



# EXPLORING THE BENEFITS OF PRATIMARSHA NASYA FOR WORKPLACE HEALTH AND SAFETY: AN AYURVEDIC PERSPECTIVE

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## ABSTRACT

Work is essential for meeting economic needs and ensuring social inclusion, significantly impacting individuals' quality of life. According to the World Health Organization (WHO), "Health is a complete state of physical, mental, and social well-being and not merely the absence of disease or infirmity." The working environment, along with the stress and tension it entails, can profoundly affect a person's health, leading to occupational disorders and substantial losses for both employers and employees. In today's world, providing occupational health services is crucial as workers face issues often resulting from ergonomic concerns, sedentary lifestyles, metabolic and psychosocial problems, sleep disturbances, sinusitis, cervical spondylitis, and dry eye, among others. The Ayurvedic practice of Dinacharya, as described by Ayurvedacharyas, offers a potential solution to these problems when followed regularly. One such practice is Pratimarsha Nasya, which is part of the Dinacharya regimen and can help prevent these occupational health issues. The head (Shiras) is regarded as the ultimate organ (Uttamanga) due to its role in housing prana and key sensory organs like the nose and ears, thus necessitating its protection. For head and neck conditions (Urdhwa Jatrugata Vyadhi), Ayurvedic guidelines, especially Nasya and Pratimarsha Nasya, are particularly beneficial. Nasya dravya, absorbed through the nasal mucosa, reaches the brain and acts on crucial centers that regulate various neurological, endocrine, and circulatory functions, producing systemic effects.

This paper aims to integrate Ayurvedic concepts to better understand and manage occupational health and hazards.

**KEYWORDS:** work, *dinacharya*, occupational health, occupational hazards, *pratimarsha nasya*, Ayurveda

## INTRODUCTION

Work serves as a crucial means to fulfill economic needs and foster social inclusion, playing a pivotal role in shaping individuals' quality of life. However, the conditions under which work is carried out can also lead to physical and mental health challenges, impacting both workers and their loved ones. Ensuring safe and stress-free work environments is paramount to mitigate these risks. Poor working conditions in any form pose significant threats to worker's health and safety. Beyond physical hazards, psychosocial factors such as job dissatisfaction, insecurity, strained relationships, and emotional stress can profoundly affect overall well-

being. Addressing these concerns is essential through comprehensive occupational health services. Workers are especially susceptible to a variety of health issues resulting from poor ergonomics, sedentary habits, metabolic imbalances, psychological stress, sleep disturbances, and conditions such as sinusitis, cervical spondylosis, and dry eye syndrome. By prioritizing occupational health services, workplaces can proactively safeguard employee's physical and mental health, promoting productivity and fostering a supportive and sustainable work environment.

### Importance of occupational health

Occupational health primarily focuses on promoting and maintaining the highest degree of physical, mental, and social well-being of workers across all professions.<sup>(1)</sup> Workers may face various types of hazards depending on their specific industry. In the contemporary era, the younger generation's interest in technology and appealing career opportunities plays a significant role in shaping the economy. Both preventive medicine and occupational health share the goal of preventing diseases and preserving overall health.

The growing global recognition of Ayurveda may be attributed to its holistic approach to promoting a positive lifestyle. In Ayurveda, diagnosis is rather than identifying a specific disease by name, it involves a detailed process that describes the nature of the patient, their condition, and its pathogenesis. Ayurveda places significant emphasis on "*Swasthasya Swasthya Rakshanam*" (the maintenance of health in the healthy) and advocates for practices such as *Ritucharya* (seasonal regimen) and *Dinacharya* (daily regimen) to achieve this goal. While occupational hazards cannot be entirely cured due to the persistence of causative factors, individuals affected by these hazards can benefit from Ayurvedic therapies, dietary recommendations, and lifestyle modifications.

Exposure to physical, chemical, biological, and psychological risk factors in the workplace can significantly impact workers' health, well-being, and safety, affecting the complex functions of the nervous system both in the short and long term.<sup>(2)</sup> Given the crucial role of *prana* (life force) and the sensory organs, such as the nose and ears, located in the head (*shiras*), which is referred to as the "ultimate organ" (*Uttamanga*), their protection is of utmost importance.<sup>(3)</sup>

In the management of head and neck conditions (*Urdhwa Jatrugata Vyadhi*), Ayurvedic practices such as *Nasya* and *Pratimarsha Nasya* are deeply significant and form an integral part of the daily Ayurvedic routine (*Dinacharya*).<sup>(4)</sup> These therapies are specifically designed to cleanse, nourish, and maintain the health of the head, thereby ensuring its optimal function. According to classical Ayurvedic texts by Charaka and Vagbhata, the nose (*nasa*) is considered the gateway to the head (*shira*)<sup>(5)</sup> allowing medicinal substances administered through *Nasya* to reach the brain and effectively eliminate the morbid *doshas* responsible for various diseases.

Integrating Ayurveda into offices, industries, and other workplaces can effectively mitigate the impact of occupational hazards, promoting overall health and productivity. By prioritizing the holistic care of the head and neck through ancient practices like *Nasya*, workplaces can enhance employee wellbeing and create healthier environments conducive to sustained success and safety.

### *Pratimarsha nasya*

According to Ayurveda, *Nasya* is recommended as a daily practice to maintain the health of the nasal passages by lubricating and cleansing them, thereby supporting overall respiratory function and preventing imbalances in the head and neck region.<sup>(6)</sup> This procedure involves the instillation of a lipid-based substance, such as oil or ghee, into the nostrils. *Pratimarsha Nasya* is considered a highly convenient technique that is well-accepted and associated with minimal complications. As noted by Acharya Vagbhata, *Pratimarsha Nasya* is beneficial throughout the lifespan, from birth to death.<sup>(7)</sup> When performed correctly and consistently, *Nasya Karma* ensures that a person's eyes, nose, and ears remain unimpaired, promoting overall sensory health. It is recommended to administer two drops of the nasal preparation in the morning and evening. This practice offers both preventive and curative benefits, supporting the preservation and enhancement of overall health and well-being.

## DISCUSSION

Unique to *nasya* is '*uthamānga sodhana*,' a purification process that remains exclusive to this method, highlighting its distinct role in health maintenance. Leveraging the nasal cavity's expansive surface area and rich vascular supply, *nasya* optimizes drug absorption, bypassing the liver and gut metabolism to enhance therapeutic outcomes

### Mode of action of *Nasya* in Ayurveda

*Nasya* is the best method to eliminate and alleviate the vitiated *doṣas* of *urdhwanga* and also it is the unique procedure for *uthamanga suddhi*<sup>(5)</sup> The entryway to *Shiras*, according to Charaka, is the nose.<sup>(8)</sup> Medication administered by nasal aspiration solely targets the disease-causing morbid *doṣa*, reaching the brain. In the *Astanga Samgraha*, it is explained that since the nose is the entrance to the head, the drug administered through it reaches *sringataka*, a *sira marma* by *nasa srotas*, and spreads in the brain, reaching a junctional place at the intersection of the throat, *netra* (eye), *srotra* (ears), *siramukhas* (opening of the vessels), etc., and eliminates or detaches the morbid *doṣas* that are present above the supraclavicular region and expels them from the *uttamanga*.<sup>(9)</sup> Susruta explained that *sringataka marma* is a *sira marma* present at the confluence of the *Siras*, supplying nourishment to the nose, ears, eyes, and tongues.<sup>(10)</sup> Although Ayurveda does not mention cerebrospinal fluid (CSF) leaks directly, it discusses about improper administration and complications of *Nasya*. Blowing the nose too hard can elevate intracranial pressure, potentially contributing to CSF leaks. Intense *Sodhana Nasya* might carry a similar risk if performed with excessive force or on individuals predisposed to nasal defects.

**According to modern:** Probable mechanism of activity can be perceived in the following ways;

- (1) Diffusion component,
- (2) Neurological pathway,
- (3) Vascular pathway

**DIFFUSION COMPONENT:** Lipid-soluble substances are more readily absorbed passively through the cell membranes of the nasal mucosa due to their higher affinity for this pathway.

Nasal mucociliary clearance is a natural defence mechanism in the nasal cavity that facilitates the passage of inhaled materials and the mucus layer covering the nasal epithelium towards the nasopharynx. This process is regulated by ciliary beating, which occurs at a frequency of 12 to 15 Hz. Substances travel through three distinct routes to get from the nose to the brain. Endocytosis or pinocytosis allows substances to enter intracellular axonal transport, where they travel slowly over hours or days to reach the olfactory bulb. Bulk flow, a type of rapid perineural paracellular transport, moves substances quickly through the perineural space between olfactory ensheathing cells and olfactory nerve fibroblasts.

**NEUROLOGICAL PATHWAY:** The olfactory system is unique among the cranial nerves due to its direct connection with the brain. The nasal cavity is directly connected to the olfactory epithelium, which contains sensory neurons that communicate with the olfactory bulb. The peripheral olfactory nerves function as chemoreceptors, detecting chemical stimuli. These nerves communicate with higher brain centers, such as the limbic system, which includes key structures like the amygdaloid complex, hypothalamus, anterior thalamic nuclei, and parts of the basal ganglia. When substances are administered through the nose, they stimulate these higher centers of the brain, influencing the regulation of both the endocrine and nervous systems.<sup>(11)</sup>

**VASCULAR PATHWAY:** A secondary, indirect mode of administration is made possible via the vascular pathway, in which the medication first enters the systemic circulation before passing through the Blood Brain Barrier to reach the brain.<sup>(12)</sup> Pooling of blood from the nasal veins into the venous sinuses of the brain is more likely in a head-down position due to the effect of gravity. This increases the potential for drug absorption into the meninges and associated intracranial structures, making it an important factor to consider.

*Nasya* therapy is effective in treating various conditions of the eyes, nose, and ears, as well as stress and cervical spondylosis. By administering medicated oils or powders through the nasal route, it alleviates nasal congestion, sinusitis, and headaches while promoting circulation to enhance vision and relieve eye strain. Additionally, *Nasya* helps with ear-related issues like tinnitus and hearing loss, and its calming properties

reduce stress and neck stiffness. Additionally, it supports cognitive processes and promotes emotional stability.

### Health hazards – related with Eye

The three fundamental causative elements behind all health disorders are the improper use of sense organs, violation of the moral code of behavior, and the effects of time. These principles, although ancient, find renewed relevance in the context of modern health challenges. In the 21st century, one such health concern that has emerged as a widespread issue is Computer Vision Syndrome (CVS), characterized by a range of visual, ocular, and systemic symptoms resulting from prolonged and improper use of computers and digital screens, reflecting an imbalance in sensory engagement and a deviation from natural ergonomic practices.<sup>(13)</sup> This aligns with the Ayurvedic concept of *asatmendriyarthā samyoga*. When the tear film production, quality, and drainage is not maintained it leads to *sushkakshipaka* (Dry eye syndrome).<sup>(14)</sup> In Ayurveda, tears (*Ashru*) are derived from the *Rasa dhatu* and function similarly to how *Rasa* nourishes the body, providing essential nutrition and keeping the eyes moist. Understanding *Shushkakshipaka* goes beyond a surface-level ocular disorder; it signifies an imbalance of *dhatu*s (body tissues). As tears are a byproduct of *Rasa*, *Meda*, and *Majja dhatu*s, any depletion in *Rasa dhatu* leads to reduced moisture in the eyes. *Medo dhatu* plays a crucial role in lubricating the eyes, emphasizing the importance of *Snehana* (oleation) therapies in maintaining ocular health. This holistic approach underscores Ayurveda's view of eye care, focusing on nourishment and lubrication to support long-term visual wellness. *Medo kshaya* causes *rukshata*.<sup>(15)</sup> In *Majja kshaya* causes *Timira darshana*.<sup>(16)</sup> This can be managed with *vatahara Snehana nasya*. *Nasya* improve vision clarity and alleviate eye fatigue, probably by boosting circulation and reducing congestion in the head and neck area.

### Related with Nose

Air contaminants such as dust and chemical fumes pose significant occupational hazards, often leading to sinusitis and rhinitis. These illnesses primarily affect the respiratory system due to prolonged exposure to substances such as wood dust, chalk dust, nitrogen dioxide, and ozone.<sup>(17)</sup> Occupational rhinitis can progress to asthma in individuals continuously exposed to these irritants, triggering mast cell activation and the release of inflammatory compounds like leukotrienes and histamine.<sup>(18)</sup>

In settings like centralized air-conditioned environments, prevalent among software engineers and bank personnel, prolonged exposure can exacerbate nasal dryness and inflammation due to reduced humidity and airborne particles.<sup>(19)</sup> This scenario highlights the significance of following *Dinacharya* guidelines, with a particular emphasis on regular practice of *Pratimarsha Nasya*. The medicinal oils or substances used in *Nasya* soften and lubricate the nasal passages and sinuses, which is particularly beneficial for those prone to nose dryness or living in dry areas. These substances directly affect the olfactory nerves, potentially enhancing olfactory perception and aiding conditions like anosmia. This Ayurvedic practice not only lubricates the nasal mucosa, enhancing its barrier function against airborne irritants, but also improves the filtration of allergenic particles. *Pratimarsha Nasya* strengthens the *Urdhwa Jatru Pradesha* (upper respiratory tract) and acts as both *Shodhana* (cleansing) and *Snehana* (nourishing), offering comprehensive protection against occupational nasal and sinus disorders.

### Related with ear

*Asatmyendriyarthā Samyoga*, or the inappropriate use of sense organs, is considered by Ayurvedic acharyas as a key factor in the imbalance of *Tridosha*, leading to various ailments. This concept encompasses *Athiyoga* (overuse), *Ayoga* (underuse), and *Mithyayoga* (improper use) of the sense organs, particularly the auditory system (*srothrendriya*). According to Ayurveda, *Athiyoga* of *srothrendriya* is often related to occupational hazards such as acoustic trauma or prolonged exposure to various sound frequencies. Continuous exposure to loud noises can result in *Avarana* (blockage) in the channels of sound perception and *Dosha* imbalance, particularly affecting *Vata* and *Kapha*.<sup>(20)</sup> This disruption highlights the crucial role of balanced sensory input in maintaining overall health and preventing disease. Patients with tinnitus and other auditory disturbances may experience different noises, including ringing, buzzing, and hissing, and if they continue to engage in the same causative factors (*nidana*) or receive improper treatment, the condition can worsen, potentially leading to *Badhirya*.<sup>(21)</sup> This can manifest as diminished hearing or difficulty hearing low-pitched voices. In cases of

*Badhirya* and *Karmanada*, classical Ayurvedic texts recommend *Shodhana* (cleansing) and *Shamana* (palliative) therapies such as *Nasya* (nasal administration), *Sneha Virechana* (oil-based purgation), and *Karna Purana* (ear oiling) to manage and alleviate symptoms effectively.<sup>(22)</sup>

### On stress and tension

The limbic system, encompassing the amygdaloidal complex, hypothalamus, epitheliums, anterior thalamic nuclei, parts of the basal ganglia, and other higher brain centers, is intricately connected to the olfactory nerves. Medications administered through the nose can stimulate these brain regions, influencing the regulation of endocrine and nervous system functions. This interaction helps calm the mind and reduce tension. Studies highlights that *Pratimarsha Nasya* (trans-nasal medication), as part of *Dinacharya* (daily routine), is highly effective in managing Generalized Anxiety Disorder. This ancient practice not only addresses anxiety but also promotes overall mental well-being by harnessing the profound connection between the olfactory system and the brain's emotional and regulatory centers.<sup>(23)</sup>

### On cervical spondylosis

Irrespective of age, cervical spondylitis is a neurological condition affecting the cervical spine. When the ligaments, bones, cartilage, and bones in the neck start to degrade with aging or without it, it may give rise to cervical spondylitis. In classics, *Nasya* is mostly described in reference to the governance of *Urdhvajatrugata Vikaras*.<sup>(5)</sup> *Nasya* therapy is the principal treatment prescribed by Charakacharya for the management of *manyastambha*.<sup>(24)</sup> Furthermore, it is claimed that to eradicate the pathology, symptoms like heaviness (*gaurava*), numbness (*supti*), stiffness (*stambha*), and headache (*shirashula*) should be treated with the *Shirovirechana* form of *NasyaKarma* and the correct prescription of internal medicines. Moreover, pre- and post-procedure massage and fomentation at the supraclavicular and posterior area of the neck help to improve the local circulation, boost the absorption of the medicine and also relieve local stiffness.<sup>(25)</sup>

### Conclusion

*Nasya*, the Ayurvedic therapeutic practice of administering medicated substances through the nasal route, has profound effects on the eye, ear, nose, and higher centers of the body, particularly the brain. By clearing and balancing the pathways of the head, *Nasya* enhances the functions of the sensory organs, improving vision, hearing, and olfaction. Its direct influence on channels of sensory organs not only alleviates localized conditions such as sinusitis, headaches, and allergies but also positively impacts the central nervous system. This results in improved cognitive functions, mental clarity, emotional balance, and enhanced overall well-being. The therapeutic efficacy of *Nasya* lies in its ability to balance *Vata*, *Pitta* and *kapha* doshas, thereby harmonizing both the physical and mental aspects of health.

*Nasya* therapy stands as a cornerstone of Ayurvedic medicine, renowned for its therapeutic prowess and preventive capabilities. Through *Nasyaushadhi*, substances can directly influence vital brain centers governing neurological, endocrine, and circulatory functions, offering both localized relief and holistic systemic benefits. While this practice boasts a rich history spanning thousands of years, its validation in modern science as a form of intranasal drug delivery underscores its timeless efficacy. This ancient yet innovative approach continues to hold a pivotal position in advancing drug delivery technology, blending ancient wisdom with contemporary medical insights for comprehensive wellness solutions.

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