



**A DESCRIPTIVE STUDY OF DHRISTI SADHANA YOGA KRIYA IN THE  
MANAGEMENT OF MYOPIA - A CASE SERIES**

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### ABSTRACT

**Background:** Siddhars are the one who attained perfection in yogic practices to ultimately reach the stage of immortality through higher level yogic practices. Yoga is a holistic approach for both physical and mental health. Yoga as a mind body medicine with its use being recommended as non pharmacological tool for managing various postures[Asanas] has been shown to have therapeutic benefits for individuals. **Aim:** To evaluate the effectiveness of Dhristi sadhana kriya yoga in the management of myopia patients in OPD of Siddhar Yoga Maruthuvam, Government Siddha Medical College & Hospital, Palayamkottai. **Materials and Methods:** Descriptive study-Case Series. The study was conducted on 30 patient of Myopia. Computerized vision test report were documented before and after treatment. All data will be Statistical analyzed and appropriate result will be determined.

### Results and Discussion

- Study will reveal the effectiveness of Dhristi sadhana kriya treatment for myopia.
- If the outcome is favourable, Dhristi tratata techniques will be proceeded for further research. An effective tratata procedure for treating myopia will be accomplished.

**KEYWORDS:** Myopia, Asanas, Pranayamam, Computerized vision test.

### INTRODUCTION

The origin of this system is considered to be divine, Siddhar Agasthyar is considered as the father of this medical system. There are 18 prominent siddhars who are the main contributors to this system of medicine. The original texts and treatise for siddha are written in Tamil language. Siddhar Yoga Maruthuvam is a unique and special branch of siddha system.

Myopia is an inability of a person to see the distant objects clearly. It is also known as Near Sightedness or Short Sightedness.

### BACKGROUND

Dhristi Sadhana is a yogic practice it comes under kriya yogam which involves steady gazing or focusing on a specific points. Dhristi Sadhana plays a vital role in treating eye disorders concentration, improve focus, and calm the mind.

### MYOPIA

Myopia is among the many errors of refraction that affect the eyes. People who have myopia have difficulty seeing distant objects, but can see objects that are near clearly. "According to WHO international standard terminologies on siddha medicine, myopia is referred as "KITTAPPARVAI".

### MECHANISM

Myopia occurs if the eyeball is too long or the cornea (the clear front cover of the eye) is too curved Light rays must travel through the front layers of the eye (the cornea and lens). The cornea and lens work together to bend the light so it lands on the back layer of the eye, call retina. The retina then sends a signal to your brain that allows you to see.

With nearsightedness, the shape of your eye prevents light from bending properly, so that light is aimed in front of your retina instead of on your retina. For example, the cornea at the front of your eye may be too steeply curved, or your eye may be longer front to back

than normal. In either case, the light rays fall short of the retina. As a result, the light entering the eye isn't focused correctly, and distant objects look blurred."

### CAUSES

The underlying cause is believed to be a combination of genetic and environmental factors. Risk factors include doing work that involves focusing on close objects, greater time spent indoors, urbanization, and a family history of the condition. It is also associated with a high socioeconomic class and higher level of education. Individuals who spend considerable time reading, working at a computer, playing video games or doing other intense close visual work may be more likely to develop myopia. In fact, high levels of screen time on smart devices is associated with around a 30% higher risk of myopia and, when combined with excessive computer use, that risk rose to around 80%.

### TYPES OF MYOPIA

On the basis of clinical appearance.

**Simple Myopia:** Myopia in an otherwise normal eye, typically less than 4.00 to 6.00 diopters. This is the most common form of myopia.

**Pseudo Myopia:** Pseudomyopia is the blurring of distance vision brought about by spasm of the accommodation system.

**Nocturnal Myopia:** Without adequate stimulus for accurate accommodation, the accommodation system partially engages, pushing distance objects out of focus. On the basis of severity.

**Low Myopia:** Low myopia usually describes myopia between -0.50 and -3.00 diopters.

**Medium Myopia:** Moderate myopia usually describes myopia between -3.00 and -6.00 diopters. Those with moderate amounts of myopia are more likely to have pigment dispersion syndrome or pigmentary glaucoma.

**High Myopia:** High myopia usually describes myopia of -6.00 or more. People with high myopia are more likely to have retinal detachments and primary open angle glaucoma. They are also more likely to experience floaters, shadow-like shapes which appear in the field of vision. In addition to this, high myopia is linked to macular degeneration, cataracts, and significant visual impairment.

On the basis of the time of its onset.

**Youth-Onset Myopia:** Youth onset myopia occurs in early childhood or teenage, and the ocular power can keep varying until the age of 21.

**Early Adult-onset Myopia:** Myopia occur between 20 to 40 years of the age.

### SYMPTOMS

- Trouble seeing at far-away objects
- Driving does not seem comfortable
- Excessive eye strain which leads to headaches.
- Excessive blinking of eyes
- Rubbing of eyes frequently
- Need to squint eyes for seemingly normal task
- Needing to sit closer to Screen

### DIAGNOSIS

A diagnosis of myopia is typically made by an eye care professional, usually an optometrist or ophthalmologist. During a refraction, an auto refractor or retinoscope is used to give an initial objective assessment of the refractive status of each eye, then a phoropter is used to subjectively refine the patient's eyeglass prescription.

### AIM

To evaluate the effectiveness of Dhristi sadhana kriya yoga in the management of myopia patients in OPD of Siddhar Yoga Maruthuvam, Government Siddha Medical College & Hospital, Palayamkottai.

### OBJECTIVES

To assess the effectiveness of Dhristi sadhana yoga kriya for myopia in OPD of Siddhar Yoga Maruthuvam, Govt siddha medical college & hospital, palayamkottai.

**PURPOSED METHOD:** Through the Computerized Vision Test before and after the intervention in Myopia. Dhristi Sadhana was given to the patients daily.

### POSTURE

- Sitting in Vajrasana with right big toe over the left big toe.
- Hold the thumb of both hands together with the thumb facing towards the face.

Step: 1: Move the hand from left to right and right to left at the shoulder level then similarly move the hand upward and downward from the level of forehead to thigh.

Step: 2: Rotate both the hands in clockwise and anti-clockwise direction.

Step: 3: Keep both the hands in extended position at the level of nose tip move the hands in to and fro motion towards eye.

Step: 4: Close the both eyes with each palm keeping the eyes closed for two minutes.

**DURATION:** Each step was repeated for thrice for 45 days.

### CRITERIA FOR INCLUSION

- Age: 15 –30 years
- Male and Female
- Simple myopia
- Pseudo myopia
- Mild myopia 0 D to -3D

- Moderate myopia -3 D to -6D
- Youth onset myopia
- Early adult onset myopia

#### CRITERIA FOR EXCLUSION

- Nocturnal myopia
- Degenerative myopia
- High myopia -6D or more
- Late adult onset myopia
- Premature birth
- Congenital- Albinism, Ehlers- danlos syndrome, Fabry's disease, Marfans syndrome, Pierre - Robin syndrome
- Glaucoma
- Cataract
- Diabetes mellitus

#### MATERIALS AND METHODS

**STUDY TYPE:** Descriptive study

**STUDY DESIGN:** Case series

**STUDY PLACE:** Outpatient Department, Department of Siddhar Yoga Maruthuvam, GSMCH, PALAYAMKOTTAI.

**STUDY PERIOD:** 4 Months

**SAMPLE SIZE:** 30

**SAMPLING PROCEDURE:** Non-Random sampling. (Convenience)

#### METHOD OF APPROACH

- Before treatment patient Subjective Myopia Screening questionnaire.
- Patients was undergo Computerized Vision test before and after treatment for prognosis of the procedure.

#### DATA COLLECTION

##### INFORMATION COLLECTED

- Information such as patient's personal details medical histories, symptoms, duration of illness, prognosis of diseases.
- Quality of treatment will be collected through Computerized Vision test before and after treatment.

#### DATA COLLECTING PROCEDURE

The direct face to face interview was carried out to collect the data from the patients. Prognosis data was collected through Computerized vision test.

**Table 3 – Distribution of case according to Indoor activity.**

S.NO	INDOOR ACTIVITY	5-6 hrs	6-7 hrs	7-8 hrs	8-9 hrs
1	NO. OF CASES	4 [13%]	8 [27%]	7 [23%]	11 [37%]

#### CONFIDENTIABILITY

The personal information of the participants will be kept in confidential manner.

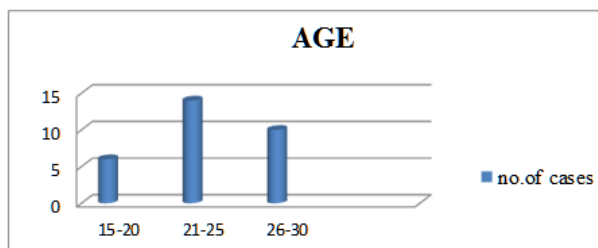
#### ETHICAL ISSUES

- No internal medicines was used. The data collected from the patient was Kept Strictly Confidential.
- The patient was informed about the diagnosis, treatment and follow up. After getting the consent of the patient (through consent form) was enrolled in the study.
- Treatment was provided free of cost.

#### RESULTS

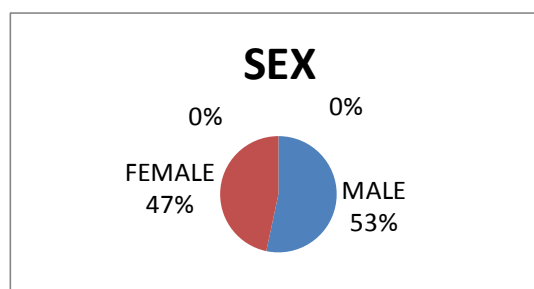
**Table 1: Distribution of case according to Age.**

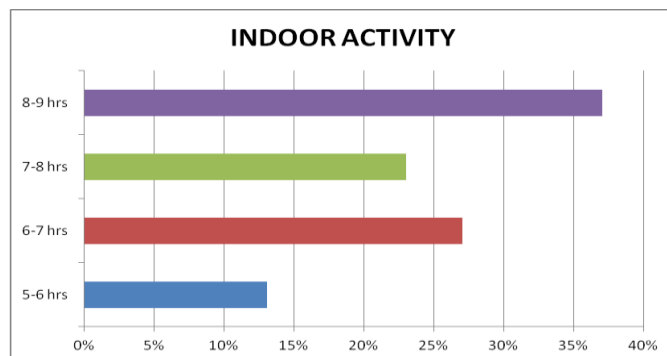
S.NO	AGE	NO.OF CASES	PERCENTAGE
1	15-20	6	20%
2	21-25	14	47%
3	26-30	10	33%



**Table 2: Distribution of case according to Sex.**

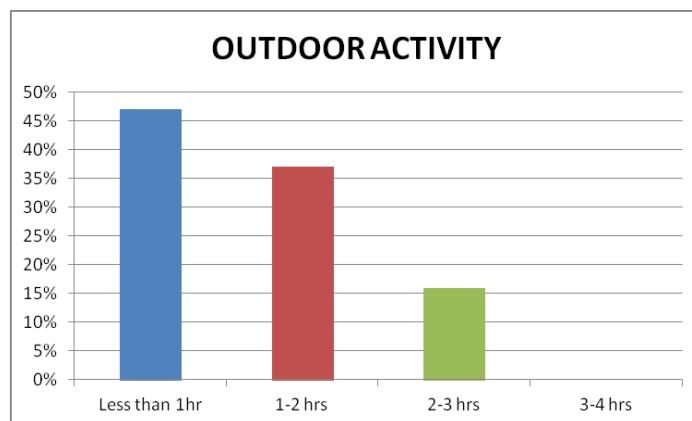
S.NO	SEX	NO. OF CASES	PERCENTAGE
1	MALE	16	53%
2	FEMALE	14	47%





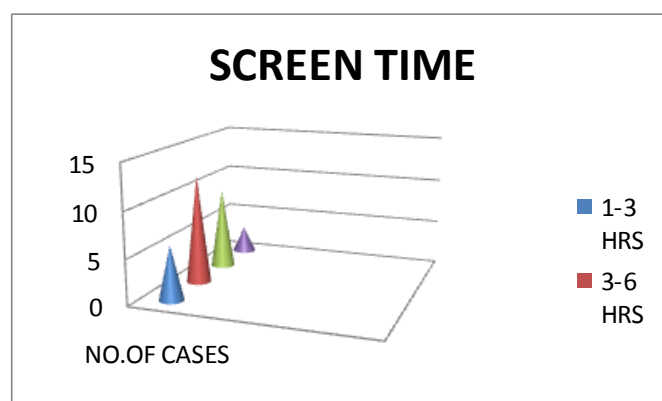
**Table 4: Distribution of case according to Outdoor activity.**

S.NO	OUTDOOR ACTIVITY	Less than 1hr	1-2 hrs	2-3 hrs	3-4 hrs
1	NO. OF CASES	14 [47%]	11 [37%]	5 [16%]	0 [0%]



**Table 5: Distribution of case according to Screen time.**

S.NO	SCREEN TIME	1-3 hrs	3-6 hrs	6-9 hrs	9-12 hrs
1	NO.OF CASES	6 [20%]	12 [40%]	9 [30%]	3 [10%]



**Table 6: Distribution of case according to Symptoms.**

S.NO	SYMPTOMS	PRESENT	ABSENT	SOMETIMES	PROGNOSIS[GOOD]
1	BURNING SENSATION/ TEARING/ DRYNESS	10 [33%]	20 [67%]	0	8 [80%]
2	EYE FATIGUE ON SCREEN TIME	7 [23.3%]	7 [23.3%]	16 [53%]	20 [87%]
3	HEADACHE	6 [20%]	17 [57%]	7 [23%]	9 [69%]

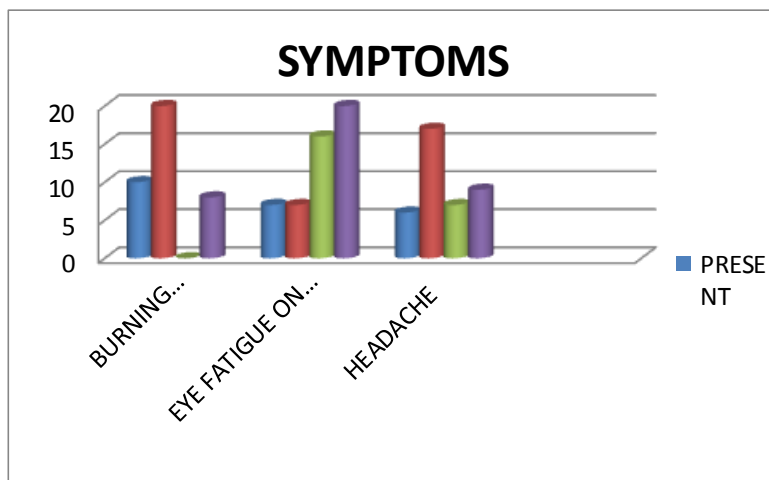
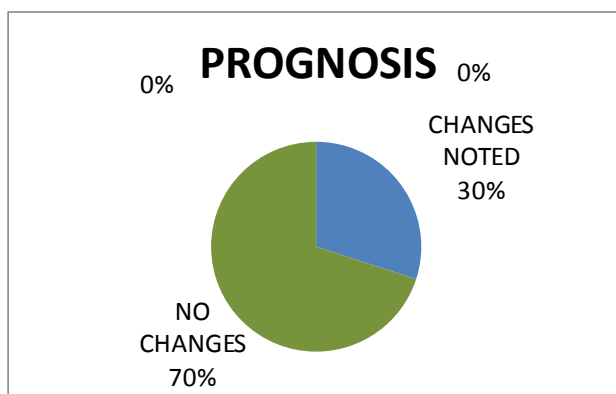


Table 7: Distribution of case according to Prognosis.

S.NO	PROGNOSIS	CHANGES NOTED	NO CHANGES
1	NO.OF PATIENTS	9 [30%]	21 [70%]



**PROGNOSIS BEFORE AND AFTER TREATMENT**

S.NO	OP NO	AGE/SEX	BEFORE SP ON RIGHT EYE	BEFORE SP ON LEFT EYE	AFTER SP ON RIGHT EYE	AFTER SP ON LEFT EYE
1	50150	18/F	-0.25	-0.5	-0.25	-0.5
2	50147	18/F	-1.25	-1.25	-1.25	-1.25
3	50556	20/F	-1.25	-1.5	-1	-1.25
4	50771	19/M	-0.75	-0.5	-0.75	-0.5
5	52145	21/M	-1.25	-1.5	-1.25	-1.5
6	52697	24/M	-0.75	-0.5	-0.75	-0.5
7	53461	21/F	-0.75	-1	-0.5	-0.75
8	57170	24/F	-0.5	-0.5	-0.5	-0.5
9	58073	29/M	-4	-3.5	-3.75	-3.25
10	58808	28/F	-0.25	-1	-0.25	-1
11	59552	25/F	-1	-1.25	-1	-1.25
12	59894	26/M	-0.5	-0.5	-0.25	-0.25
13	60116	28/M	-1.25	-1.5	-1	-1.25
14	60821	28/F	-0.75	-1	-0.75	-1
15	61495	21/M	-0.5	-0.5	-0.5	-0.5
16	65251	25/F	-1.75	-1.5	-1.5	-1.25
17	65249	25/F	-0.25	-1	-0.25	-1
18	65681	23/F	-1	-1.5	-1	-1.5
19	67576	25/M	-0.5	-0.25	-0.5	-0.25

20	68901	26/M	-1	-1.25	-0.75	-1
21	68819	24/F	-3	-2.5	-3	-2.5
22	68905	22/F	-1	-1.25	-1	-1.25
23	77266	18/M	-0.25	-1	-0.25	-1
24	77267	23/M	-0.75	-1	-0.5	-0.75
25	77268	20/M	-0.5	-1.5	-0.5	-1.5
26	77608	26/M	-1.75	-1	-1.75	-1
27	77986	26/M	-1	-0.75	-1	-0.75
28	78501	21/F	-1.25	-1	-1	-0.75
29	67019	24/F	-0.25	-0.5	-0.25	-0.5
30	65974	20/M	-0.25	-0.5	-0.25	-0.5

## STATISTICAL INFERENCE

### Paired 't' test

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	BEFORE SP ON RIGHT EYE	-1.0417	30	0.82547	0.15071
	AFTER SP ON RIGHT EYE	-0.9667	30	0.80068	0.14618
Pair 2	BEFORE SP ON LEFT EYE	-1.1417	30	0.65877	0.12027
	AFTER SP ON LEFT EYE	-1.0667	30	0.63631	0.11617

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	BEFORE SP ON RIGHT EYE & AFTER SP ON RIGHT EYE	30	0.99	0
Pair 2	BEFORE SP ON LEFT EYE & AFTER SP ON LEFT EYE	30	0.984	0

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	BEFORE SP ON RIGHT EYE - AFTER SP ON RIGHT EYE	-0.07500	0.11652	0.02127	-0.11851	-0.03149	-3.525	29	0.001
Pair 2	BEFORE SP ON LEFT EYE - AFTER SP ON LEFT EYE	-0.07500	0.11652	0.02127	-0.11851	-0.03149	-3.525	29	0.001

Paired Samples Effect Sizes						
			Standardizera	Point Estimate	95% Confidence Interval	
					Lower	Upper
Pair 1	BEFORE SP ON RIGHT EYE - AFTER SP ON RIGHT EYE	Cohen's d	0.11652	-0.644	-1.033	-0.245
		Hedges' correction	0.11806	-0.635	-1.02	-0.242
Pair 2	BEFORE SP ON LEFT EYE - AFTER SP ON LEFT EYE	Cohen's d	0.11652	-0.644	-1.033	-0.245
		Hedges' correction	0.11806	-0.635	-1.02	-0.242

- The denominator used in estimating the effect sizes.
- Cohen's d uses the sample standard deviation of the mean difference.
- Hedges' correction uses the sample standard deviation of the mean difference, plus a correction factor.

## DISCUSSION

The study was to evaluate the effectiveness of yoga therapy for Myopia. This study was conducted in 30 patients, in this there are 53% of Male and 47% of Female.

In 30 patients, about 33% of patients have family history of Myopia and 50% of the patients have Reading history (reading lot in childhood).

About 60% of patients have Indoor activity for 7-9 hrs and 47% of patients have less than 1hr of Outdoor activity.

The screening time of the patients includes 20% for 1-3 hrs, 40% for 3-6 hrs, 30% for 6-9 hrs, 10% for 9-12 hrs.

33% of the patients have burning sensation/ dryness/ tearing of eye. 23.3% of the patients have Eye fatigue/ tired/ strain while using on smart devices, 20% of the patients have Headache.

According to this, 67% of the patients have good prognosis on burning sensation/ dryness/ tearing of eye. 87% of the patients have good prognosis on Eye fatigue/ tired/ strain while using on smart devices. 69% of the patients have good prognosis on Headache.

Out of 30 patients, 30% have mild changes on their spherical power.

Paired T test was performed for computerized vision test before and after treatment which disseminated statistically significant result p value .001 for spherical power which implies high significance in the prognosis.

## CONCLUSION

In Myopia, genetic and environmental factor plays a major role. 10% of the patients with family history, there is no changes in their spherical power. With no other intervention, except Yoga therapy. I derived the result of 30% of the patients (15-30yrs) have mild improvement in the spherical power. Nowadays due to over exposure to smart devices (mobile, tablet, laptop, LED screens (tv, theater) and increased indoor activity and reduced outdoor activity, most of the people are affected by myopia. Certain lifestyle modification and reducing the usage of smart devices (1-3hrs) or 20-20 method on 6-9 hours of continuous working and increasing outdoor activity with yoga therapy for myopia may lead a better prognosis in future.

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