

REVIEW ARTICLE

Role of *Trataka* and *Jala Neti* in Digital Eye Syndrome

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ABSTRACT

The technology contributes negative cons along with positive benefits. As per available data, major cons are on *Chakshuindriya* (eyes), according to the National Institute of Occupational Safety and Health. DES affects 90% of people who spend 3 or more hours on a computer screen. It can be managed through *Trataka* and *Jala Neti*. During *Trataka* practices, it stimulates the lacrimal gland, which helps to produce a normal amount of tears to lubricate the eyes, and also tones up the optic nerve for better vision and saves from sensitivity toward light. *Jala Neti* means cleansing of Cavities (oral and nasal), which gives a soothing effect on the eyes. That means it protects from the burning sensation and redness of the eyes, symptoms of DES. Hence, these two yogic practices give a positive impact and are useful for a more desirable effect. The purpose of this study is to explain the comparative efficacy of *Trataka* and *Jala Neti* for the management of DES. The literary material is collected from related literature, research papers, digital-e-sources, and manuscripts. On the basis of the available documents, the critical analysis is done, and a suitable conclusion will be drawn. This study suggests that *Trataka* and *Jala Neti* improve the ability to make visual adjustments, and remove all symptoms such as dryness, burning sensation, sensitivity to light, itching, and swelling.

1. INTRODUCTION

The most exquisite gift that contemporary science has ever given to humanity is the computer. The majority of humans uses computers every day and is constantly around them. Children today are hardly an exception. The majority of our daily work is computer-dependent. The present period of modernization has profoundly altered human living styles, which are now characterized by competition and cutting-edge technology. Computer vision syndrome (CVS) (also known as digital eye syndrome), a transient ailment brought on by focusing the eyes on a computer display for an extended period of time, is frequent among modern computer users.^[1] DES-related symptoms are frequently seen when using digital devices for longer than 4 h/day. Normal human blink rates are 15–20/min, whereas computer users only blink 2–3 times/min.^[2] The most prevalent eye condition caused by excessive use of technological devices is known as digital eye strain (DES), which is marked by symptoms including headaches, dry eyes, itching, burning sensation, redness in eyes, swelling, and foreign body sensation.^[3] The prevalence of CVS ranges from 64% to 90% among computer users.^[4] A cross-sectional study conducted in metropolitan cities of India on MBBS students shows 71.6% of DES

prevalence in computer-using students.^[5] Another cross-sectional study conducted in Chennai, India, on engineering and medical computer user students and prevalence of DES on engineering students, 81.9% and on medical students, 78.8% was found.^[6] The Digital Eye Strain Report of 2016, which included survey responses from over 10,000 adults from the USA, identified an overall self-reported prevalence of 65%, with females more commonly affected than males (69% vs. 60%).^[7]

1.1. What is Digital Eye Syndrome

Digital eye strain describes a bunch of eye and vision-related issues that succeeding from prolonged use of portable laptops, tablets, e-reader, and mobile phones. Several people experience eye discomfort and vision issues when exploitation digital devices for extended periods. The extent of discomfort seems to increase with the quantity of digital use.^[8]

1.2. Causes of Digital Eye Syndrome

After prolonged computer use, the frequency of blinking is decreased, which causes the eyes to dry and become sore. As a result, the ability to focus diminishes and vision may blur, which causes headaches and neck pain. Any person who spends approximately 2 h a day working on a computer is at risk for developing CVS.^[9]

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2. PATHOPHYSIOLOGY OF CVS

Prolonged uses of Computer, Mobile and Laptop screen, Puts Extra Pressure on Ciliary mentioned in figure 1

Muscles of the Eye, promoting fatigued eyes and reducing blinking rate, which causes Less secretion of tears from the lacrimal gland

There are three mechanisms in Pathophysiology of Digital eye Syndrome

1. Extra Ocular mechanism^[10]

Musculoskeletal symptoms such as:

- Neck stiffness, discomfort
- headaches
- backaches
- shoulder pain

2. Accommodative mechanisms^[11]

- Myopia
- Presbiopia
- Double vision
- Slugging focus change are all triggered

3. Ocular surface mechanism^[12]

- Corneal dryness
- Decreased blink rate
- Increased corneal surface exposures

3. DISCUSSION

Yoga is an exercise method that originated in ancient India. This also entails dietary and psychological adjustments. It taught proper bodily alignment (yoga asana), regular breathing techniques (pranayama), practices to detoxify the joints and the eyes, relaxation, and meditation. Yoga has been shown to affect the sympathetic nervous system and hypothalamic-pituitary-adrenal axis, hence enhancing both physical and psychological well-being. Some yoga techniques, such as Pranayama, Trataka, and Jala Neti, have been suggested to improve vision.^[13]

3.1. Tratak

Trataka, which is Sanskrit for “constant gazing,” is mentioned in several treatises, including the *Gheranda Samhita* and the *Hatha Yoga Pradipika*. There are two different types of practice: *Antaranga*, or internal *Trataka*, and *Bahiranga*, or exterior *Trataka*. A person must look at a symbol or item in *Bahiranga*. However, *Antaranga Trataka* requires a steady and clear internal image of the item. It is claimed that *Trataka* cures all eye disorders, exhaustion, and laziness. It also shuts the door, causing all of these problems. It improves bodily and mental processes in addition to being good for the eyes.

Mocanam netraroganam tandradinam kapatakam, Yatnatastratakam gopyam yatha hataka petakam II.^[14]

“*Trataka*, which cures eye diseases and wards off sloth, etc., should be valued and preserved with effort as one does a casket of gold.”

Namesonmesakim tyaktva suksmalaksyam niriksayet I

Patanti yavadasruni tratakam procyate budhaih.^[15]

“Without winking, one should gaze a minute at an object until tears begin to fall from the eyes? This is called *Trataka* by the wise.”

3.2. Role of Trataka in Management of DES

Kumar *et al.* their study shows the improvement in the subjects with digital eye strain after performing *trataka kriya*. Their study was applied on 29 mean age of 30 sample who work on a computer screen more than 2 h in a day, regular *tratak kriya* was performed for 1 month, data were observed by a Schirmer strip and the CVS questionnaire, before and after interventions paired t-test was used. A $P < 0.05$ is considered significant for the study. Mushale *et al.* in their study, she concluded that *Trataka* improves the ability to make visual adjustments, the accommodation reflex and concentration, and helps to stimulate as well as relax the eye muscles. *Trataka* improves the ability to make visual adjustments, the accommodation reflex and concentration, and helps to stimulate as well as relax the eye muscles. The palming, blinking, and splashing exercises relax the eye muscles. Sharma *et al.* in their review article concluded that this disease of modern times can be well dealt with by the practices mentioned in ancient times. Moreover, *Trataka yoga* can be the best way to deal with CVS. Tells *et al.* their study concluded that the yoga practice appeared to reduce visual discomfort in computer users. There are 291 samples where 147 participants were involved in the yoga group and 145 participants were involved in the control group 60-day yoga applied to the yoga group, daily 1 h 5 days a week. While the scores for visual discomfort of both groups were comparable at baseline, after 60 days, there was a significantly decreased score in the YG group, whereas the WL group showed significantly increased scores.

3.3. How Tratak Effects the Digital Eye Syndrome

In *trataka* practice, we have to gaze at any one point, it toned up the optic nerve which is responsible for better vision and also it stimulate the lacrimal gland it lubricate the eyes, reduces dryness, burning sensation, it helps to maintain the pressure of vitreous body, helps to improve the visual adjustment and reduces the symptoms such as headache, redness in eyes, itching and swelling of eyes.

3.4. Neti

Neti is a technique to cleanse the nasal passages. It is a cleansing process related to the upper part of the respiratory system.^[16] It also plays an important role in the management of vision-related problems such as dryness, itching, burning sensation, and excessive swelling.

3.5. How Neti Affects the DES

Neti Kriya helps to clean the ocular cavity, clean the lacrimal canaliculus, and the lacrimal sacs. It stimulates the superior and inferior oblique muscles, reduces tenderness of the superior and lateral rectus muscles, and reduces fatigue and ocular muscle pain. It reduces the hyperactivity of the pupil and improves vision

3.6. Role of Jala Neti in the Management of DES

Practice of *jala neti* and other yoga procedures was effective in symptoms such as eye pain, eye strain, watering, and heaviness of the eye.^[17] creates a positive impact on the nasal and as well as in ocular area, also so it will get strengthening the optic nerve, giving a lubricating effect on the eyeball. Bansal *et al.* study supports the therapeutic efficacy of *neti* in improving vision. It is yet to be studied, in which all ophthalmic cases *neti* can be applied. Evidence has shown that when used as combined therapy, *jala neti* yields a significant improvement in myopia, systematic practice of *neti* results in the reduction of eye strain, and subjective improvement in vision.

4. CONCLUSION

This study suggests that Tratak and Jala Neti improve the ability to make visual adjustments, and remove all symptoms such as dryness, burning sensation, sensitivity to light, itching, and swelling. Jalaneti can help improve nasal breathing, which may reduce dryness and irritation in the eyes. Improving tear secretion by stimulating the nasal passages, Jalaneti may help regulate tear secretion, alleviating dry eyes associated with CVS. Enhancing oxygenation. Improved nasal breathing can increase oxygenation to the eyes and brain, potentially reducing CVS symptoms.

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7. AUTHOR'S CONTRIBUTIONS

All authors have contributed equally to conception, design, data collection, analysis, drafting, and final approval of the manuscript.

8. ETHICAL APPROVALS

This study does not require ethical clearance as it is a review article.

9. CONFLICTS OF INTEREST

Nil.

10. DATA AVAILABILITY

This is an original manuscript, and all data are available for only review purposes from the principal investigators.

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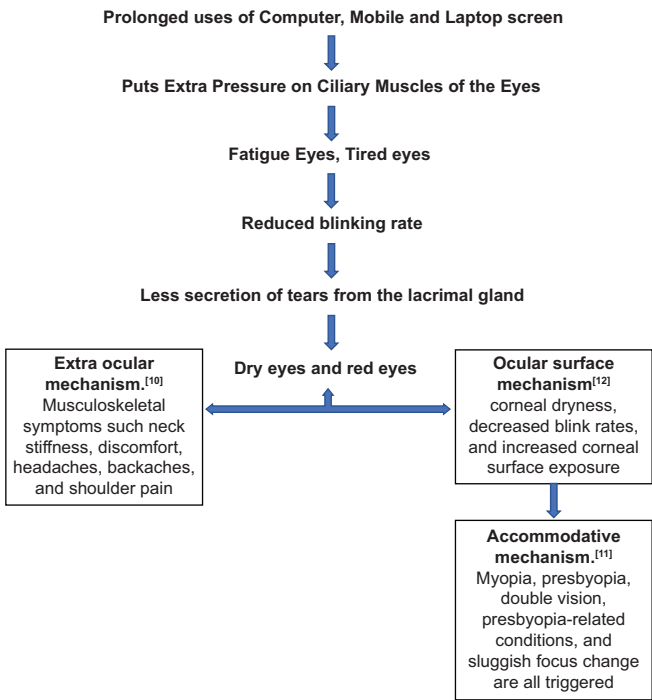


Figure 1: Pathophysiology of CVS