Improving Vision Naturally

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Abstract: This article is designed to be used as a reference, and provides background information on the anatomy of the eye as well as pathophysiology concerning vision. It includes information on homeopathic intervention and proper nutrition to maintain and enhance vision. The categories of nutrition which have been addressed are nutritional supplements and herbs. The presentation will be a workshop of exercises including acupressure points, which are designed to improve vision and prevent what we generally consider to be the natural deterioration of our eyesight.

Although vision is considered by most persons to be the most cherished of the five senses, most of us do not do enough to preserve our sight because we have accepted the notion that our vision should deteriorate over time. After much research, I have concluded that we DO have power over this process of deterioration. Retaining our youthful eyesight requires maintaining a healthy lifestyle, as well as taking a few minutes per day to do some simple exercises.

It is important to note that in Chinese medicine visual disturbances are often equated with congested liver chi. Dark circles under the eyes indicate a malfunctioning liver. In addition to the energetic connection between the liver and the eyes, a healthy functioning liver is necessary for adequate digestion to provide the proper nutrition to support the eyes and allow for good vision. Balancing the energy in the liver is the first step in improving vision, regardless of the pathology.

A review of the anatomy of the eye is necessary to understand the pathophysiology (see Illustration 1). The eye consists of three layers. The outermost layer is comprised of connective tissue and forms the sclera, known as the "white of the eye". In the front the outer layer becomes the cornea, which is the transparent covering over the colored part of the eye known as the iris. The middle layer of the eye is the blood vessel enriched part called the choroid, which in the front forms the iris. The iris is a muscle which has a central opening known as the pupil. The pupil appears as a large black circle which varies in size as the iris contracts and expands to modulate the amount of light entering the eye. Behind the iris the choroid forms a muscular appendage known as the ciliary body. The ciliary body is where some of the fluid of the eye is produced. Behind the pupil lies another structure which should be transparent and is known as the crystalline lens. The ciliary body is connected to the lens by ligaments. Contraction of this ciliary muscle changes the shape of the lens which in turn alters the angle at which the light enters the eye. This process serves the purpose of directing the light so that it focuses on the back of the eye regardless of the distance from which an object is being viewed. The inner layer of the eye is known as the retina, and is located at the back of the eye. It is made up of the photoreceptors known as the rods and cones, named for their respective shapes. Their function is to turn the light waves into nerve impulses to be interpreted by the brain as visual images. The cones are concerned with daytime vision, central vision and detailed vision, and the rods are concerned with night vision, peripheral vision, and contrast. The cones are situated in a higher density in the central portion of the retina, and the rods are more abundant in the periphery. There is a central portion of the retina which is known as the macula that contains a high concentration of photoreceptor cells, especially cones. The central pit of the macula contains only cones and is known as the fovea centralis. (refs 1, 13, 20, 22)

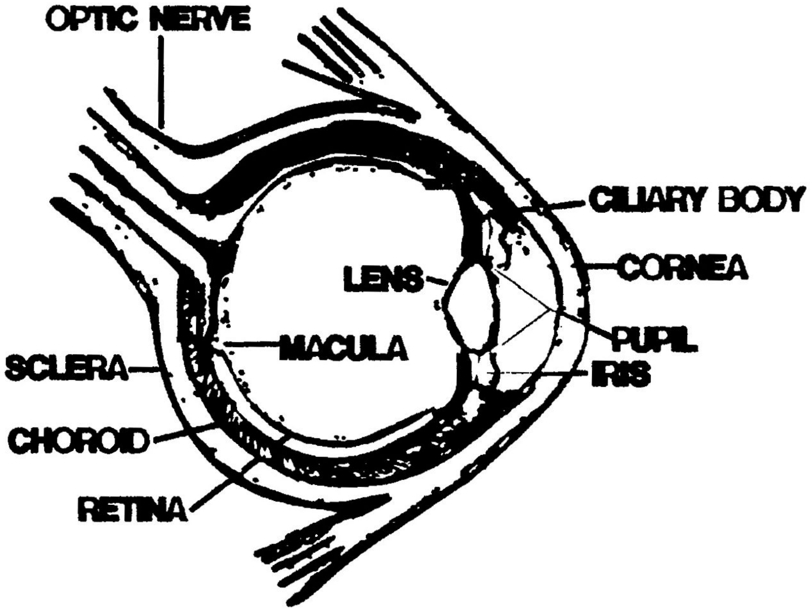

ILLUSTRATION 1

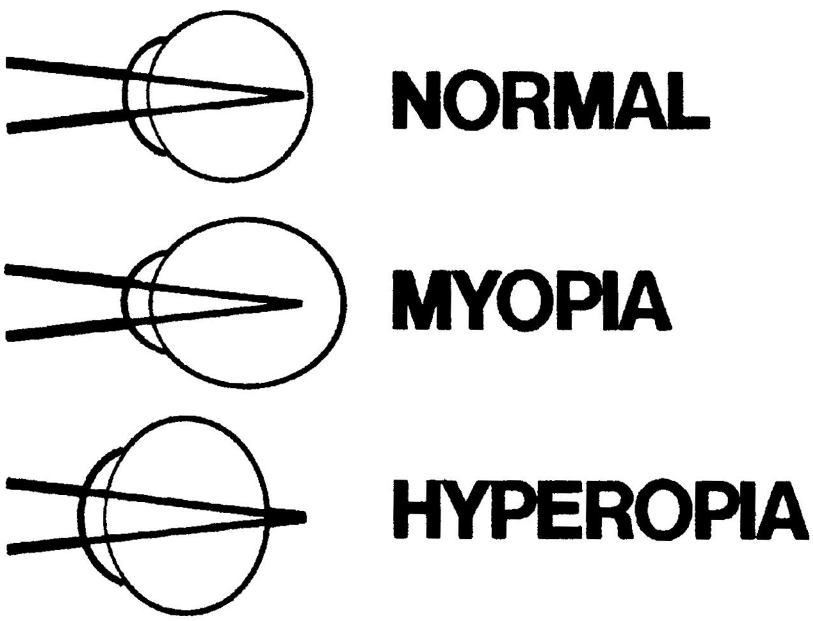

ILLUSTRATION 2

The measure of visual acuity is most commonly done with a Snellen chart, which is the familiar chart with the large E at the top. 20/20 vision means that you see from 20 feet away what a normal person would see from 20 feet. 20/30 vision means that you see from 20 feet away what a normal person could see from 30 feet away. There are persons with vision considered to be better that normal, such as 20/15. (ref 1)

The two most common visual abnormalities are **myopia** and **hyperopia** (see Illustration 2). Myopic persons can see well up close but not from a distance. This condition is also known as nearsightedness. It is caused by the eyeball becoming elongated, which causes the light to focus in front of the retina. According to Sussman (ref 20), myopia increases the likelihood of retinal detachments, cataracts, and glaucoma It is believed that myopia is caused by tense eye muscles which eventually distort the shape of the eye. Poor nutrition can make the eye more susceptible to the effects of these tense muscles. (refs 1, 20, 22)

Hyperopia, also known as farsightedness, is the opposite of myopia. This is a condition in which the light focuses beyond the retina. Persons who are hyperopic can see well from a distance, but not up close. Their eyeballs are flattened in appearance. Hyperopic individual are more likely to develop difficulty with accommodation, which is an inability to change the shape of the lens to assist in the focusing of light. This eventually will necessitate correction for both distant and near sight. It is also believed that tense ocular muscles leading to distortion of the shape of the eye causes this condition. (refs 1, 20, 22)

Visual disturbances can also be caused by a condition known as **astigmatism**. This is caused by an uneven curvature of the cornea, which leads to the rays of light from different directions entering the eye at various angles and therefore focusing at different places in reference to the retina. A small amount of astigmatism can be compensated for by the layer of tears over the cornea. More problematic cases can be corrected with lenses. (ref 1)

Presbyopia is a condition that often begins to occur in middle age and involves the loss of the ability of the lens to change shape. Changing the shape of the lens is necessary to focus the point of convergence of the light rays which enter the eye. It is generally thought that presbyopia occurs from a lack of proper nutrition to the lens. The lens contains no blood vessels, and relies on the ciliary body and aqueous solution (the liquid in the front of the eye) to supply it with nutrition. If the lens continues to deteriorate, cataract formation ensues. (ref 1)

Cataracts are by definition an opacity of the lens of the eye. They are caused by free radical damage to the proteins of the eye causing them to clump together. Traditionally, surgical removal of the lens is the treatment for a cataract. Sometimes an intraocular lens is inserted. Correction post cataract extraction can also be achieved through glasses with aphakic lenses or through contact lenses. The intraocular lens is shaped to either accommodate near or far vision, and the opposite is achieved through external corrective lenses. However, nutrition and homeopathy have been shown to not only prevent but to reverse cataracts. (ref 1)

Another condition of the eye which can gradually lead to blindness is macular **degeneration**. According to Abel (ref 1), the macula occupies only about 2% of the visual field, yet because it is so highly concentrated with cones it stimulates about half of the brain's visual cortex. This area is also known as the "yellow spot" due to the yellow pigment from carotenoids. Under the retina is a layer called the retinal pigment epithelium. Macular degeneration involves a degeneration of the macula and this layer beneath it. It is believed to be caused from an accumulation of metabolic wastes resulting from improper nutrition. The symptoms include wavy appearance to parallel lines, blurred vision, or a dark spot in central vision. Genetics is a factor in macular degeneration, but the disease process can be slowed considerably with proper nutrition. (refs 1, 13)

Retinitis pigmentosa is also a degenerative disease of the retina. It is usually hereditary and leads to a gradual loss of vision. It has been shown that increased cortisol levels (which are produced in the adrenals in response to stress) have been associated with retinitis pigmentosa, and that improvement is noted with administration of anticortisol drugs. Stress reduction is therefore a necessary component of treatment of this disease. This is not considered one of the diseases of old age, as it can be detected in young children as well. The compromised vision begins with the peripheral fields and progresses to include central vision. A cataract may also develop. Dietary supplementation for this condition has shown to be helpful. (ref 1)

Diabetic retinopathy is becoming more common as the population in America consumes more and more sugar. The rate of diabetes is on the rise and the age of onset is decreasing on the average. Diabetic retinopathy is caused by the deterioration of the blood vessels which begin to leak into the vitreous (the liquid in the back part of the eye). This free floating blood blocks the light from entering the eyes, casting shadows on the retina and causing large black spots in the vision. If there is inadequate oxygen to the eye, the body responds by growing new blood vessels which usually tend to be fragile and leak more. Sometimes the blood is absorbed without intervention. Other times this bleeding can lead to scarring, causing the retina to detach from the blood vessel rich choroid. This causes a permanent blind spot in the vision and the detachment has to be repaired surgically. Another surgical intervention for diabetic retinopathy is a vitrectomy. The indication for this surgery is when the vision is substantially impaired by the shadow casting effects of the blood. The surgery involves removing the vitreous from the eye and replacing it with a mild salt solution called normal saline. (refs 1, 10)

Adequate nutrition is absolutely necessary for good vision. One classification of nutrients that preserve sight is the antioxidants. These are vitamins and other nutrients which counteract the effects of free radicals. Free radicals are oxygen-containing compounds produced in the body and utilized by the body to sustain life. However, due to the configuration of the oxygen atom, even when oxygen is combined with other atoms there is a free floating electron in the outer shell. Electrons prefer to travel paired with another electron. These free floating electrons in the oxygen-containing compounds tend to gain partner electrons by scavenging electrons from healthy tissue, causing damage to the tissue. Antioxidants sacrifice electrons to these free radicals to prevent damage. The three vitamins that are considered to be antioxidants are Vitamins A, C, and E. (refs 1, 19)

Vitamin A is not only important to protect eyes from free radical damage, but has functions specific to the eye. In preventing free radical damage, it is recommended to both prevent and treat macular degeneration. Vitamin A is a primary nutrient for the rods which are concerned with night vision. It also is necessary for the production of tears, which serve to lubricate the eyes. Vitamin A is a fat soluble vitamin which means it is stored in the body, primarily in the liver. Fat soluble vitamins can become toxic in large doses. According to Dr. Abel (ref 1), a toxic level would be reached by taking at least 30,000 IU every day for a year. (refs 1, 13, 18, 19, 20)

The precursor to Vitamin A is **beta-carotene**. A safer way to assure an adequate intake of Vitamin A is to consume foods rich in carotenes. Other carotenes are also necessary nutrients for the eyes. The other two most important ones are **lutein** and **zeaxanthin**, which provide the yellow pigment found in the macula. This pigment serves to protect the macula from the effects of ultraviolet light. (refs 1, 19, 22)

Vitamin C has been found to be important to many aspects of vision. Vitamin C helps protect the lens from free radical damage and has been shown in a 1998 study done at Tufts University in Boston to decrease the rate of cataracts by 77 percent. It is also useful in building collagen which strengthens the walls of the blood vessels which nourish the retina and other parts of the eye. Vitamin C can be used to allow the cornea to heal following injuries. An optometrist from New Jersey named Dr. Ben Lane has found a correlation between low levels of Vitamin C and increased intraocular pressure. Vitamin C has also been shown by him to decrease the level of eye fatigue. In reducing free radical damage, it also helps prevent and treat macular degeneration. As a water soluble vitamin, Vitamin C is not stored in the body, and is readily excreted. In excess, Vitamin C can cause bloating, gas, and/or diarrhea. (refs 1, 18, 19, 20)

Vitamin E is a fat soluble antioxidant vitamin which is found in both the retina and the lens. One of its functions is to preserve the essential fatty acids in the cell membranes. It also has been shown to reduce the incidence of cataract formation and strengthen the blood vessels. Inadequate levels of Vitamin E leads to the reduction of the pigment in the retina, causing decreased visual acuity. Since free radical damage has been shown to be a contributing factor in macular degeneration, Vitamin E is also one of the recommended supplements to both prevent and treat this disease. (refs 1, 18, 19, 20)

Another classification of nutrients necessary to support vision is amino acids. These are the building blocks for proteins. The essential amino acids are not produced in the body, and therefore must be included in the dietary intake. (ref 1)

One of the most important amino acids to promote healthy vision is **taurine**. Since it can be produced in the body from cysteine, taurine is not considered an essential amino acid. It is found in abundance in the retina and is thought to protect it from damage from ultraviolet light. Taurine levels are found to be deficient in diabetics so it is hypothesized that low levels may contribute to diabetic retinopathy. It is also believed that age-related macular degeneration is at least in part due to taurine deficiency, and it has been shown that supplementation can improve this condition. Taurine is used at the Beechwold Natural Clinic where my practice is located in a nutrient intravenous solution formulated specifically for improving vision. (refs 1, 18, 19, 20)

Another amino acid which should be considered important for this topic of discussion is **N-acetyl-cysteine**, or **NAC**. This amino acid boosts the production of glutathione, an enzyme necessary for good vision. (refs 1, 19)

Enzymes are complex proteins produced in the body for the purpose of catalyzing biochemical processes. These act as the bodyís main antioxidants.

The most significant enzyme for vision is **glutathione**. It has been found to be abundant in healthy eyes, but deficient in the presence of cataracts. It has also been found to reduce the effects of macular degeneration. This enzyme is composed of the three amino acids cysteine, glutamine, and glycine. It is not recommended that the supplement glutathione be administered directly, but rather be obtained by consuming a number of nutrients which contribute to glutathione production. Those may include selenium, alpha lipoic acid, NAC (N-acetyl-cysteine), and Vitamin B-2 (riboflavin). (refs 1, 19)

A classification of nutrients also considered important for good vision is minerals. These are not produced in the body but are necessary for many processes that occur within the body. Although there are numerous ones which could be considered necessary for vision, only the most important ones will be presented.

Calcium is one of the minerals which contributes to healthy eyes. Calcium levels have been demonstrated to be lower in children with myopia, and increasing the intake can alleviate the symptoms. Not enough calcium can also lead to the presence of floaters and eye twitching. (refs 1, 19)

Magnesium is another important mineral necessary to maintain good vision. It has been demonstrated that supplementing with magnesium improves the vision of persons with glaucoma. Diabetics with higher magnesium levels are less likely to develop diabetic retinopathy than those with low levels. (refs 1, 19)

Selenium is important as a precursor to glutathione. Deficiencies in selenium have been shown to promote cataract formation. Selenium also helps prevent macular degeneration. (refs 1, 19)

Zinc is a mineral which has been demonstrated to be crucial in eye health. Zinc levels are found to be higher in the retina than in any other organ in the body. Deficiencies cause visual disturbances, and supplementation improves vision in persons with macular degeneration. (refs 1, 19)

There are several herbs that have been shown to improve vision. **Eyebright** is the most popular of these, and is considered the universal eye tonic. In cleansing the liver, it serves to promote clear vision and strengthens the eye. (refs 19, 22)

Dandelions can be used to improve either myopia or hyperopia. **Dandelion root tea** helps with seeing better from a distance, and **dandelion leaf tea** improves close vision. (ref 22)

Several herbs that help with night vision are **blueberries**, and **bilberry** and **raspberry** teas. Bilberry in combination with zinc and ginkgo has been shown to slow visual deterioration. Bilberry also improves accommodation in both day and night vision. **Parsley** improves day vision by supplying B-2 (refs 19, 22)

There are also several Chinese herbs used to improve vision. **Chrysanthemum**, **Chinese Lychii berries**, and **celosia seeds** all cleanse the liver and enhance vision. Chrysanthemum also clears floaters and aids in blurry vision. Celosia seeds help to reduce cataracts. (refs 1, 19, 22)

Homeopathic remedies are another natural treatment for eye disorders and visual disturbances. These can be multifunctional and will be listed in alphabetical order with effects pertaining to vision. **Calcarea carbonica** Sensitive to light. Dimness of vision, as if looking through a mist. Farsightedness. Easy fatigue of eyes. Cataracts. (ref 11)

Causticum-Drooping of eyelid (right). Weakness of eye muscles. Double vision, improves looking right. Sparks and dark spots before eyes. Objects look large. Cataracts with motor disturbances. (ref 11)

Magnesia carbonica-Black motes before eyes. Eyes feel large and sensitive to pressure. Cataract. Opacity of cornea.(ref 11)

Phosphorus-Sensitive to light. Eyes feel large and stiff. Inflammation of the choroid. Fatigue of eyes without much use. Pain in bones around eyes. Atrophy of optic nerve. Double vision due to deviation of the visual axis. Narrow field of vision. Green halo around candlelight. Sensation as if something pulled tightly over eyes, as if everything covered with a mist or veil. Black floaters. Patient sees better by shading eyes with hand. Letters appear red. Colored vision then migraine. Clots in retinal vessels and degenerative changes in retina. Eyes turned outward. (ref 11)

Silicea-Spotted vision. Objects appear pale. Aversion to light, especially daylight. Sharp pain through eyes. Cataract in office workers after suppressed foot sweat. Inflammation of the iris and choroid. Vision confused, letters run together on reading objects, as if in fog. (ref 11)

Sulphur-Inflammation of retina caused by overuse of eyes. Obscure vision like black gauze or motes before eyes. Halo around lamp. Objects seem more distant than they are. Opacities of vitreous. (ref 11)

A Touch for Health Balance will also assist in improving vision. For the sake of emphasis I would like to reiterate that BALANCING THE LIVER MERIDIAN IS A MUST. Since tense muscles contribute to myopia and hyperopia and stress is a factor in retinitis pigmentosa, a general balance with stress reduction techniques, (ESRs, metaphor work, or other emotional balances) is in order. A balance will improve digestion and assimilation of food which is necessary for proper nutrition of the eyes. Balancing also improves circulation and lymphatic function to enhance delivery of nutrients to the eyes and removal of wastes from the eyes.

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