

# **SWARODAYA VIGJANAN**

## **A Scientific Analysis of the Nasal Cycle and its Applications**

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### **INTRODUCTION**

*Yoga* is the evolutionary process of integration (*yuj* = union). In the *Bhagavad Gita*, Lord Krishna says "*Samatvam yoga uchyate*" (*Yoga* is equanimity). The *Yogic* concept of ***Loma Viloma*** (balancing the *dwandwas* / opposites) encompasses the wide variety of processes in our body, emotions and mind and thus brings about this equanimity of the mind. *Yoga* and *Tantra* emphasize the balance between the two halves of the body in terms of *Loma* and *Viloma*. The right side of the body is considered to be of masculine nature, endowed with warm, golden, positive, *pranic* energy and represented by the *pingala nadi* (energy channel on the right of the *sushumna*). The left side of the body is considered feminine and endowed with cool, silvery, negative, *apanic* energy and represented by the *ida nadi* (energy channel on the left of the *sushumna*). The *sushumna nadi* is the energy channel that runs down the middle of the central canal of the spinal cord. (Note: All these energy channels are in the *pranamaya kosha* though they have correlating structures in the physical body). The *Yogin* attempts to understand, harness and bring about a balance between the energies of the two halves of the body. The best practical example of this concept is found in the study of the **nasal cycle**.

The nasal cycle is an ultradian rhythm of nasal congestion and decongestion with a quasi-periodicity of 60 to 240 minutes. Keyser made the first formal description and the use of the term nasal cycle in 1895. However the concept of the nasal cycle and an understanding of its role in our life had existed for long before that in Indian thought. The *Vedic* science of understanding the function of the nasal cycle was known as ***Swarodaya Vigjanan*** (*swara* = sonorous sound produced by the airflow through the nostrils in the nasal cycle, *udaya* = functioning state, and *vigjanan* = knowledge). The ***Shivaswarodaya***, an ancient treatise in *Sanskrit* literature advises the *Yogi* to undertake quieter, passive activities (*soumya karya*) when the left nostril flow is dominant (*ida / chandra swara*), to engage in challenging and exertional activities (*roudra karya*) when right nostril is dominant (*pingala / surya swara*) and to relax or meditate when the bilateral nasal flow is operational (*sushumna swara*) as it was considered to be unsuitable for performance of worldly activities. *Ida swara* (left nostril dominance) was described as feminine, *Shakti* and moon-like (*chandra*) while the *pingala swara* (right nostril dominance) was described as masculine, *Shiva* and sun-like (*surya*). Similarly the traditional Indian description of *Ardhanarishwara* consists of *Shakti* (the female element) being depicted on the left and *Shiva* (the male element) on the right side of the body. Such a notion of left-right, female-male duality was common in oriental traditional medicine as also in western alchemy. The nasal cycle has been demonstrated not only in man but also in rat, rabbit and domestic pig.

### **TRADITIONAL VIEWS ON SWARA YOGA**

#### **A. Rhythmicity of the swara**

Textbooks of *swara yoga* (Charandas, 1954; Kannan, 1967; Gautam, 1975) describe a definite pattern of breathing in a healthy person on each day of the month at sunrise. It is said that on days 1,2,3,7,8,9,13,14,15 of the bright fortnight (the two weeks after full moon), the breath is to flow predominantly in the left nostril at sunrise and on days 4,5,6,10,11,12 it is to flow in the right nostril at sunrise. Similarly, on days 1,2,3,7,8,9,13,14,15 of the dark fortnight (the two weeks after the new moon), the breath is to flow predominantly in the right nostril at sunrise and on days 4,5,6,10,11,12 it is to flow in the left nostril at sunrise. In modern man it is difficult to have these natural patterns due to the haphazard life styles but in preliminary studies conducted on students attending six months *Yoga* Training at ICYER, Yogamaharishi Dr. Swami Gitananda Giri had reported a definite relationship between the lunar phase and the *swara* pattern.

#### **B. Activities prescribed in various swaras**

##### **1. Activities prescribed in lunar Swara**

Initiation of new projects, intake of hot liquids, studies and learning, traveling, dancing, singing, weddings and other auspicious ceremonies are prescribed to be performed when in the lunar (left nostril dominant) *swara*.

### 2. Activities prescribed in solar *swara*

Strenuous activities such as sporting activities, creative writing, commencing of battle, intake of food, sleep and extension of business are prescribed activities to be performed when in the solar (right nostril dominant) *swara*.

### 3. Activities prescribed in *sushumna swara*

During the time that both nostrils are functioning equally, it is prohibited to perform any worldly activities and the activities advised are *Yogabhyasa*, mediation, *puja* and other such spiritual and relaxing activities.

## C. Interesting observations on *swara yoga*


Some interesting observations that are made in relation to *swara yoga* are;

1. Major meals should be partaken in the solar *swara*.
2. Bathing should be performed in the solar *swara* and there is danger of catching cold if done in the lunar *swara*.
3. Articles of hot potency should be taken in the lunar *swara* as also liquids.
4. Articles of cold potency should be taken in solar *swara*.
5. One should go to sleep in the solar *swara*.
6. If male partner has solar *swara* and female partner has lunar *swara* during coitus, then the child conceived will be male. The converse would beget a female child (This interesting observation would be worth being studied scientifically).
7. If a person has headache, cold, hypertension, acidity or asthmatic attack, the change of his *swara* pattern artificially to the opposite *swara* may benefit and give relief within an hour. (Again this is worth being studied scientifically, as it would be of use in immediate symptomatic benefit for patients found true.)
8. Indulgence in coitus during flow of same *swara* of both partners will not result in pregnancy. (Worth scientific investigation as it would be a very effective family planning method is found to be true.)

## MECHANISM OF NASAL CYCLE

Various mechanisms were postulated for the occurrence of the nasal cycle and a great amount of research work has been done in this field. The teleological explanation indicates that as one nostril was active in its air-conditioning function, the other nostril rested. It has been seen that the use of *Yoga Danda* (T-shaped wooden implement used by the *Yogis* to regulate differential breathing patterns), pressure of a crutch in the axilla, pressure on the thorax while sitting and also the act of lying down on the side all affect the pattern of nasal dominance. All these maneuvers cause decreased airflow in the ipsilateral (same side) nostril and increased airflow in the contra lateral (opposite side) nostril. The pattern takes a minute to start to change, equalizes in both nostrils by about the 4<sup>th</sup> minute and reaches the peak in 17 minutes with application of a crutch and 11 minutes by lateral recumbence. Congestion of the mucosa of one nostril leads to the contra lateral nostril becoming dominant and vice versa. **The nasal cycle is dependent upon the tonic activity of the limbic autonomic nervous system, the levels of circulating catecholamines and other neuro-hormones.**

Vinod Deshmukh showed that nasal congestion correlates with **low sympathetic-high parasympathetic** activity whereas decongestion is directly related to **high sympathetic-low parasympathetic** activity mode. Virendra Singh showed that compression of the hemi thorax from any surface lateral, anterior, posterior or superior could lead to congestion of the ipsilateral nostril with simultaneous decongestion of the opposite nostril. Keuning has demonstrated that anaesthetizing the nose or the larynx does not influence the nasal cycle but that the nasal cycle is absent after cervical sympathetic denervation and laryngectomy. Mitti Mohan and Eccles showed that airflow in the patent and congested nostrils caused reflex congestion of the patent nostril. Eccles also proposed that the **hypothalamus** was the centre for the sympathetic effects on the nasal mucosa and the nasal cycle.

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## EFFECTS OF NASAL CYCLE AND FORCED UNINOSTRIL BREATHING

Wernitz and others reported selective hemispheric stimulation by unilateral forced breathing. They showed that forced breathing through one nostril produces a relative increase in the EEG amplitude in the contra lateral hemisphere. Block et al demonstrated that unilateral breathing affects males ipsilaterally on both spatial and verbal tasks. Their spatial performance is better during right nostril breathing and verbal performance is better during left nostril breathing. In females it affects performance contra laterally but only in spatial tasks and their spatial performance is better during left nostril breathing. However in a study on 108 school children, K.V Naveen and others found that *Yogic* breathing through a particular nostril increases spatial rather than verbal scores without lateralised effects.

Mitti Mohan tested the nostril dominance with reference to the bilateral volar GSR (galvanic skin resistance) that is an indicator of sympathetic activity. He found that sympathetic activity was lower in *ida swara*, (left nostril breathing) followed by *pingala swara* (right nostril breathing) and was the maximum in the *sushumna swara* (bilateral nostril breathing).

Backon has shown that right nostril breathing significantly increases blood glucose levels, whereas left nostril breathing lowers it.

Shirley Telles et al have shown that right nostril breathing can significantly increase the metabolism measured by the increased baseline oxygen consumption with one month of practice several times a day. They have also shown that breathing through the left nostril exclusively, repeated 4 times a day produced a significant increase in the baseline GSR suggestive of reduced sympathetic activity to the palmer sweat glands.

L.Rai et al found that induced left nostril breathing produced decreased systolic, diastolic and mean blood pressures. They suggested that the left nostril breathing could be used as a prophylactic means to combat rises in blood pressure associated with everyday stress and strain of life. They also found that induced right nostril breathing caused correction of blood pressure to normal levels, increase heart rate, increase skin conductance and increased body temperature.

## CONCLUSION

The science of *swara* that is of recent interest to scientists all over the world, had been analysed extensively by Indian *Yogis* of lore. Though they lacked the physical equipment available to modern science, these *Yogis* through their dedicated practice (*abhyasa*), inner vision (*antar drishti*) and self-analysis (*swadyaya*) had made an extensive number of observations on this concept. Recent scientific studies have helped us to have a better, methodical understanding of these concepts. They have thrown light on the potential health benefits of forced uninostril breathing in various medical conditions. Further research is required to prove the efficacy of these techniques in clinical conditions such as hypertension, low blood pressure, autonomic dysfunction and diabetes. The interesting observation that changing the nasal dominance pattern to the opposite side may relieve conditions such as acute asthma, acidity and headache, requires further studies before such techniques can be advocated for clinical trials and patient care. The theory that conception doesn't occur when both partners are in same *swara* if found true, will be a welcome addition to the contraceptive armory especially in situations where other methods such as oral contraception are contraindicated. In conclusion, it can be said that the *swara yoga* concept is a highly interesting field for further research and it may have wonderful scope in the field of patient care and in improving our understanding of how to live in harmony with nature.

## REFERENCES

1. Backon J. Changes in blood glucose levels induced by differential forced nostril breathing, a technique which affects brain hemisphericity and autonomic activity. *Med Sci Res* 1988; 16: 1197-99.
2. Bhole M.V et al. Significance of nostrils in breathing. *Yoga Mimamsa* 1968; 10(4): 1-12.
3. Block RA, Arnott DP, Quigley B, Lynch WC. Unilateral nostril breathing influences lateralised cognitive performance. *Brain Cognit* 1989; 9:181-90.
4. Davies AM, Eccles R. Reciprocal changes in nasal resistance to air flow caused by pressure applied to the axilla. *Acta Otolaryngol (Stockh)* 1985; 99:154-9.
5. Deshmukh VD. Limbic autonomic arousal: its physiological classification and review of the literature. *Clinical Electroencephalography* 1991; 22(1): 46-60.
6. Gitananda Swami. Some preliminary observations on the nasal cycle and its relation to the lunar phase. *Yoga Life* 2001; Oct (10): 12-13.
7. Keuning J. On the nasal cycle. *Rhinol Int* 1968; 6:99-136.
8. Naveen K.V et al. Yoga breathing through a particular nostril increases spatial memory scores without lateralised effects. *Psychol Rep* 1997; 81(2): 555-61.
9. Mitti Mohan S. Reversal of nostril dominance by posture. *J Indian Med Association* 1991; 89:88-91.
10. Mitti Mohan S. Reflex reversal of nostril dominance by application of pressure to the axilla by a crutch. *Indian J of Physiol Pharmacol* 1993; 37(1): 147-50.
11. Mitti Mohan S. Svava (Nostril dominance) and bilateral volar GSR. *Indian J of Physiol Pharmacol* 1996; 40(1): 58-64.
12. Mitti Mohan S and R Eccles. Effect of inspiratory and expiratory air flow on congestion and decongestion in the nasal cycle. *Indian J of Physiol Pharmacol* 1989; 33: 191-3.
13. Rai L et al. Effect of induced left nostril breathing on body functions in adult human males. *Indian J Physiol Pharmacol* 1983(Supplement 1); 5: 74-5.
14. Rakesh Giri, Ganesh Shankar. Svava Yoga - an introduction and its applications. *Nisargopachar Varta* 2001; January: 18-20.
15. Rao S, Potdar A. Nasal airflow with body in various positions. *J Appl Physiol* 1970; 28:162-5.
16. Shirley Telles, R Nagaratna & HR Nagendra. Breathing through a particular nostril can alter metabolism and autonomic activities. *Indian J Physiol Pharmacol* 1994; 38: 133-7.
17. Vaidya JS, Dhume RA. Influence of lateral posture on sweating: does posture alter the sympathetic outflow to the sweat glands? *Indian J Physiol Pharmacol* 1994; 38: 319-322.
18. Virendra Singh. Thoracic pressure and nasal patency. *J Appl Physiol* 1987; 62: 91-94.
19. Wertz DA, Bickford RG, Shannahkoff-Khalsa D. Selective hemispheric stimulation by uninostriil forced nostril breathing. *Human Neurobiology* 1987; 6:165-71.

## MECHANISM OF THE NASAL CYCLE (Figure)

