

# Pharmacodynamics of *Nasya Karma* & Its Indications in Pediatric Disorders

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**Abstract:** Panchkarma is an important part of *Ayurveda* which includes *vaman*, *virechana*, *basti*, *nasya* and *raktamokshana*. *Panchkarma* therapy has preventive and curative approach towards various disorders. *Nasya* is one of the therapy among *panchkarma* in which processed drug is administered through nasal route. The synonym for *nasya karma* are *shirovirek*, *shirovirechana* and *murdha virechana*. *Virechana* word denotes curative property that's why *shirovirechana* word is given for *nasya karma*. *Nasya* may be used in various conditions where drug is not absorbed orally and when there is requirement of long term therapy its use is convenient. The channel carrying senses in the human body are directly connected to *shira* (head) just like the sun rays are connected to the sun. Since nasal mucosa is primarily of lipophilic nature and also have some hydrophilic nature, by increasing lipophilicity of drug absorption of drug through nasal mucosa can be enhanced. That's why *sneha* processed with different drugs according to vitiated *doshas* *nasya* can be used in different disorders of supraclavicular region like nasal diseases, *shiro rogas* like *suryavarta*, *ardhavbedka*, *anantvata*, greying of hairs, dandruff etc., hoarseness of voice, dryness of mouth, premature wrinkles, *avabahuka*, difficulty in awakening and other disorders of mouth caused by *vata* and *pitta*. In this paper we will discuss about the pharmacodynamics of *nasya karma* and classical indications in pediatric disorders described in different *ayurvedic* text books.

**Keywords:** *Nasya karma*, *Shirovirechana*, *Panchkarma*

## 1. Introduction

*Nasya* is a therapeutic procedure which is used in various systemic diseases mainly for diseases of *urdhva bhaga* and *greeva*. In this procedure drug can be used in the form of *snehan*, decoction, juice, processed milk & medicated fumes. In *Ayurveda*, *shira* is considered as *uttamanga* and seat of *prana* i.e. life. The state of equilibrium of the body depends upon the *shira* is compared to root of a tree. The channel carrying senses in the human body are directly connected to the *shira* (head) just like the sunrays are connected to the sun. The medicine which is put into the nostril moves up to the *sringataka marma* and spreads to the interior of the head and the junctions where all the channels related to eye, ear, and nose situated together. The olfactory nerves of the nose are connected with the higher centers of brain i.e. limbic system which include amygdaloidal complex, hypothalamus and basal ganglia etc. Thus drugs administered to nostrils directly goes to higher centers the brain and affects nervous system and endocrine system by controlling *doshas*. *Nasya* not only work as a *shirovirechana* i.e. *shodhan* and *shamana* but also play a vital role in nourishing for the *panchgyanendriya adhisthan* situated in *shira*.

## 2. Definition of *Nasya*-

“औषधमौषधसिद्धो वा स्नेहो नासिकाभ्याम दीयति इति नस्यम् |” (सु.चि.४०/२१)

*Nasya* is a therapeutic procedure in which drug or *sneha* processed with drug is administered through nose.

## 3. Age at which *nasya* should be given-

Acharya Vagbhat- 7-80 years

Acharya Sharangdhara- 8-80 years

**4. Time of *Nasya* according to *ritu* (Acharya Charaka)** - Generally *nasya* is given in *pravrita*, *sharada* and *basant ritu* but in *atyayika awastha* (emergency condition) it can also be given in *hemant*, *grisma* and *varsha ritu* also. In *grisma ritu* it should be given in *poorvahn* (early in the morning), in *shita ritu* it should be given in *madhyahn* (mid noon) and in *varsha ritu* when there are no clouds in the sky.

## 5. Classification of Nasya-

<i>Acharya Charak</i>	<i>Navan</i>	<i>Snehana, sodhana</i>
	<i>Avapidana</i>	<i>Sodhana, stambhana</i>
	<i>Dhmapana</i>	-
	<i>Dhoom</i>	<i>Prayogika, vairechnika, snehika</i>
	<i>Pratimarsh</i>	<i>Snehana, virechana</i>
<i>Acharya Susruta</i>	<i>Sirovirechana</i>	<i>Nasya, sirovirechana, pratimarsh, avapida,</i>
	<i>Snehana</i>	<i>Pradhaman</i>
<i>Acharya Vagbhat</i>	<i>Virechana</i>	-
	<i>Brimhana</i>	-
	<i>Samana</i>	-
<i>Acharya Kashyap</i>	<i>Brimahan/poorana</i>	-
	<i>Sodhana/karsana</i>	-
<i>Acharya Sharangdhara</i>	<i>Rechana /karsana</i>	-
	<i>Snehana / brijhana</i>	-

**Acharya Vagbhat-** According to dose *snehana* is of two types –

- **Marsha-** 6 drops (*hina bala*), 8drops (*madhyam bala*),10 drops (*uttama bala*) in each nostril.
- **Pratimarsha-** 1 or 2 drops (*Astanga Hridaya and Sharangdhara* -2 drops in each nostril)

Usually children below 7 years and old persons below 80 years cannot receive *nasya* but they can receive *pratimarsh nasya* .

“आजन्म मरणं शस्तं प्रतिमर्शस्तु बस्तिवत् |” ( अ .â. सू .20 /32 )

**6. Pratimarsh nasya** – It is done by dipping the clean little finger into the oil and 2 drops in each nostril are given. It can be done at every day at any time.

“प्रतिमर्शो भवेत् स्नेहो निर्दोषः उभयार्थकृत |” (च .सि .9 / 92 )

According to *Acharya Charak* it has no complications and can be used as *snehana*( oleation) as well as *shodhan* ( curative ) .

“वमनं प्रतिमर्शोऽच जन्म प्रभृति शस्यते |” ( शा . प्र . 6/ 18 )

*Acharya Sharangdhara* said that *vaman* and *nasya* are beneficial for children since birth.

### Indications of Pratimarsh nasya-

- It can be used in traumatized person, thirst or mouth diseases, children, old person.
- Prevents from diseases of eye, ear, nose and other supraclavicular disorders.
- □Prevents early greying of hair, hair fall and wrinkling of skin.
- Strengthens the bones, joints, ligaments and tendons of head.
- □Strengthens the jaws, teeth, chest, arms etc.
- □Improves the working power of sense organs
- It is used therapeutically in *Peeansa* (coryza), *Ardhavabhedaka* (hemicrania), *Manyastambha* (torticollis), *Shirahshool* (headache), *Ardita* (facial paralysis) etc.

## 7. Pharmacodynamics of Nasya karma <sup>[1]</sup>-

**Mucosal absorption of drug-** Nasal cavity is divided into two parts by the nasal septum and it consists of three main regions which are nasal vestibule, olfactory region and respiratory regions .The nasal cavity is covered with a mucous membrane which is divided into two parts- olfactory epithelium and non-olfactory epithelium. Non-olfactory area includes the nasal vestibule which is covered with skin like stratified squamous epithelial cells and respiratory regions have a typical airways epithelium covered with numerous microvilli and forming large surface areas for drug absorption and transportation.

**Mechanism of nasal absorption-** The first step in absorption of drug is mucosal absorption. The main protein of mucous is mucin which has tendency to bind the different solutes .However there may be structural changes in the mucosal layer due to environmental changes .For this reason various mechanism of nasal absorption were established in which two mechanism have been mainly used , these are-

1. **Paracellular mechanism-** It includes an aqueous route of transport but it is slow and passive. There is an inverse correlation between intranasal absorption and molecular weight of water soluble drug. The molecular weight of greater than 1000 daltons of drug show poor availability.
2. **Transcellular process-** It includes transport of drug through lipoidal route and it is a route for lipophilic drugs and it shows a rate of dependency on their lipophilicity.

Due to this reason *sneha nasya* has described as best between all types of *nasya* as olfactory mucosa shows the affinity towards lipophilic nature of *sneha nasya* and due to the lipophilic nature of *sneha* it get readily absorbed. The administered drug then shows its action by different ways like by passing into systemic circulation through vascular pathways or by stimulating the nerve endings in the mucosa. Thus after getting absorbed through mucosal layer it may take any pathways either vascular path or neural path to show its action.

## 8. Factors affecting nasal drug absorption [2]

**Position** – Head low position with slight elevation of the legs is the right position for *nasya karma*, it help in reaching the medicine deep inside olfactory mucosa and facilitates proper absorption of drug.

**Lipophilicity-** Nasal mucosa is primarily of lipophilic nature and also has some hydrophilic nature. By increasing lipophilicity of drug absorption of drug through nasal mucosa can be enhanced.

**Viscosity** – Drugs having higher viscosity increases the absorption of drug by increasing contact time to mucosal layer. Hence, the absorption of *navan nasya* is enhanced by its viscous nature.

According to *acharya susruta*, *nasya* is that drug or *sneha* processed with drug which is administered through nostrils. This is of two types – *shirovirechana* (head evacuative) and *snehana*. This is again divided into 5 types - *nasya*, *shirovirechana*, *pratimarsh*, *avapida* and *pradhmana*. In these *nasya* and *shirovirechana* are main. *Pratimarsh* is a subtypes of *nasya*, similarly *avapida* and *pradhmana* are subtypes of *shirovirechana*.

The word *nasya* particularly denotes *sneha* which is administered to those with vacant head for promoting strength also in neck, shoulder, chest or improving vision. That should be given with *sneha* processed with drug pacifying *vata* and *pitta* when head is overcome by *vata* and in falling of teeth, hairs and beards and moustaches, dandruff, earache, tinnitus, defect of vision, hoarseness of voice, nasal diseases, dryness of mouth, *avabahuka*, premature wrinkles and greying of hairs, difficult awakening and other disorders of mouth caused by *vata* and *pitta*.

*Sneha*- Fatty medium - *ghee*, *oil*, fat and marrow these processed with drug pacifying *vata*, *pitta* and *kapha* for respective disorders. Oil used as *nasya* pacifies *vata* and *kapha* while milk and *ghee* pacify *pitta* and *rakta*.

## 9. Classical indications in pediatric disorders -

### Acharya Kashyap-

“नस्य कर्माणि बालानाम स्तनपानाम विशेषतः |  
कतुतैल प्रयुज्जीत घृतं वा सैन्धावादितम् ||” ( का.सि .४ )

*Acharya Kashyap* said that *nasya* of *katu taila* or *saindhav misrit ghris* should be used in *ksheerap*.

### Acharya Susruta –

**Snehika nasya-** *Dant*, *kesa* and *smasru paat*, *karnashoola*, *karnachveda*, *timira*, *swarbheda*, *nasa roga*, *mukh sosh*, *avabahuka*, *akal vali-palita*, *khalita* and other *vata-pitta janya rogas*.

1. **Shirovirechana** – *Sira-shoola*, *siro-gaurava*, *pinasa*, *ardhavbehdaka*, *krimi*, *pratisyay*, *apasmar*, *gandh gyan naas* and other *urdhvajatrugata kaphaj rogas*.

### Acharya vagbhat-

1. **Virechana** – *Urdhvajatrugata gaurav*, *sopa*, *updeha*, *kandu*, *stambh*, *abhishyanda*, *srava*, *praseka*, *vairasya*, *aruchi*, *swarabheda*, *krimi*, *pratisyay*, *apasmar*, *gandh agyan*, *granthi*, *arbuda*, *kotha* and other *kaphaj rogas*.
2. **Brihmana nasya-** *Suryavarta*, *ardhavabhedaka*, *timira*, *manya roga*, *apatanaka*, *avabahuka*, *nidranas* and other *kaphaj rogas*.
3. **Samana nasya-** *Akala vali-palita*, *khalita*, *vyanga*, *neelika* and other *rakta-piitaj rogas*.

**10. Indications and contraindications of nasya in pediatric disorders** <sup>[3]</sup>.

Indications	Contraindications
<i>Pakshaghata</i>	<i>Nava pinasa</i> (acute rhinitis)
<i>Ardita</i> (facial palsy)	<i>Kasa</i> (cough)
<i>Vata rogas</i> (delayed mile stones)	Immediately after taking meal, water)
<i>Vyanga</i> (hyperpigmentation)	After blood letting
<i>Shirashoola</i> (headache)	<i>Shwas</i> (bronchial asthma)
<i>Urdhwajatrugata rogas</i> ( E.N.T.disorders)	<i>Ajeerna</i> (indigestion)

**11. Research advancement in Nasya related to pediatric disorders–**

- Beneficial Effect Of Nasya In Nasa Arsh ( Nasal Polyp)**( Aziz Ahmad Arbar Et Al ,Clinical Profile Of Nasal Polyp In Pediatric Patient: An Ayurvedic Approach, Indian Journal Of Health Sciences, Sep-Dec 2016,Vol 9,Issue 3)
- Effect Of Nasya In Cerebral Palsy**( Singh K, Verma B, Ayurvedic Perspective Towards Cerebral Palsy, J.Res Edu Indian Medicine2012;18(3-4): 163- 174)
- Ayurvedic Management Of ADHD With Panchendriya Viverdhan Taila Nasya** ( Dr.Rahul Gameti et al, Ayurvedic Management Of ADHD With Panchendriya Viverdhan Taila Nasya – A Case Study,World Journal Of Pharmaceutical Research, Vol 6,Issue 8,2020-2029)
- Management Of Swine Flu Through Nasya**( Naresh K.Kumawat et al, Therapeutic And Preventive Approach On Swine Flu In Ayurveda: A Critical Review,An International Journal Of Research In Ayush And Allied System)

**12. Conclusion-**

The different forms of *nasya* e.g. *churna*, *sneha*, *kvātha* *e.t.c.* acts through various mechanisms i.e. by vascular and neural pathway in the body. The mechanism of action of *nasya karma* mentioned by *different acharyas in ayurvedic classics* thousands of years ago can also be demonstrated in the present scenario with the help of modern scientific parameters. *Acharya Charak* quoted that “*Dwaram hi shirso nasa*” and shira is considered as *uttamanga* hence any drug instilled into the nostril will have direct effect on the brain, due to this reason any disease related to supraclavicular region like cerebral palsy, facial palsy, hemiplegia, epilepsy, ADHD, nasal polyp, rhinitis in children etc. can be treated with *nasya* effectively. Nasal drug absorption depends not only on the physicochemical properties of the drug but also depends on physiological condition of the nose. *Acharyas* have considered the various factors which affect the nasal drug absorption like dose, duration and time of administration and described the *nasya vidhi* for maximum absorption of nasal drug. Standardization of the *nasya karma* with *āyurveda* and modern scientific parameters and it's validation of facts with proper documentation is the need of the hour.

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