

Effect of "Jala Neti" on Optic Nerve Conduction Velocity

Dr. Kamakhya Kumar*

Dr. Charu Sharma**

Abhishek Kumar#

Abstract

The present study aimed to find out the effect of Neti (a Hatha Yogic technique of nasal passage clinging) of the practitioner's optic nerve conduction. A study has been conducted in the Yoga Arogya Polyclinic of Dev Sanskriti Vishwavidyalaya, Shantikunj (Haridwar). Forty students of 20-30 age groups were selected through accidental sampling technique from Dev Sanskriti Vishwavidyalaya, Shantikunj (Haridwar). Subjects were divided into two groups namely- control and experimental. The practice of Neti has been given to them for 40 days. The result shows a significant change. On the basis of this research it can be accepted that practice of Neti can help to improve their optic nerve conduction.

Introduction

"Nothing is more precious than our vision". Yet many people find their vision worsening due to modern lifestyle and cultural beliefs about the "inevitable" decline of health, including vision.

The human body is an organic unit with its tissues and organs interrelated and mutually dependent. Therefore, the health of the eyes, being the optical organ of the body can influenced any and every other organ in the body. When medications are taken for conditions of the body, they often have side effects on the vision.

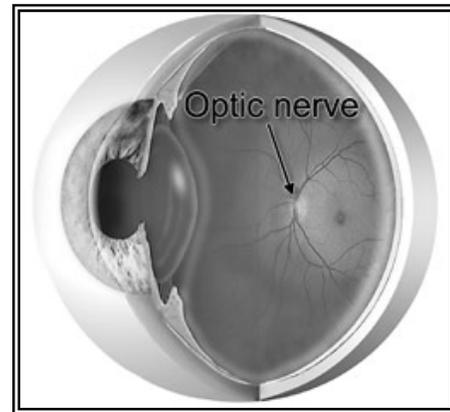


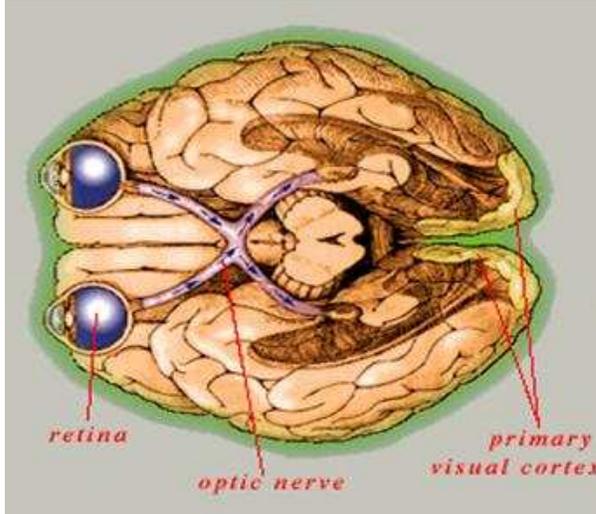
Fig. – 1 (Optic Nerve)

Let us understand the Optic Nerve & Its Physiology. Fibers arise from retina and to from optic nerve, which passes through optic foramen of orbit; the optic nerves converge to form optic chiasma where fibers partially cross over, continue as optic tracts, enter thalamus, and synapse there; thalamic fiber run (as the optic radiation) to occipital (Visual) cortex, where visual interpretations occur. The optic nerve transmits electrical impulses from the retina to the brain

*Chief Coordinator, Yoga Arogya Polyclinic, Dev Sanskriti Vishwavidyalaya, Haridwar

**Lecturer, Dept. Of Human Cons. & Yogic Science Dev Sanskriti Vishwavidyalaya, Haridwar

#M.Sc. Yogic Science, Dev Sanskriti Vishwavidyalaya, Haridwar



Health of the eye depends on the well-being of one's entire body. Vision problems are multiplying at epidemic proportions in our society. Over half of the population over 75 years old has cataracts, glaucoma, or macular degeneration.

Vision occurs mainly in the brain. Our eyes receive information in the form of light, and the brain processes the information to make meaning of it, creating our "visual world". The process of improving vision helps to bring one more into balance and harmony.

Fig. 2 Optic Nerve relating the Brain

Yoga therapy also plays an important role in the treatment of myopia and other refractive errors, besides general improvement of eyesight and general health. In this respect, yogic exercises of extra ocular muscles help to strengthen and relieve the strain or tension upon these muscles to overcome defective vision.

Sw. Satyananda Saraswati (2000) has stated in his book that the practice of Neti, a Hatha Yogic technique of nasal passage cleansing promotes a balance between the left and right nostrils and consequently the right and left hemispheres of the brain. This includes a state of harmony and balance throughout the entire central nervous system.

The ancient Yogic text Gheranda Samhita gives a detailed technique and effect of Neti Kriya:

*vitastimānam sukshmasūtram nāsānāle praveśayet /
mukhāniggamayetpaśchāt procyate netikarmakam //*

One should insert into a nostril a fine thread nine inches in length and pull it out through the mouth. This process is called Neti.

*sādhanannetikāryasya khecharîsiddhimāpnuyāt /
kaphadosā vinaśyanti divyadrstih prajāyate //*

Practice of *Neti* facilitates the process of *khecharî*, removes disorders of phlegm and gives a **sharp vision**.

Various studies have been done in different parts of world for observing the effect of Neti as well as an improvement in the vision through different yogic practices.

Murari Chaitanya Dasa on Jan 27th, 1999 recommended that to deal with nicotine, tar and other toxic compounds in the channels, Neti plays an important role.

At the International Yoga Teachers Conference in Australia, 1997, Dr. Thomas Schmidt, a Doctor of Internal Medicine, presented results from a study he had done on the benefits of Neti in reducing the effects of the common cold. Dr. Schmidt conducted research over 5 years on the effects of Jal neti, or nasal irrigation. He had 115 soldiers in the study.

Shirley Telles, et al (1995) find Improvement in Visual Perception following Yogā Training in his study.

Manjunāth, N.K. and Shirley Telles, (1999) state on the basis of their study that an improvement can be observed in Visual Perception Sensitivity in Children following Yogā Training

The above show that researchers are keen to know the effect of Neti in various directions; thus it is the right time to go deep into the search of the impact of Neti having the following aims and objectives:

Objective

To assess the effect of Neti on optic nerve conduction velocity level of the subjects.

Hypothesis: There is no significant relationship between practice of Neti and the optic nerve conduction velocity level of practice group subject.

Material and methods

Sampling Plan: In this research, the Accidental Sampling was used. Number of Samples was 40, which was divided into two groups. Each Group contained 20 Subjects. One Group was taken as controlled & another experimental. Subjects (Male) were selected from the Certificate Courses in Yogā, Holistic Health Management & Theology of Dev Sanskriti Vishwavidyālaya, Gāyatrikunj. The Duration of the study was 40 Days. The age group of the Subjects was 18 to 55 Years. The Controlled Experimental Group design was used in this proposed empirical Study.

Tools & Testing: EMG/NCS/EP Machine was used. Visual Stimulations were given through, Checkers on the Computer Monitor; For Visual Evoked Potential (VEP) Test Latencies were measured in Milliseconds.

Technique of Jala Neti

For this technique, lukewarm isotonic salt water is poured into one nostril, so that it leaves through the other. The procedure is then repeated on the other side, and the nose is dried by bending forward and by rapid breathing.

It is also possible to sniff the water in so that it runs into the mouth, and to spit it out.



Fig. – 3 (Jala Neti)

Recording of VEP

Visual evoked potentials (VEPs) were recorded by using EMG/NCS/EP Machine (NEURO PERFECT PLUS) of MEDICAID, India.



Fig. – 4 Using EMG/NCS/EP Machine

Electrodes were attached at the vertex (Cz) and Oz. The ground electrode was placed at FPz. The input impedance was kept below 5 K Ohms. Each subject was seated

comfortably on a chair in a quiet low lighted room 140 cm away from the screen. He was instructed to fix his one eye on a small red dot at the centre of the screen while the other eye was fully covered with eye patch if tested for one eye. The screen (field) size was 11 inch vertically and 14 inch horizontally at the subject's eye and the check was 6.31" right to the left. A black and white chequered board was generated by an electronic pattern generator of the Compact-4 evoked potential recorder.

Values are in the units of latencies. The latency was recorded in milliseconds. The time of the arrival of impulses at P100 level was recorded in milliseconds.

Result and discussion

Table: For showing the optic nerve conduction velocity level

	Pre	M	post	sd	N	t value	significance level
Experimental	96.90	102		4.40	20	3.52	0.01
Control	97.85	97.78		3.59	20		

Mean and standard deviation of the experimental and control group for optic nerve conduction velocity level in the subjects are given in table 1. It is observed that there is a positive change in the level of optic nerve conduction velocity between both the groups. The significant level for observing the t value is 0.01 and it shows the significant change in optic nerve conduction velocity level as "t" value is 3.52. Thus Hypothesis has been rejected.

Conclusion

In this study Neti Kriyā was taken as an Independent Variable & the latency level of Optic Nerve Conduction Velocity has been taken as dependent variable. We found no specific difference between the means of the pre test data taken of both Control & Experimental Group as the means were approximately equal. After the experimentation period the post test data taken for both Control & Experimental were found significantly different as the Statistical Analysis Shown.

We can now easily accept that the Teachings of Ancient Yogic texts that Neti Kriyā as a purification or cleansing technique of Shatkarmā Came from Saptasādhana cleans the fused matter of ENT system as well as the Eye & its Post retinal Optic Nerves. This experiment also shows the effect of the independent Variable "The Neti Kriyā" as it Changes the values of Conduction Velocity of the Impulses of Optic Nerves.

As it changes after the experiment, it is found that the values of Conduction Velocity (101 milliseconds, mean value) of the Impulses of Optic Nerves of the Experimental Group moves towards the normalcy as its exact position is 102.6 milliseconds of P100 level & its normal range is 95 to 115 milliseconds.

The Neti Kriyā as described in the Ancient Yogic Texts that it gives relaxation to the cranial Nerves related to ENT system. During the Neti Kriyā when the water passes through the nasal passage, it reduces the waste or congested matters from the sinus pockets & also stimulates the nerves passing through the cribriform plate of the ethmoid bone to the olfactory bulb of cranial nerve. Due to this the associated optic nerves get charged through the stimulation of autonomic nervous system and related organs like eyes & its post retinal nerves also get affected. This is how the optic nerve conduction velocity changes towards normalcy due to the practice of Neti Kriyā.

As stated above in the literature study that the nerves related to the eyes get stimulated near polyps in the Sinus situated just behind the eyebrow centre, which are going to the brain. Neti stimulates the Nerve Endings which are related to the Eyes and Vision. The stimulation generated by the Neti Kriyā also promotes the normal excretion of the obstructing toxic matters from the ENT system as well as from the optic nerves near the polyps probably this is why Neti Kriyā changes the conduction velocity of the optic nerves.

References

- Shirley Telles, R. Nāgārathnā and H.R.Nāgendrā,(1995) *Journal of Indian Psychology, Vol. 13, No. 1*
- Manjunāth, N.K. and Shirley Telles(1999), *Journal of Indian Psychology, Vol. 17, No. 2*
- Sw. Satyananda Saraswati (2000); *Tantra Kriya And Yoga; Yoga Publication Trust, Munger*
- Sw. Muktibodhananda Saraswati (1999); *Hatha Yoga Pradipika Yoga Publication Trust, Munger*
- Murari Chaitanya _Dasa (jan 1999) "Ayurvedic Approach To Breaking The Nicotine Habit" on VNN Vaisnav News