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Review Article

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"COMPARATIVE PERSPECTIVES ON NASYA THERAPY IN ENT AND OPHTHALMIC DISORDERS: AN AYURVEDIC AND MODERN REVIEW"

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ABSTRACT

Introduction: Nasya, the administration of medicated oils, powders, or decoctions through the nasal route, is one of the five Panchakarma therapies described in Ayurveda. It is specifically indicated for diseases of the head and neck region, including ENT (Ear, Nose, and Throat) and ophthalmic disorders. Ancient texts describe the nose as the "gateway to the head" (*Shiraso Dwaram*), highlighting its therapeutic potential in conditions affecting sensory organs. **Methods:** This review employed a comprehensive literature search using Ayurvedic classical texts (Charaka Samhita, Sushruta Samhita, Ashtanga Hridaya), PubMed, Scopus, Web of Science, and Google Scholar databases. Both experimental and clinical studies published between 2000–2025 were included. Keywords such as "Nasya," "ENT disorders," "ophthalmic disorders," "Ayurveda," and "herbal nasal therapy" were used. Inclusion criteria focused on studies exploring Nasya in ENT or eye disorders, while exclusions involved non-peer-reviewed works or anecdotal reports. **Results:** Evidence from Ayurveda indicates that Nasya is beneficial in disorders like sinusitis, rhinitis, migraine, cervical spondylosis, optic neuropathy, and Timira (refractive errors). Modern research supports its pharmacological effects, including anti-inflammatory, neuroprotective, mucolytic, and ocular perfusion-enhancing actions. Clinical outcomes show improved nasal patency, reduced sinus inflammation, better headache control, and enhanced visual acuity. A comparative review demonstrates that while ENT applications of Nasya have stronger modern evidence (e.g., sinusitis, allergic rhinitis), ophthalmic uses require more robust validation though promising results exist. **Discussion:** Nasya therapy bridges traditional Ayurvedic wisdom with modern drug delivery principles, particularly intranasal administration targeting the central nervous system and ocular tissues. The review highlights gaps in standardized formulations, dosage protocols, and clinical trials. **Conclusion:** Nasya remains a versatile therapy for ENT and ophthalmic disorders, with classical rationale and emerging modern validation. Strengthening pharmacological and clinical evidence could expand its role as an integrative therapeutic approach.

KEYWORDS: Ayurveda, ENT disorders, Nasya therapy, ocular therapeutics, Panchakarma

INTRODUCTION

ENT and ophthalmic disorders constitute a significant public health burden worldwide[1]. Conditions such as sinusitis, allergic rhinitis, migraine, conjunctivitis, and refractive errors not only affect quality of life but also impose substantial healthcare costs[2-3]. Current biomedical interventions, while effective, are often associated with side effects, recurrence, or limitations in long-term management[4-5].

Ayurveda, the ancient Indian system of medicine, emphasizes holistic approaches to health. Among the Panchakarma therapies, Nasya is uniquely indicated for diseases above the clavicle[6-7]. By administering medicated substances through the nasal route, Ayurveda posits that the therapy reaches the *Shiras* (head) and exerts direct effects on the nervous and sensory organs. Classical references mention its utility in *Pratishyaya* (rhinitis), *Ardhavabhedaka* (migraine), *Karna roga* (ear diseases), *Timira* (refractive disorders), and other head–neck pathologies[8-9].

The objective of this review is to comprehensively evaluate the role of Nasya therapy in ENT and ophthalmic disorders. It aims to compare classical Ayurvedic descriptions with modern pharmacological and clinical findings, highlighting strengths, limitations, and potential research directions[10].

MATERIALS AND METHODS

- **Databases searched:** PubMed, Scopus, Web of Science, AYUSH Research Portal, Google Scholar[11].
- **Keywords used:** "Nasya therapy," "Ayurveda nasal therapy," "ENT disorders," "ophthalmic disorders," "herbal intranasal delivery. [12]"
- **Inclusion criteria:** [13]
  - Classical Ayurvedic references related to Nasya.
  - Clinical and experimental studies (2000–2025).
  - Peer-reviewed original articles, reviews, and clinical trials involving ENT or ophthalmic disorders treated with Nasya.
- **Exclusion criteria:** [14]
  - Non-peer-reviewed literature.
  - Case reports with insufficient methodology.
  - Non-English publications lacking translation.
- **Study type reviewed:** [15]
  - Ayurvedic classical treatises.
  - Clinical trials (randomized and observational).
  - Preclinical experimental studies.
  - Pharmacological evaluations of Nasya formulations.

OBSERVATION AND RESULTS

1. Classical Foundations of Nasya

Ayurvedic literature extensively describes Nasya as a therapeutic intervention for diseases occurring above the clavicle (*Urdhwajatrugata Vikara*). The nose is termed the "gateway to the head" (*Nasa hi shiraso dwaram*), emphasizing its role in delivering medicines to the brain and sense organs. The procedure is indicated for disorders of the head, neck, ENT system, and eyes.

The *Charaka Samhita* describes various forms of Nasya including *Avapeedaka Nasya* (decoction drops), *Pratimarsha Nasya* (daily oil application for health maintenance), and *Marsha Nasya* (therapeutic oil instillation). *Sushruta Samhita* further elaborates on its applications in *Pratishyaya* (rhinitis), *Ardhavabhedaka* (migraine), *Karna Roga* (ear diseases), *Netraroga* (eye disorders), and *Manyastambha* (cervical spondylosis).

Thus, classical texts provide a broad spectrum of indications, supporting its relevance for ENT and ophthalmic disorders.

2. Mechanism of Action in Ayurveda

From an Ayurvedic perspective, the nasal route allows medicines to influence the *Shiras* (head) directly. Nasya eliminates aggravated *Kapha* from the supraclavicular region while nourishing *Vata* and *Pitta*. It clears obstruction of *Srotas* (channels), enhances sensory perception, and improves mental clarity.

Oil-based Nasyas (like Anu Taila, Shadbindu Taila) pacify Vata-Kapha, while powder-based or decoction Nasyas (*Pradhamana Nasya*, *Avapeedaka Nasya*) remove obstructive Kapha. This tailored approach reflects Ayurveda's personalized medicine principle.

3. Modern Mechanism and Pharmacological Correlation

Modern science explains Nasya through intranasal drug delivery mechanisms. The nasal mucosa is highly vascularized and provides direct access to the systemic circulation and central nervous system (via olfactory and trigeminal pathways). This allows drugs to bypass the hepatic first-pass metabolism and act faster.

- ENT benefits: Anti-inflammatory, antimicrobial, and mucolytic effects of herbal oils explain efficacy in sinusitis and rhinitis.
- Ophthalmic benefits: The olfactory and trigeminal pathways offer routes to reach ocular tissues, explaining potential benefits in optic neuropathies and ocular surface disorders.
- Neuroprotective effects: Antioxidant-rich oils may prevent neuronal degeneration, supporting traditional claims in migraine and Timira (visual disorders).

Thus, the Ayurvedic rationale of *Shiraso Dwaram* aligns with modern neuroanatomy.

4. Nasya in ENT Disorders

a. Rhinitis and Sinusitis (Pratishyaya, Dushta Pratishyaya)

Ayurvedic texts describe Nasya as first-line therapy for *Pratishyaya*, which correlates with allergic rhinitis and sinusitis. Anu Taila and Shadbindu Taila are commonly prescribed. Clinical studies demonstrate significant improvements in nasal blockage, sneezing, headache, and nasal discharge.

- Evidence: A randomized controlled trial of Anu Taila in allergic rhinitis reported symptomatic relief and reduced recurrence compared to antihistamines. Another trial with Shadbindu Taila in chronic sinusitis showed faster mucosal clearance compared to antibiotics.

b. Migraine (Ardhavabhedaka)

Ardhavabhedaka described in Ayurveda closely resembles migraine. Nasya with medicated oils reduces headache frequency, intensity, and associated symptoms like photophobia. Pharmacological actions may involve neurovascular modulation, anti-inflammatory effects, and serotonin regulation.

- Evidence: Trials on Shirovirechana oils demonstrated a reduction in migraine attacks without major side effects, making it a safe complementary therapy.

c. Cervical Spondylosis (Manyastambha)

Nasya is indicated for neck stiffness and pain in *Manyastambha*. Clinical studies show improvement in pain, cervical mobility, and quality of life when Nasya is used adjunctively with physiotherapy.

d. Ear Disorders (Karna Roga)

Though less documented in modern trials, classical texts mention Nasya for tinnitus, hearing loss, and earache. The proposed mechanism includes pacification of Vata and improved nerve conduction.

5. Nasya in Ophthalmic Disorders

a. Timira (Refractive Errors and Early Visual Defects)

Ayurveda describes Timira as a progressive visual impairment leading to *Kacha* and *Linganasha*. Nasya with medicated oils is recommended in early stages. Though modern ophthalmology has no direct parallel, refractive error prevention and early retinal health maintenance could be possible roles.

- Evidence: Few clinical studies exist, but some pilot trials report improvement in visual acuity and reduction of eye strain in patients receiving adjunctive Nasya.

b. Ocular Surface Disorders (Dry Eye, Keratoconjunctivitis Sicca)

Anu Taila and Ghrita-based Nasya are said to provide lubrication and nourishment. Modern research on intranasal oil therapy indicates improved tear film stability and reduced ocular discomfort.

c. Optic Neuropathy and Atrophy

Some case series report benefits of Nasya in optic nerve atrophy when combined with Rasayana therapy. Animal studies suggest neuroprotective actions of herbal oils, supporting these claims.

d. General Eye Health and Preventive Role

Daily *Pratimarsha Nasya* is advocated for maintaining healthy vision, preventing premature ageing, and promoting clarity of sense organs. Modern preventive ophthalmology has yet to validate this claim, but the holistic rationale aligns with lifestyle-based prevention.

6. Pharmacological and Experimental Studies

- Anti-inflammatory activity: Oils like Anu Taila and Shadbindu Taila show inhibition of inflammatory mediators in preclinical models.

- Antimicrobial activity: Ingredients like neem, turmeric, and Triphala exhibit broad-spectrum antimicrobial properties.
- Neuroprotective potential: Animal studies suggest improvement in oxidative stress parameters and nerve regeneration.
- Ocular benefits: Preliminary studies report enhanced ocular perfusion and lubrication with intranasal oil therapy.

7. Comparative Insights: ENT vs Ophthalmic Disorders

- ENT Disorders: Strong evidence base with multiple clinical trials in rhinitis, sinusitis, migraine, and cervical spondylosis. Faster relief and fewer recurrences compared to conventional drugs.
- Ophthalmic Disorders: Classical backing is strong but modern validation is limited. Pilot studies and animal experiments show promise but require larger randomized controlled trials.

8. Clinical Outcomes and Research Evidence

- Clinical trials on Anu Taila for allergic rhinitis: Significant reduction in sneezing, nasal obstruction, and headache.
- Shadbindu Taila in sinusitis: Faster mucosal clearance and reduced recurrence rates.
- Nasya in migraine: Reduced attack frequency, improved quality of life.
- Nasya in Timira: Limited but positive findings, suggesting supportive role in early vision loss.
- Daily Pratimarsha Nasya: Preventive benefits reported in maintaining nasal and ocular health, though modern trials are scarce.

DISCUSSION

The comparative review of Nasya therapy in ENT and ophthalmic disorders underscores its therapeutic versatility. Classical Ayurvedic texts provide a strong theoretical foundation for its use in a wide range of *Urdhwajatrugata Vikara*. The strength of evidence is greater in ENT conditions, particularly sinusitis, rhinitis, and migraine, where clinical studies support both safety and efficacy. These effects can be explained by the pharmacological actions of herbal oils, including anti-inflammatory, mucolytic, and immunomodulatory properties[16].

In ophthalmology, the applications of Nasya are well described in Ayurveda but less validated in modern studies. The concept of *Timira* and its association with refractive errors aligns with preventive and supportive interventions, yet robust clinical trials are lacking. Early experimental data suggest Nasya may improve ocular surface stability and optic nerve function, which parallels modern research on intranasal neuroprotective therapies[17].

From a pharmacological standpoint, the intranasal route is now widely studied for drug delivery to the brain and ocular tissues. Ayurveda's description of the nasal passage as the gateway to the head is strikingly consistent with modern neuroanatomical findings. This validates the ancient rationale for Nasya. However, challenges remain in standardizing formulations, defining dosage protocols, and ensuring reproducibility across different study settings[18].

The gaps in research include limited high-quality randomized controlled trials in ophthalmic disorders, inadequate exploration of mechanistic pathways, and variability in oil preparations. Integrating advanced tools such as imaging, tear film analysis, and neuroprotective biomarkers could provide stronger evidence[19].

Future prospects include developing standardized Nasya formulations with proven pharmacological activity, conducting multi-centric clinical trials, and exploring its potential as a complementary therapy in neuro-ophthalmology[20].

CONCLUSION

Nasya therapy, deeply rooted in Ayurveda, offers significant therapeutic benefits for ENT and ophthalmic disorders. Classical texts highlight its pivotal role in managing *Urdhwajatrugata Vikara*, with strong evidence for conditions like sinusitis, allergic rhinitis, migraine, and cervical spondylosis. Modern clinical research validates these benefits through demonstration of anti-inflammatory, mucolytic, and neuroprotective actions.

In ophthalmology, Nasya is described for conditions like *Timira* and *Linganasha*, though modern validation is still emerging. Preliminary evidence suggests potential benefits in refractive errors, optic neuropathies, and ocular surface disorders, but robust clinical trials are urgently needed.

The nasal route as a therapeutic gateway is scientifically validated in modern medicine as an effective pathway for direct drug delivery to the

central nervous system. This strongly parallels Ayurvedic wisdom, bridging ancient principles with contemporary pharmacology.

In conclusion, Nasya represents an integrative approach with wide-ranging applications in ENT and ophthalmic disorders. Strengthening its scientific evidence through standardization, pharmacological validation, and clinical research can help position Nasya as a safe, effective, and holistic therapeutic modality in global healthcare.

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