

Short and Long Sightedness

A Yogic View On Our Vision



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1. Introduction

“The Eyes are the Window to the Soul!”

Cicero

The human eye is the organ which gives us the sense of sight, allowing us to observe and learn more about the surrounding world than we do with any of the other four senses.

We use our eyes in almost every activity we perform, whether reading, working, watching, writing a letter, driving a car, and in countless other ways.

The eye is a slightly asymmetrical globe and a complex optical system. It collects light from the surrounding environment, regulates its intensity, focuses it through lenses to form an image. This image will be converted into electrical signals and transmitted, via complex neural pathways with the brain.

Like all other parts of the human body, disorders and diseases could appear in all different kind of reasons. Specially in our fast digital world, people facing more and more problems with their health.

Let us take a look, how a “Yogic Lifestyle” could influence the eyes, the ability to see and our vision...



2. The Structure Of The Eye

Front

Iris – the pigmented part

Cornea – clear dome over the Iris

Pupil – black circular opening in the Iris that lets light in

Sclera – the white part

Conjunctiva – a thin layer of tissue covering the front of the eye, except the Cornea

Inside

Lens – focus light on the back of the eye

Retina – special light-sensing cells on the back of the eye (convert light into electric signals)

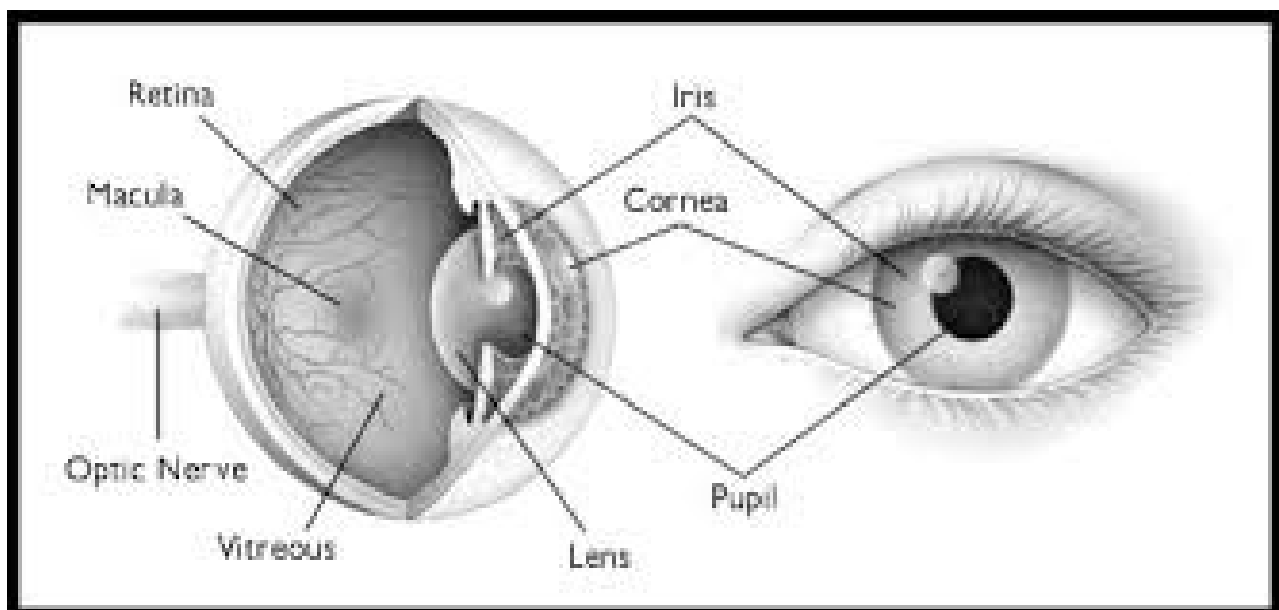
Vitreous – clear gel – the eye is filled with

Macula – small extra sensitive area within the retina that gives central vision

Fovea – a small pit at the center of the Macula that gives the clearest vision

Optic Nerve – carries the impulses to the brain

The eye color is created by the amount and type of the pigment in the Iris. Multiple genes inherited from each parent determine a person's eye color.



3. Process Of Vision

Light waves from an object enter the eye first through the **cornea**, which is the clear dome at the front of the eye. It is like a window that allows light to enter the eye. The light then progresses through the **pupil**, the circular opening in the center of the colored **iris**.

Fluctuations in the intensity of incoming light change the size of the eye's **pupil**. As the light entering the eye becomes brighter, the pupil will constrict (get smaller). As the entering light becomes dimmer, the pupil will dilate (get larger).

Initially, the light waves are bent or converged first by the cornea, and then further by the crystalline lens, to a **nodal point** located immediately behind the back surface of the **lens**. At that point, the image becomes reversed (turned backwards) and inverted (turned upside-down).

The light continues through the **vitreous humor**, the clear gel that makes up about 80% of the eye's volume, and then, ideally, back to a clear focus on the **retina**, behind the **vitreous**. The small central area of the retina is the **macula**, which provides the best vision of any location in the retina. If the eye is considered to be a type of camera, the retina is equivalent to the film inside of the camera, registering the tiny photons of light interacting with it.

Within the layers of the retina, light impulses are changed into electrical signals. Then they are sent through the **optic nerve**, along the visual pathway, to the occipital cortex at the posterior of the brain.



4. Ciliary Muscles

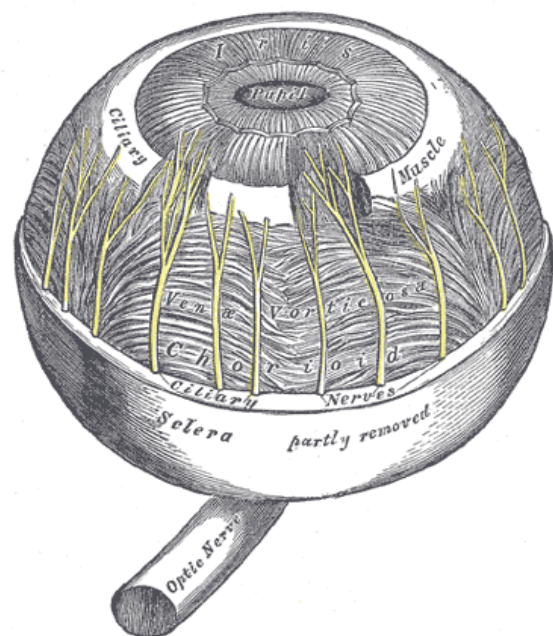
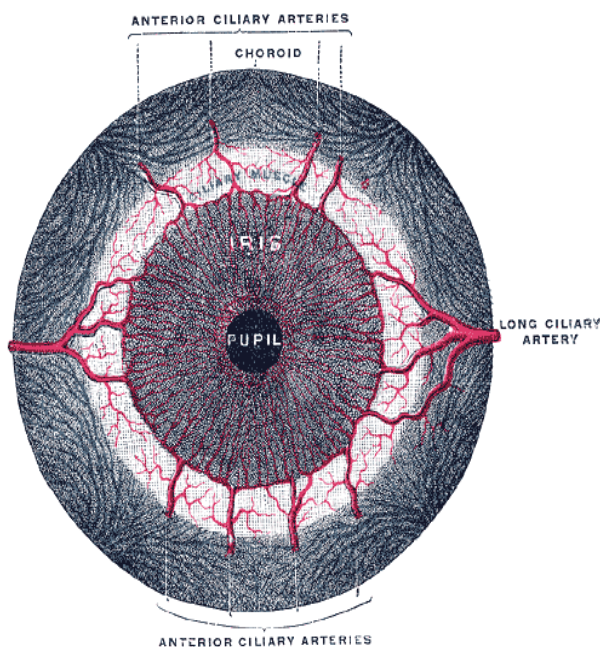
The lens is controlled by the Ciliary muscles which accommodate vision to far and near objects.

The ciliary muscle is a ring of striated smooth muscles in the eye's middle layer that controls viewing and regulates the flow of aqueous humour.

It changes the shape of the lens within the eye, not the size of the pupil which is carried out by the sphincter pupillae muscle.

Contraction of these muscles occurs when we look at near objects, causing the lens to thicken, increasing its power.

When we look into the distance, the normal eye adjust the ciliary muscles within a fraction of a second. This adjustment proceeds with incredible precision to give us a constantly clear image of the world.



5. Refraction Errors

The lens is situated in the center of the eye and is responsible for bending incoming rays of light so that they converge onto the retina and thereby stimulate nerve cells to produce a clear and accurate picture of the image being viewed. The process is called “refraction”

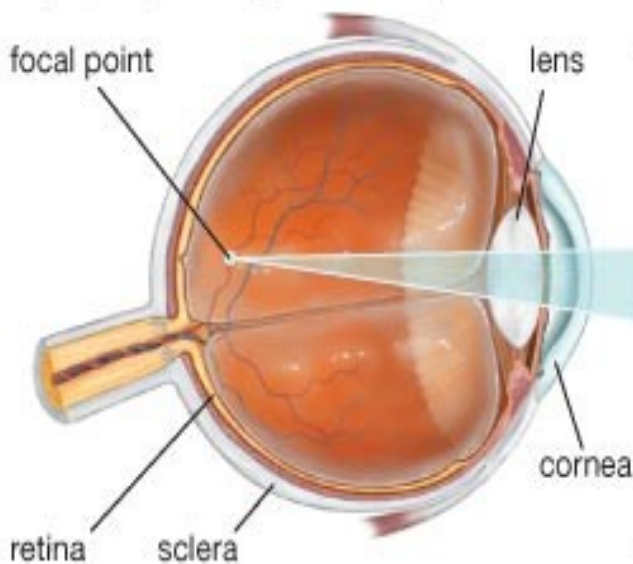
If the lens fail to focus light exactly onto the retina, the picture is blurred and this is called – **refraction error**. This may also occur because the shape of the eye distorts from a near perfect sphere, either elongating or shortening.

5.1. Myopia – Short Sightedness

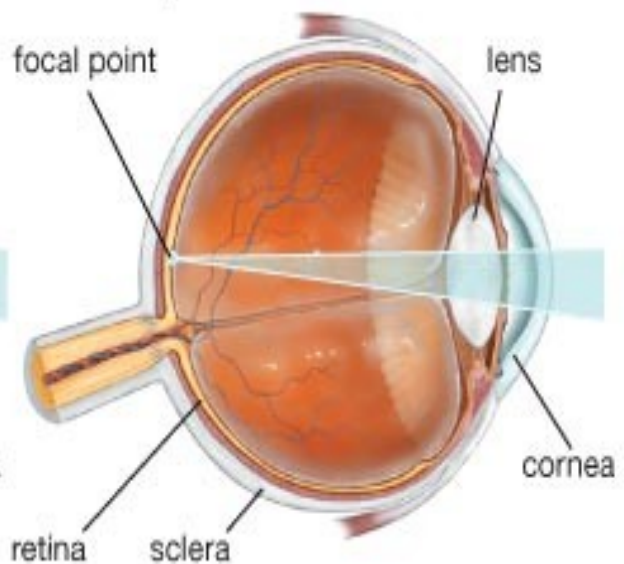
The lens is too thick and image falls short of the retina, resulting in an inability to focus on distant objects. Most common for young people.

In Myopia the ciliary muscles are constantly contracted, in spasm, preventing the lens from accommodating to distant objects. Spasm is caused by straining to see.

Myopia (nearsightedness)



Normal eye



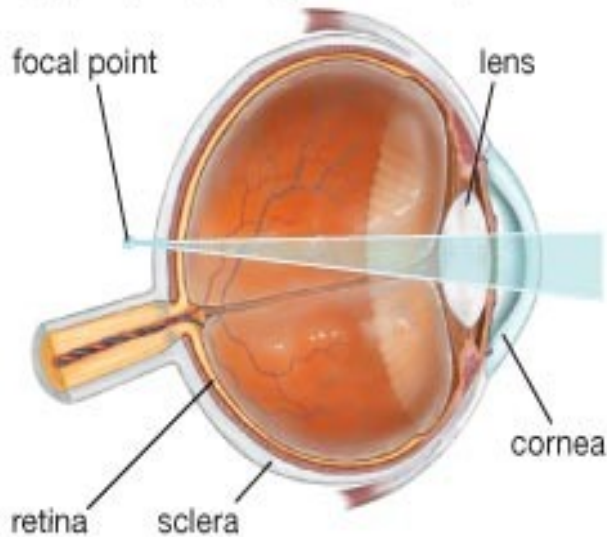
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5.2. Hyperopia – Long Sightedness

is the opposite of myopia – inability to focus on near objects. Hyperopia, specially in older age, many muscles weaken and so its difficult for the ciliary muscles to contract sufficiently to allow the lens to accommodate for near objects.

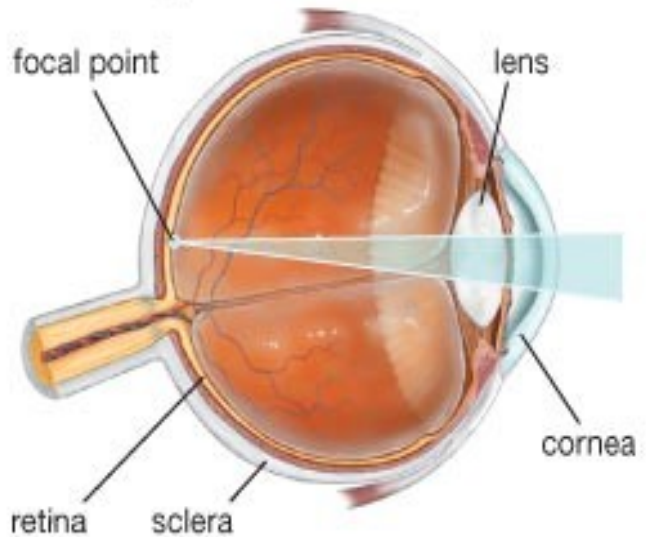
Its common for myopic eyes to get normal before they Hyperopia takes over.

Hyperopia (farsightedness)



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Normal eye



5.3. Astigmatism

In the case of “astigmatism,” one or more surfaces of the cornea or lens are not spherical but, instead, are cylindrical or toric. As a result, there is no distinct point of focus inside the eye but, rather, a smeared or spread-out focus. Astigmatism is the most common refractive error.



6. Other Eye Diseases

Some eye diseases are caused by another reasons. That means the disorder is not occurred by weaken ciliary muscles. Disorders could caused of any inflammation or infection (bacterial or viral) or genetic.

For following serious eye diseases is it necessary to consult an eye specialist and get some special treatment to cure the disorder.

An none treatment of such diseases could increase the disorder. Vision loss or total blindness are possible.

The Eye Exercises, which could treat Myopia and Hyperopia very well, are not used to treat such diseases.

Although, a proper healthy “Yogic Lifestyle”, with or without practice, will improve the general wellbeing and will cause an positive effect.

Glaucoma

Is a complicated disease in which damage to the optic nerve leads to progressive, irreversible vision loss.

Trachoma

Is an bacterial infection that causes conjunctivitis, irritating the eyes and creating a mucous discharge. Trachoma is the leading cause of the world's infectious blindness.

Cataract

In an eye with a cataract, the lens becomes cloudy. This clouding distorts rays of light and prevents light from being focused on the retina. This results in distortion of in one's vision. The lens of the eye is composed primarily of protein. Cataracts are caused by changes in the chemical makeup of the lens. With age, the lens becomes thicker and less clear.

Retinal detachment

Is a very serious eye condition that happens when the retina separates from the tissue around it. Since the retina can't work properly under these conditions, you could permanently lose vision if the detached retina isn't repaired promptly

Retinal artery occlusion

Is a disease where the flow of blood through the central retinal artery is blocked. This occurs a sudden acute, painless loss of vision.

Retinal vein occlusion

Is a common retinal vascular disorder. The small veins that carry blood away from the retina are blocked and cause variable visual loss. (trombosis)

Iritis

Is a painful inflammation of the iris of the eye. Iritis is a serious condition that, if left untreated, could lead to glaucoma or blindness.

Keratitis

Is a condition in which the eye's cornea becomes inflamed. This condition is often marked by moderate to intense pain and usually involves impaired eyesight. May cause feelings of scratching each time individual blinks.

Conjunctivitis

(is called pink eye or madras eye in India) is an inflammation of the conjunctiva (the outermost layer of the eye and the inner surface of the eyelids. It's commonly due to an infection or an allergic reaction.

IMPORTANT: it is not recommended to practice Asanas or eye exercises without any consultation of an eye specialist!

7. Correcting The Error

These distortions of eye function (Myopia, Hyperopia and Astigmatism) are so common today that we fail to even think of them as correctable by means other than glasses. Eyes needs glasses. Is a general valid opinion. Specially in the modern western world....

But is that really true?

Fact is, that it is possible to correct the tension and weakness of the refracting muscles of the eye.

We can look on two sides of glasses!

On one side, they could correct the symptom of the disorder immediately and improves the vision.

On the other side, the eyes will be dependent on the glasses and people will never be able to see without them.

Like many other modern treatments or medicines, glasses will cure only a short term symptom. The real origin of the disorder, the weak Ciliary muscles, will be totally untouched and, in cause of the dependence, loosing more and more their strength.

With the right series of exercises to relax and to strengthen, not only the muscles themselves, but also our control over these muscles.

Along with the exercises for the eyes, a health promoting lifestyle is necessary. (Yogic Lifestyle)

How we can treat short and long sightedness from the Yogic point of view?
There are Few simple ways to correct the error:

Spiritual Background:

eyes are related to:

Charka: Ajna Chakra

Prana: Udana Vayu and Kurma Vayu

8. Eye Exercises

These special eye exercises should be practiced regularly with patience and presence.

Do not expect instant cure or improvement. It takes years for the eyes to become defective, it will also take time, few months or more, before noticeable progress will be made. However, improvement will come, as it has to many people who have adopted a Yogic way of life and gradually reduced the power of their glasses.

Preparation:

Before starting, it is a good idea to splash pure, cold water onto the eyes a few times. Hold a little water in the palms above a water basin and splash it onto the eyelids. Do this about 10 times and then begin the exercises. This procedure will help stimulate the blood supply and generally tone up the eyes.

Contra Indications:

Those who suffer from major eye diseases or disorders (look page 9) should only perform eye exercises or yoga practice after consulting an eye specialist.

Practice notes:

Eye exercises should be performed one after the other in the sequence given. The series should be practiced in its entirety, once early in the morning and/or once in the evening.

The most important thing to remember during practice is to be totally relaxed. Do not strain as this will lead to fatigue and tiredness of the eyes. The facial muscles, eyebrows and eyelids should remain totally relaxed.

After each exercise the eyes should be closed and rested for at least half a minute. The practice of palming may be performed at this time. Before opening the eyes, look down (don't look straight) and open the eyes with gently blinks!

Glasses or contact lenses should not be worn performing the eye exercises.

Basic rules:

Sit in a comfortable position (crossed legs or Padmasana)

For older or stiff people a chair could be used.

Spine should be straight! (if necessary reduce the duration of the exercises)

Exercise 1

Palming (Basic, needed for further exercises)



Rub the palms of the hands together until they become warm. Place the palms gently over the eyelids without any undue pressure. Feel the warmth and energy being transmitted from the hands into the eyes and the eye muscles relaxing. The eyes are being bathed in a soothing darkness. Remain in this position until the heat from the hands has been absorbed by the eyes. Then lower your hands, keeping the eyes closed. Again rub the palms and repeat the procedure at least 3-5 times. After the exercise, start to massage your facial muscles smoothly, relax some time with closed eyes and open the eyes with gently blinking.

Benefits:

Palming relaxes and revitalizes the eye muscles, and stimulates the circulation of the aqueous humour, the liquid that runs between the cornea and the lens of the eye, aiding the correction of defective vision.

Practice note:

The benefits are enhanced if the exercise is practiced in front of the rising or setting sun. Be aware of the warmth and light on the closed lids. Never look directly at the sun, except for a few initial moments when it is just rising or when it is about to set.

Exercise 2

Blinking (Basic, needed for further exercises)

Sit with open eyes
Blink the eyes 10 times quickly
Close the eyes and relax for 5 to 6 relaxed breaths
Repeat the blinking 10 times quickly and then again close the eyes and relax
Repeat 5 times
→ Palming and relaxation

Benefits:

Many people with defective eyesight blink irregularly and unnaturally. This is related to the state of habitual tension in the eyes. This exercise encourages the blinking reflex to become spontaneous, inducing relaxation of the eye muscles.

Exercise 1 and 2 could be used as an exercise by its own, and/or as a finishing sequence of all other exercises. After the exercise, close the eyes, relax for some time. Use Palming, then open the eyes with gentle blinks...

Exercise 3

Up and Down Movement

Gently move your eyeballs up-down, up-down, up-down continue another seven rounds. Move your eyeballs smoothly and continuously. Try to avoid jerky movements and keep your head steady. Practice at your own pace.

Benefits:

Up and down viewing balances the upper and lower eyeball muscles.

Exercise 4

Sideways Movement

Gently move your eyeballs right-left, right-left, right-left, continue seven more rounds. Move your eyeballs smoothly and continuously. Try to avoid jerky movements and keep your head steady. Practice at your own pace.

Benefits:

Improves coordination of the medial and lateral muscles of the eyeball.

Exercise 5.1.

Diagonal Movement

Gently move your eyeballs right-up, left-down, right-up, left-down, right-up, left-down, continue seven more rounds. Move your eyeballs smoothly and continuously. Try to avoid jerky movements and keep your head steady. Practice at your own pace.

Benefits:

Improves the inferior and superior eye muscles.

Exercise 5.2.

Diagonal movement opposite direction

Gently move your eyeballs left-up, right-down, left-up, right down, left-up, right continue seven more rounds. Move your eyeballs smoothly and continuously. Try to avoid jerky movements and keep your head steady. Practice at your own pace.

Benefits:

Improves the inferior and superior eye muscles.

Exercise 6.1.
Rotational movement clockwise

Gently move your eyeballs to the left, down, right, up, in total 10 rounds. Move your eyeballs smoothly!

Constant pressure Palming – press constantly around the eyeballs with your palms. Inhale deeply and exhale completely. Do not press on the eyeballs. Relax your eye muscle completely.

Benefits:

Improves the coordinated activities of all the eye muscles

Exercise 6.2.
Rotational movement anti clockwise

Gently move your eyeballs to the right, down, left, up, in total 10 rounds. Move your eyeballs smoothly!

Constant pressure Palming – press constantly around the eyeballs with your palms. Inhale deeply and exhale completely. Do not press on the eyeballs. Relax your eye muscle completely.

Benefits:

Improves the coordinated activities of all the eye muscles

Exercise 7
Preliminary Nasikagra Drishti

Make a fist with the left hand, keeping the thumb pointing upward. focus both eyes on the tip of the thumb. Bend the arm and slowly bring the thumb to the nosetip, keeping the eyes focused on the tip of the thumb.

Remain for a few seconds with the thumb held at the nosetip and the eyes focused there.

Slowly straighten the arm, continuing to gaze at the thumb tip.
Practice 10 rounds.

Breathing:

Inhale as the thumb is drawn towards the nose. Exhale as the arm is straightened.

Benefits:

Improves the accommodating and focusing power of the eye muscles.

Precaution:

don't force to focus on the nosetip, it could cause headache and dizziness.

Exercise 8

Near and distant viewing

Stand or sit at an open window, preferably with a clear view of the horizon, with the arms by the sides.

Focus the eyes on the nose tip, (nasikagra drishti) for 5 seconds.

Then focus on distant object on the horizon for 5 seconds.

Repeat for 10 rounds.

Breathing:

Inhale during near viewing, exhale during distant viewing

Benefits: improves the accommodating and focusing power of the eye muscles. But the range of movements in these eye muscles is further increased.

Exercise 9

Shavasana

Relaxation

9. Mudras

Nasikagra Drishti

look eye exercise 7

Shambhavi mudra

is by itself a powerful redirector of pranic and psychic energies. It stimulates Ajna chakra, the third eye, and by stimulating this center of higher intuitive awareness, it allows us insight into a very potent factors at the mental and psychic levels which are causing refractive errors in the first place.



It relaxes tension by stimulation the optic center which is a powerful generator of alpha brainwaves, those waves which are associated with relaxation. By just crossing the eyes alpha waves are generated.

Shambhavi mudra leads us into meditative states and awakens inner vision, awareness of the spiritual dimension.

10. Pranayama

→ “extension of the prana or breath” or “extension of the life force energy”.

All kind of Pranayama variation have an positive effect on the general wellbeing and on the eyes.

Specially: Kapalabhati

cleaning of the cranial sinuses, works on the Udana Prana!

11. Meditation

like Pranayama exercises, all kind of Meditation will have an positive improvement on the wellbeing and on the mind level

Specially: visualization Meditation

(concentration on internal or external object)

12. Asanas

For Beginner

Surya Namaskara

Removes physical tensions, stimulate pingala nadi, supply us with extra physical energy and so help promote healing of the whole physical body.



advanced

Shirshasana and Sarvangasana

useful to promote circulation to the eyes!

Sihmasana – Lion Pose

Excellent Asana for the throat, nose, ears, mouth and the eyes.

Removes physical and emotional tension.

13. Drishtis

All Asanas in the own limit will have an general positive effect on body and mind. To work on the eyes specially, it's is possible to work with "Drishtis"

Drishti, or focused gaze, is a means for developing concentrated intention. It relates to the fifth limb fo yoga (pratyahara) concerning **sense withdrawal**, as well as the sixth limb (dharana) relating to **concentration**.

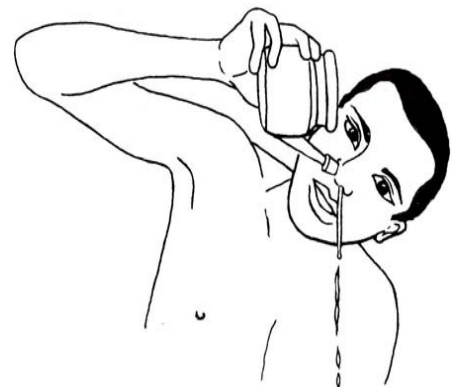
So, could be done in any Asana, bring the awareness to the eyes and try to focus very well.

14. Kriya

Jala Neti

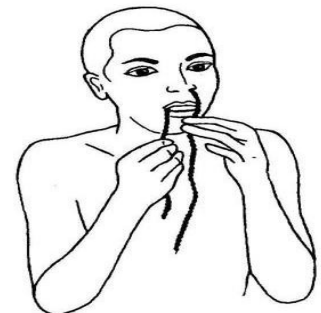
acts directly on the olfactory and ocular systems, affecting all the structures of the face via reflex nervous activity. I is particularly soothing and pleasant practice as well as being immensely practical.

It acts on Ajna chakra and awakens prana in the facial area, thereby reducing tension in all the facial musculature as well as in the whole body/mind complex.



Sutra Neti

Like Jala Neti but using a cotton or rubber string instead of water.



Amaroli

benefits the eyes especially when fresh midstream urine, which may be diluted according to individual needs, is dropped directly into the eyes.

Urine neti (diluted with water) may also be performed. If amaroli practice proves difficult, fresh water my be substituted instead.

Trataka

is a very powerful yogic shatkarma, which is especially useful in myopia.

Trataka is the best method of uprooting the habit of straining and staring, replacing it by gentle, controlled gazing. It acts on the whole optic system and steadies the turbulent and erratic flow of the neurotic, anxious mind.

Gazing on the flame of a candle!

15. Relexation

Yoga Nidra

is one of the most scientific methods of relaxation yet devised. In acts at the deepest levels of our being, reducing those tensions which cause most of our diseases and problems in life.

16. Diet

A proper healthy diet is never wrong!

But specially for eye related problems, following nutrition is appreciated

Vitamin A

Retinol, Retinal, retinoic acid and several provitamin A carotenoids
(Beta carotin is the most important)
carrots and apricots, sweet potato,
pumpkin, spinach, broccoli

Vitamin B2

Riboflavin
milk, cheese, leaf vegetables, yeast, (mushrooms) and almonds

Tryptophane

amino acid
milk, dates, cheese, eggs, sesame, chickpeas, sunflower seeds

Vitamin c

lemon, lychee, kiwi....



17. References

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18. Conclusion and Thanks

→ “Keep an eye on your eyes!”

and many thanks to:

- my lovely wife, Anna (Cat)
- my family and friends
- Teacher – Bharath Shetty, Yoga India
- Teacher – Omprakash Gaur, Aum Yoga
- and mother earth

for their support....

love, peace and happiness....

