

## A Conceptual Study of Dry Eye Symptom Complex as a *Purvaroopa* of *Netraroga* in Over Users of Computer

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### Abstract

In today's lifestyle a man can have all sorts of facilities available at finger touch. Though due to this, life of man is becoming luxurious but it has some ill effects on health. Extreme interference of electronic instruments, change in food habits and daily regime, all these have decreased physical capacity of man. In *Ayurveda* it is described that *Atiyoga* of *Chakshurdriya* is responsible for various eye complications, such as Dry eye symptom complex. *Purvaroopa's* of *NetraRoga* are described by *Sushrutacharya*. Present study is conceptual study and tried to correlate association between *Purvaroopa's* of *Netra Roga* and Dry eye symptom complex in over users of computer.

### Keywords

*Dry eye symptom complex, Purvaroopa, Kriyasharir*



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## INTRODUCTION

Eye is an important sense organ of our body without which one cannot see the universe. Out of all sense organs *Chakshurindrya* is important, as loss of its function leads to serious disability to human being by keeping him in the darkness. Improper diet and wrong behavioral patterns (*Pradnyaparadh*) are generating unhealthy effects on the body and mind, disability of sense organs is one of them.

In *Ayurveda* it is described that *Atiyoga* is one of the causes of *Ayatan* of *Roga*. Looking towards sun or any bright substance for a long period is one of the types of *Atiyoga* of *Chakshurindrya*<sup>1</sup>. These days' people are working on computer for long periods of time which is becoming a leading cause of dry eye symptom complex. Dry eye symptom complex is a common disorder of the normal tear film affecting a significant percentage of the population. Dry eye is not a disease entity, but a symptom complex occurring as sequelae to decreased tear production, excessive tear evaporation and abnormalities of the tear production. According to *Ayurveda*, it is an *Adhishthan*

*Vikar* and it is mainly related to *Ashruvaha Srotas*.

In *Ayurved Samhitas* the literature regarding *Netra Sharir* and *Netra Kriya Sharir* is in scattered form. Therefore, the present article is a small effort to explain dry eye symptom complex by *Ayurvedic* point of view.

Thus considering all these facts, the topic to study the concept of *Netra Kriya Sharir* especially the dry eye symptom complex and the signs and symptoms of it observed in today's lifestyle and also the association of those with over use of computer is selected for study.

## AIM

To study *Netra Kriya Sharir* with special reference to dry eye symptom complex in over users of computer

## OBJECTIVES

Primary: To elaborate *Netra Kriya Sharir* from *Ayurvedic* view.

Secondary:

- 1) To study Dry Eye Symptom Complex in over users of computer.
- 2) To represent Dry Eye Symptom Complex in terms of *Ayurveda* with the help of *Trividh Pariksha*.



## MATERIALS AND METHODS

Thirty patients of over users of Computer (> than 8 hr per day) showing the symptoms of dry eye were observed in OPD of Shalakyatantra, Sane Guruji Hospital, Sumatibhai Shah Ayurved Mahavidyalaya, Hadapsar Pune-28.

### CRITERIA FOR ASSESSMENT

- Examination of symptoms of Dry eye symptom complex
- Schirmer's test was done for Dry eye symptom complex

**Schirmer's Test:** It measures total tear secretions. It is performed with the help of 5 x 35mm strip of whatman-41 filter paper or with dryness strips, which is folded 5mm from one end and kept in the lower fornix at the junction of lateral 1/3<sup>rd</sup> and medial 2/3<sup>rd</sup>. The patient is asked to look up and not to close the eyes. After 5 minutes wetting of the filter paper strip from the bent end is measured.

Results of test:-

15-30 mm – normal, 10-15 mm- mild dry, 5-10 mm – moderate dry, 1-5 mm – moderately severe dry, 0-1 mm – severe dry.

## OBSEVATIONS

### Test 1-

To test whether the results of Schirmer's tests are mild, moderate or severe are equally distributed.

The used test is likelihood ratio test for testing goodness of fit.

The test statistic, likelihood ratio =9.8 and p value =0.007

Since p value is < 0.05 (the level of significance), there is strong evidence to reject null hypothesis.

The results of Schirmer's test results Mild, Moderate and Severe are not equally distributed.

The table.1 showing the results is as follows.

**Table 1**

Schirmer's Test Result	Mild	Moderate	Severe	Total
Frequency	10	17	3	30

The Table1 suggests that the maximum frequency is of type Moderate. Hence the incidence of Schirmer's test results moderate would be maximum in population.

### Test 2-

To test where there is significant association between *Dosha Dushti* and number of complaints in Dry eye group.

The used test is likelihood ratio test for testing goodness of fit.

The test statistic, likelihood ratio = 28.787 and p value = 0.001. Since p value < 0.05, the level of significance, there is strong evidence to reject null hypothesis. There is significant association between *Dosha Dushti* and number of complaints in Dry eye group i.e. number of complaints could be more or less according to *Dosha Dushti*. The cross table.2 between *Dosha Dushti* and number of complaints is as follows.

**Table 2**

Number of symptoms	PK	VK	VP	VPK	Total
7	2	8	4	3	17
8	2	0	6	0	8
9	0	0	0	1	1
10	0	0	0	4	4
Total	4	8	10	8	30

(PK- *Pitta Kapha*; VK- *VataKapha*; VP- *Vata Pitta*, VPK- *Vata Pitta Kapha*)

The table.2 suggests that the maximum frequency is of *DoshaDushti VP* and minimum is of *DoshaDushti PK*.

## DISCUSSION

### 1. Ayurvedic view of *NetraSharir*:

When we study regarding *Ayurvedic Netra Sharir* it is important to study the relation of *Netra* with *Dosha*, *Dhatu* and *Mala*. There are five types of *Vata Dosha*<sup>2</sup>. Among these five types mainly *Vyana Vayu* is responsible for each movement of eye, majorly

including *Unmesha* and *Nimesha karma* of *Netra*<sup>3</sup>. Other types of *Vata* are also having relation with *Netra* as described earlier. *Pitta Dosha* is also of five types from which *Alochaka Pitta* resides in eyes and mainly responsible for *Rupagrahan Karma*<sup>4</sup>. Other types of *Pitta* are also having relation with *Netra*. Mainly *Tarpaka Kapha* is responsible for *Tarpana Karma* of *Netra*<sup>5</sup>.

*Netra* is also having relation with *Sapta Dhatu*<sup>6</sup>. *Rasa Dhatu* takes part in *Preenan* of *Netra*. *Rakta Dhatu* takes part in *Poshana* of *Netra*. *Rakta Sara* person having *Aarakta Varni Netra*. *Mansa Sara* person having *Mansala* and *Pushta Netra*. *Meda Sara* person having *Snigdha Netra*. *Majja Sara* person having *Mahanetra*. *Shukra Sara* person having *Kshira Purna Lochan* and *Saumya Lochana*<sup>7</sup>.

The thick and white color secretions coming out from *Netra* are *Mala* of *Mansa Dhatu*. The oily secretions coming out of *Netra* are *Mala* of *Majja Dhatu*<sup>8</sup>. *Netra* is also having relation with *Trividha Prakruti*. *Vata Prakruti* persons having *Khara (ruksha)*, *Dhusara*, *Vrutta* (circular), *Acharu* (Not good in looking), *Mrutopamani* (While sleeping it looks like quite open). *Avyavasthita* and *Chala Drushti Netra*. *Pitta Prakruti* persons having *Tamra* (Reddish) in



color, *Tanu* (Tiny), *Pinga* (Yellowish), *Chala* (Not Stable), and *Pakshma* (Eye lashes) are *Tanu* (Tiny), *Alpa* (Less in Number) and *Himapriyani* (Likes cool ness), *Netra* and if that person becomes angry or drink alcohol ten eyes become red in color. *Kapha Prakruti* person having *Shuklaksha* (White in color), *Rakta Netra* (Lid margin and conjunctiva red in color), *Susnigdha Netra*, *Vishal* (Big in size), *Dirgha* (Long in Shape), *Suvyakta Shuklasita* (The White part means Cornea are well separated), *Pakshmalaksha* (Eye lashes are more ) *Netra*.

## 2. Ayurvedic View of Netraroga:

In *Ayurveda* some kind of *Hetus* of *Netraroga* are stated and these are elaborated by *Sushrutacharya* (*Su. U. 1/27*). *Purvarupa's* of *Netraroga* are *Avila* (Turbidity of eyes), *Sasamrabha* (Inflammation of eyes), *Ashru* (watering of eyes), *Kandu* (Itching of eyes), *Upadehavata* (Dirt coming through eyes), *Guru* (Heaviness of eyes), *Usha* (Burning sensation of eyes), *Toda* (Pain of eyes), *Raga* (Redness of eyes), *Sashulavartma-kosheshu* (Pain of eyelids), *Shukapurnabha* (Foreign body sensation) and *Vihanyamanam Rupe Kriyasvakshi Yatha Pura* (Blurred vision or eye not functioning as before). *Samprati* of

*Netraroga* is described in *Ayurvedic* text as aggravated *Dosha* circulating in *Siras* (*Vagbhatacharya- Pittavahasiras*) when go upwards and are located in parts of eye, highly severe disease take place therein<sup>9</sup>.

*Netra* means a sense organ by which we can see and *Shushkata* means the loss of oiliness and absence of tear. In this condition the *Vata*, *Pitta* vitiation takes place and *Kapha Kshaya* takes place. Means manifestation of *Tridosha* causes *Netra Shushkata*. One more disease is described known as *Shushkakshipaka*. Signs and Symptoms of this are dryness, eyelids becomes dry and hard, difficulty in closure and opening of eyes, vision become turbid (*Aviladarshana*), and inflammation these are observed<sup>10</sup>.

The management of *Netraroga* consists of elimination of etiological factors the treatment of *Vata* etc. *Netra Parikshana* includes *Rugna Parikshana*, *Ashtavidha Parikshana*, *Netra Parikshana* by *Trividha Pariksha*.

## 3. Modern View of Netraroga:

Computer Vision Syndrome (CVS) is a temporary condition resulting from the eyes on a computer display for protracted, uninterrupted period of time. Signs and symptoms of CVS are headache, blurred vision, neck pain, redness in eyes, fatigue,



eye strain, dry eyes, irritated eyes, double vision, polyopia, vertigo or dizziness, difficulty in refocusing the eyes. This signs and symptoms can be further aggravated by improper lightening conditions or air moving passes the eyes.

#### **DRY EYE**

Dry eye is not a disease entity, but a symptom complex occurring as a sequel to deficiency or abnormalities of the tear film that affects a significant percentage of population. Three main layers make up the tear film. The innermost layer is the thinnest called Mucin layer. The middle layer is largest and thickest. Defects of this layer are the most common cause of Dry eye symptoms complex, the most superficial layer is a very thin layer of lipids.

Causes of Dry Eye decreased tear production, excessive tear evaporation, and an abnormality in the production of mucus or lipids normally found in the tear layer, or a combination of these.

Symptoms of Dry eye are- Irritation of eyes, Foreign body sensation, Feeling of dryness, Ocular Discomfort, Blurring of vision, Light sensitivity, Burning sensation of eyes, Redness of eyes, Itching of eyes, Heaviness of eyes. Symptoms worsened by activities in which the rate of blinking is reduced due to

prolonged use of eyes. These activities includes prolong reading, computer usage, driving or watching television.

Diagnostic test is Schirmer's test. It measures total tear secretions in eye.

**4. Signs and Symptoms**  
**Sarambha (Irritation of eyes)**-Vitiating of *Vatadosha* which causes irritation of eyes.  
**Shukapurnabhameva (Foreign Body sensation in Eyes)** -*Ruksha* property of *Vatadosha* causes this symptom, it may be due to overuse of eyes.

**Netra Rukshata (Feeling of Dryness)**-In computer users blinking of eyes occurs at irregular intervals, which impairs normal pumping mechanism of lacrimal sac, resulting in Dry eye.

**Ocular Discomfort**- *Vitiated Vatadosha* is responsible for eye movements due to continuous staring at computer for a prolonged period, eye movements becomes difficult and results in Ocular discomfort.

**DhusarDrushti (Blurring of vision)** – Overuse of computer may hamper the Physiology of eye resulting in blurring of vision.  
**Prakash Asahtva (Light Sensitivity)** - Because of long term computer use strain on eyes and dryness increases resulting in difficulty in light dark adaptation of eyes.



**Ushan/ Netradaha (Burning Sensation of Eyes)** -*Ushna* is symptom of vitiated *Pitta Dosh*a, as texted by *Dalhanacharya*. Use of computer for long time causes strain on eyes, causes burning of eyes.

**Netra Lalima/ Raga (Redness of Eyes)**-*Raga* is due to vitiation of *Pitta* and *RaktaDosh*a. Long hours computer work, causes changes in interval of blinking, resulting in redness of eyes computer.

**Netra Kandu (Itching of Eyes)** – *Kapha Dosh*a is responsible for *Kandu* i.e. itching of eyes.

**NetraGaurav (Heaviness of Eyes)** –*Kapha Dosh*a causes heaviness of eyes. Perhaps, exposure to bright light or like working on computer, causes strain on eyes. Which suggest that there is mainly *Dosh*a *Dushti* of *Vata* and *Pitta Dosh*a.

#### **SAMPRAPTI-**

Because of continuous looking towards computer the blinking process of eye decreases-> evaporation of moisture from tear film and less secretion of oil -> Vitiation of *Vata* and *Pittadosha* and *Kapha Kshaya*->*Ruksha* and *Ushna guna* increases, *Snigdha guna*, decreases-> Because of that eyes become dry, red in color and gradually manifestation of all symptoms of Dry Eyes

occurs-> It shows impact on Normal eye functions.

As study showed, continuous over use of computer produces sign and symptom of Dry Eye Symptom Complex, so should be avoided, but can't be, as it is mandatory for person who works on computer daily. So, there is no doubt that today's life style is repelling man away from nature laws and this is main cause for ill healthy states.

Certain self-care tips at home may help. Hot compresses and eyelid massage help by providing a thicker, more and lipid layer. Artificial tears and lubricating eye drops and gels (available over the counter) help provide more moisture lubrication for the surface of the eye. If the eyes are dry mainly while using computer then, taking frequent breaks to allow the eyes is to rest and become moist and comfortable again is helpful. Closing the eyes for 10 seconds after every five to 10 minutes will increase comfort, as will blink more frequently.

Some *Ayurvedic* treatments are also useful in the Dry eye symptom complex. *Padabhyanga*, *Nasya*, *Anjana*, *Ashchotana* and *Tarpana* treatments can be applied.

As we know that the eye is an important sense organ. So every person should be cautious for caring of eyes.



## CONCLUSION

The *Netra Kriya Sharir* is elaboratively explained in this study. The literature regarding *Netra Kriya Sharir* is scattered in our *Samhitas*, so in this study such literature brought together and elaborated. In *Ayurveda* dry eye symptom complex is taken into consideration under title *Netrashushkata*. While explaining the *Netraroga* its *Hetu* and *Purvaroopas*, it is seen that signs and symptoms of Dry eye symptom complex and *Purvaroopas* of *Netraroga* are same<sup>11</sup>. So we can say as Dry eye symptom complex is a *Purvaroopas* of eye diseases. The *Samprapti* of *Netrashuhkata* (Dry eye symptom complex) is explained in the above study.

## SCOPE FOR FURTHER STUDY

- Study can be conducted in large sample size.
- Study can be conducted by intervention of medicine on Dry Eye Symptom Complex.
- To find exact association of eyes an *Atiyoga* of *Chakshurindriya*, the study can be conducted.





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