic principle of *"Nasa hi Shiraso Dwaram,"* which translates to "nose is gateway to the head," underpins the medicinal significance of the nasal pathway. The importance of *Nasya Karma* in affecting *Urdhva Jatru* (structures above clavicle),

Particularly the brain, scalp, sinuses, face skin, and hair roots, is highlighted by this idea. According to traditional *Ayurvedic* doctors, pharmaceutical oils or powders administered through the nose might directly reach and calm the head region's morbid *Doshas*, resulting in both therapeutic and restorative benefits.**[8,9]**

A. Neurovascular Interaction

The limbic system and olfactory bulb, which are involved in emotion, hormone control, and skin homeostasis, are directly connected to the olfactory area, which is located at the roof of the nasal cavity. In addition, the forehead, scalp, cheeks, and jaw line are innervated by the trigeminal nerve (CN V), which is often implicated in cosmetic issues such as dullness, hair loss, and acne.**[10]**
The nasal mucosa and the facial skin and scalp share sensory pathways through the ophthalmic (V1), maxillary (V2), mandibular (V3) branches.

These brain pathways contribute to neurogenic inflammation and skin aging in addition to transmitting sensory information. *Nasya* may affect local circulation and cellular healing pathways by stimulating these nerve terminals.**[11]**

B. Detox and Lymphatic Pathways

Similar to mucosal immune systems (such as the gut's GALT), the nasal-associated lymphoid tissue (NALT) aids in systemic detoxification and immune monitoring. Daily *Pratimarsha Nasya* may help eliminate inflammatory mediators and metabolic waste products, which would lessen skin dullness, pigmentation, and puffiness on the face. Additionally, because medicinal oils are lipophilic, they readily permeate the epithelial lining and affect sebaceous gland function, perhaps repairing the health of the scalp and averting follicular damage, seborrhea, or dandruff.

C. Regulation of Hormones and Stress

Bypassing the blood-brain barrier and reaching the hypothalamus and pituitary gland directly, intranasal medication delivery can control hormones related to stress response, melanin synthesis, and hair growth cycles.**[12]** For instance, long-term stress raises cortisol, which impacts the function of the skin barrier and encourages telogen effluvium, or hair loss. *Nasya* oils containing *Brahmi, Shankhapushpi,* or *Jatamansi* may alter this axis, lowering stress-related skin and hair conditions.

3. Delivery Paths from the Nose to the Brain

Effective channels for nasal drug delivery systems (NDDS) are provided by the physiological makeup of the brain and nasal cavity. Drug molecules get past the olfactory or respiratory epithelium barriers via a variety of pathways before being administered via the nose at the pial brain surface. The chemicals can spread to other central nervous system (CNS) tissues after entering the brain.

Three main trafficking channels have been discovered as of right now:

1. The Blood Circulation Route
2. The pathway of the trigeminal nerve
3. The Pathway of the Olfactory Nerve

After being absorbed in the nasal cavity, drugs may proceed to the cerebrospinal fluid (CSF) via the trigeminal nerve or olfactory bulb before arriving in the brain. As an alternative, the medication might enter the bloodstream through the respiratory or gastrointestinal tract before passing through the blood-brain barrier (BBB).**[13]**

A. The Olfactory Pathway

There are two parts to the olfactory system: the extracellular and intracellular routes.

- Intracellular Pathway: Also known as the olfactory nerve pathway, this starts when nanoparticles are internalized by olfactory receptor neurons. These are exocytosed by mitral cells and transported by endocytic vesicles in olfactory ensheathing cells (OECs). **[14]**
- Extracellular Route: transcellular pathway, which can be facilitated by receptor-mediated endocytosis or passive diffusion over the SUS membrane, is appropriate for hydrophobic nanoparticles.**[15]**

B. The Trigeminal Nerve System

The largest cranial nerve is the trigeminal nerve (cranial nerve V), which has three main branches: the mandibular, maxillary, and ophthalmic.**[16]**

C. The Pathway of Blood Circulation

Because lamina propria of nasal mucosa is densely packed with lymphatic & blood capillaries, drugs can enter systemic circulation more quickly. Low molecular weight lipophilic compounds can therefore penetrate blood-brain barrier & enter brain.**[17]**

The nasal method provides the following advantages over intravenous administration:

- Quicker absorption
- Non-invasive administration
- Prevents first-pass metabolism
- Less systemic exposure

Only a few medications, though, can enter the brain directly through this pathway. Nasal drug delivery systems have included nanotechnology to address issues with hydrophilic or high molecular weight medications. Drugs are shielded from enzymatic breakdown and immunological clearance by nanocarriers (such as polymers, lipids, and inorganic nanoparticles), which prolongs circulation and improves BBB penetration. Nanoparticles' capacity to traverse the blood-brain barrier is further enhanced by surface modification.**[18]**

4. The Association Between *Nasya Dravyas* and Their Impact on Anatomical Structures in the Wellness of Skin and Hair

A. Sinuses and Nasal Cavity

Dravyas used were *Anu Taila, Ksheerabala Taila,* and *Brahmi Ghrita.*

Impacts:
By facilitating the absorption of medicinal oils through the nasal mucosa, *Nasya* treatment influences the sinuses and related brain regions and permits passage into the systemic circulation.**[19]** Local inflammation, which is frequently linked to lifeless skin and hair loss, is decreased when obstructions in the paranasal sinuses are cleared. **[20]** Furthermore, through neuroendocrine regulation, stimulation of the olfactory nerve (Cranial Nerve I) increases skin tone and promotes relaxation.**[21]**

B. Nervous System (Autonomic & Cranial Nerves)

Dravyas used were *Shadbindu Taila, Jatyadi Taila,* and *Bala Taila.*

Impacts:
Nasya relieves stress-related skin and hair problems by activating the olfactory nerve, which has a direct connection to the limbic system.**[22]** By modulating the trigeminal nerve (Cranial Nerve V) through nasal medication delivery, face blood flow and neuronal function in the scalp are improved.**[23]** Additionally, sebaceous gland activity is balanced and dandruff and acne are avoided through the regulation of the autonomic nervous system (ANS). **[24]**

C. Blood Flow to Skin and Hair Follicles: The Circulatory System

Impact of the *Dravyas* Employed: *Tila Taila, Bhringraj Taila,* and *Yashtimadhu Ghrita*

Increased blood flow via the external carotid artery and facial artery nourishes hair follicles and improves skin radiance.**[25]** Improved microcirculation lessens hair loss and fortifies the hair papilla.**[26]** The removal of pigmentation and acne is aided by detoxification via the face venous system.**[27]**

D. Lymphatic System (Immune Regulation & Detoxification)

Dravyas Used: *Manjistha Ghrita, Guduchi Taila,* and *Neem Taila;*

Effects: Deep cervical lymph nodes facilitate lymphatic outflow, which lessens dark circles and puffiness.**[28]** Acne outbreaks are decreased by improved lymphatic drainage in superficial facial structures, which inhibits the buildup of toxins.**[29]** Additionally, *Guduchi* and *Neem's* immunomodulatory and antibacterial properties aid in preventing dandruff and scalp infections.**[30]**

E. Endocrine System (Regulation of Sebum and Hormonal Balance)

Brahmi Ghrita, Shatavari Taila, and *Ksheerabala Taila* were the *Dravyas* that were employed.

Effects: *Nasya* corrects hormonal imbalances associated with acne and hair thinning by regulating the hypothalamic-pituitary axis (HPA).**[31]** Dandruff, plugged pores, and excessive sebum production can all be avoided by controlling sebaceous glands.**[32]**

F. Hair Follicle Anatomy (Control of Hair Strength & Growth)

Dravyas Used: *Jatamansi Taila, Bhringraj Taila,* and *Brahmi Taila.*

Effects: *Nasya* promotes growth and delays premature greying by stimulating the dermal papilla cells of hair follicles.**[33]** The hair shaft is strengthened and breakage is reduced when nutrients are better absorbed at the hair bulb.**[34]**

A healthy scalp environment is supported by balanced sebaceous gland activity, which lowers hair loss.**[35]**

***Nasya's* overall advantages in cosmetology**

A. Improves the skin's brightness, moisture content, and complexion.
B. Minimizes dark circles, pigmentation, and acne
C. Reduces hair loss by strengthening hair follicles.
D. Keeps sebum production in check, avoiding dryness and oiliness.
E. Detoxifies the skin and scalp, reducing dandruff and infections.

Discussion

The increasing need for holistic, non-invasive, and sustainable therapies is answered by the incorporation of *Nasya Karma* into contemporary cosmetology. It is particularly well-suited for treating aesthetic issues due to its physical alignment with neurovascular structures and proven impacts on hormonal and psychological wellness. Beyond conventional head-related conditions, *Nasya Karma* has the ability to promote holistic wellbeing, especially in the areas of trichological and dermatological health. Modern knowledge of anatomy and physiology gives this age-old practice a foundation.

Synchronization of Neuroendocrine Systems

Hormonal imbalance and stress are major causes of skin aging and hair loss. *Nasya* may be used as a non-invasive neuromodulatory treatment for disorders of the skin and scalp because of its capacity to alter the olfactory-hypothalamic-pituitary axis.

Dynamics of Vascular and Lymphatic

Better lymphatic drainage and circulation are essential for detoxification, immunological response, and tissue oxygenation. *Nasya* aids in these procedures, which may enhance skin tone, lessen pigmentation, and feed hair follicles.

Synergy between *Ayurveda* and Modern Medicine

Neurovascular anatomy is consistent with the *Dosha* balance and *Marma* treatment tenets of *Ayurveda*. By focusing on important anatomical hubs that affect both local and systemic health, *Nasya* serves as a link between traditional and modern therapy.

Applications in Clinical Practice

A. Growing clinical interest indicates that *Nasya* could be advantageous:
B. Sebaceous gland control of acne vulgaris
C. Alopecia through better hormonal balance and blood flow
D. Melanocyte modulation leading to hyperpigmentation
E. Psoriasis and eczema by lowering immunological dysregulation and local inflammation

Conclusion

The way that *Nasya Karma* interacts with cranial nerves, neuroendocrine centers, cerebrovascular networks, and lymphatic channels supports its anatomical and physiological significance in skin and hair health.

A convincing basis for applying *Nasya* in dermatological therapy is provided by fusing traditional *Ayurvedic* knowledge with new scientific discoveries. The usefulness of *Nasya* in integrated skin and hair health methods may be confirmed by additional clinical research and standardization of *Nasya* protocols.

A potential natural remedy for improving the health of skin and hair is *Nasya Karma*. Deep tissue feeding and renewal are encouraged by the combination of herbal oils, nasal administration, and *Ayurvedic* principles. As interest in natural cosmetology grows, *Nasya* provides a comprehensive, side-effect-free substitute for traditional therapies.

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