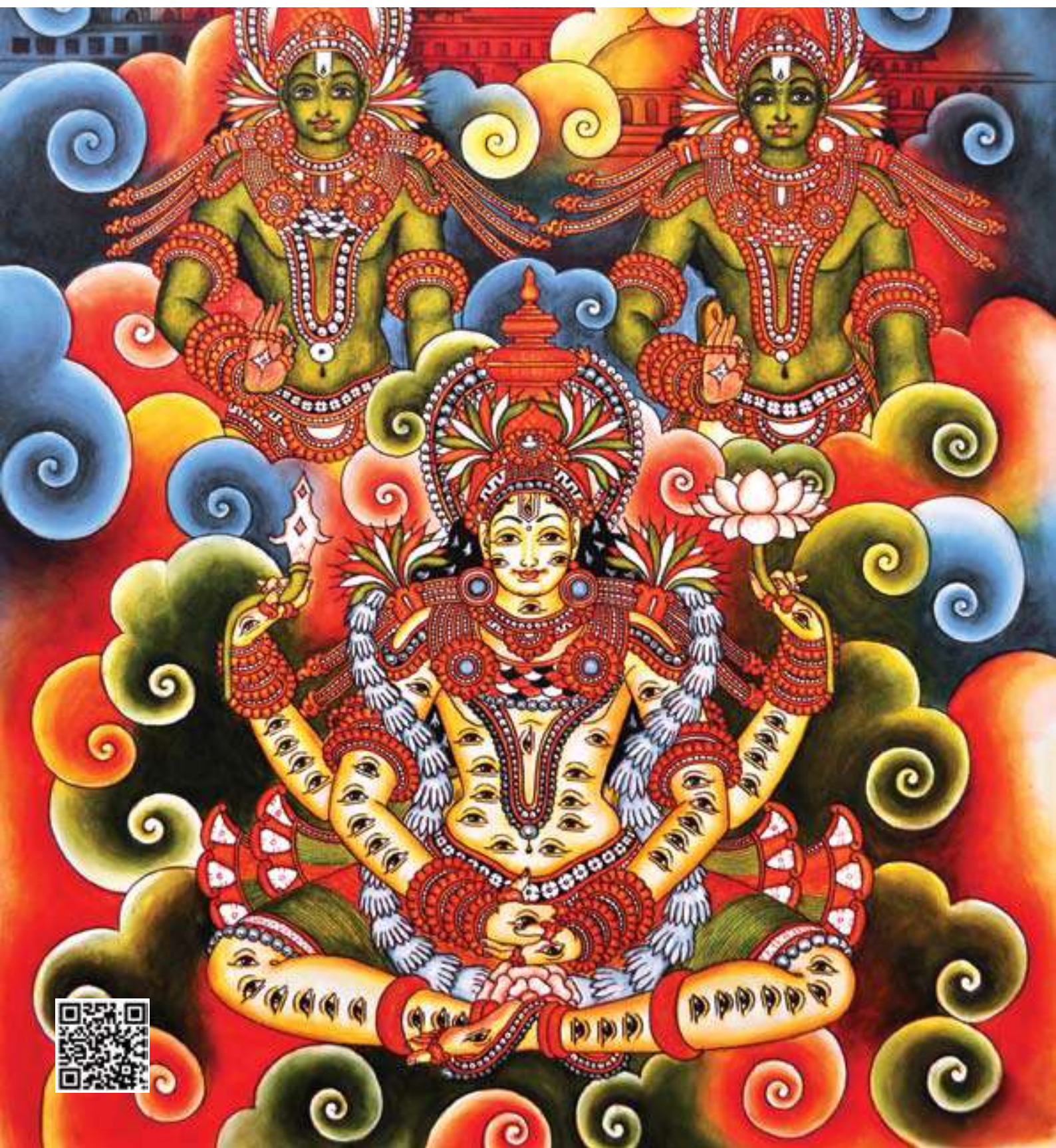


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Vol. 6, Issue 3&4 ■ Jul-Sep & Oct-Dec 2013



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यत्नः कर्तव्योजीवितेयावदिच्छ।
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पुंसामन्धानां विद्यमानेऽपि वित्ते

Man has to strive and preserve vision as long as he wishes to live. For a man who is blind cannot tell day and night apart and all the wealth and wisdom he gain become futile to himself and to the world.
A.Hr.Utt.13.97-98

Vision is the most cherished of all senses. Preserve it at any cost.

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Cover: The cover of this issue is a Kerala mural picturing the Asvin twins and Indra. Mythology has it that the wisdom of Ayurveda was imparted to Indra from the Asvins. Indra, then taught it to humanity through the sages like Bharadvaja. In this mural, Indra is depicted with a thousand eyes spread throughout his body. Legends say that Indra was cursed to have a thousand eyes by the sage Gautama for keeping a rowing eye on Gautama's wife, Ahalya. Eye symbolizes knowledge too. Indra was also known as a master of many sciences. So these eyes may also hint on those thousands of sciences that Indra knew about. As our main focus in this issue is eye health, we couldn't think of a better theme for the cover. Eyes can be also interpreted as a symbol of consumerism.

Art by Shyamnadh. shyamnadh@gmail.com

*We are shifting our transliteration scheme to ISO15919 which is an international standard for Indic scripts. For details, visit: en.wikipedia.org/wiki/ISO_15919

Diagnosis of Eye Diseases on the basis of Humors (tridoṣa)

This is an attempt to evaluate eye diseases on the basis of the three humors (*tridoṣa*). This is only a guideline. And here, for ease, textual information is used as examples. Western definitions and technical terms are used liberally along with āyurvedic ones to facilitate easy reading by all class of readers.



Dr. M. Prasad
MD (Ay.)

The technique to evaluate eye diseases on the basis of humors is simple. First of all, define the seat of a disease (*adhiṣṭāna*). Each seat will have functional predominance of some or other humor and very specific disease materials (*vyādhi dravya*). Then, look for the status of resident humor (*sthāni-doṣa*), existing abnormality (*vikṛti*), and status of disease materials. Resident humors are in different parts (*avayava*) of eye. Let's see how this method is applied.

Diseases of the lids (*vartma gata roga*): a model

This group accommodates diseases affecting the lids

(*vartma*) and lashes (*pakṣma*). Here the resident humor is primarily vāta. The disease materials are skin (*tvak*), blood (*rakta*) and flesh (*māmsa*). The involvement of the resident humor, i.e., vāta creates symptoms of mobility of the lids. Watering will not be a significant feature. The general dominance of pitta and kapha in diseases of the eye is well known. So there are chances for the manifestation of such disorders in the lid. Here, the disease materials support them well. When pitta has dominance, the predominating features will be burning (*dāha*), redness (*rāga*) and pus formation (*pāka*) accompanied by hot tears (*uṣṇa aśru-srāva*). Kapha, directly or otherwise, causes swelling (*śopha*) and itching (*kaṇḍu*). Then the tears will be cold (*śīta*), cloudy white (*śveta*), sticky (*picchīla*) and unctuous (*snigdha*).

A thorough examination of the lid margins (*pakṣma-maṇḍala*) and eyelashes (*pakṣma*) is an indispensable while

looking for lid abnormalities. They should be looked for loss of lashes, crusting, deformities etc. Pitta is the prime culprit behind itching of lid-margins and loss of lashes. Kapha and/or pitta when situated in blood create symptoms of water-logging (*kṛeda*) which is very specific to this particular location. As a generalization, the gravity of water-logging indicates the depth of involvement of blood. Blood, flesh, skin, pitta, and kapha together create a situation highly conducive for the formation of eruptions like stye (*kumbhīka*) and ulcers (*vraṇa*) which will be obviously associated with their characteristic pain-symptoms. Naturally such features are common in diseases of the lid. When kapha, blood and flesh work together, presentations

like glandular enlargements (*granthi*), polyps (*arśa*), and malignancy (*arbuda*) manifest. So they should be looked out for. The local status of blood gains high significance in the assessment of lid diseases as it can comfortably accommodate huge bulk of both denatured (*vikṛta*) kapha and pitta. The technique of abrading (*lekhana*) for attaining local purification of blood (*rakta-śuddhi*) is a result of this understanding. Blood makes the lid reddish or coppery.

This model of examination and assessment is adopted for the remain-

ing areas as well.

Diseases of the junction (*sandhi-gata-roga*)

Resident humors & Disease materials:

We may group the junctions into two groups. Out of the six junctions, the lid-lash junction (*pakṣma-vartma sandhi*), lid-scleral junction (*vartma-śukla sandhi*), lateral canthus (*apānga*), and medial canthus (*kanīna*) are having similar

pathological identity as eyelid diseases. So they

may be approached in the same way as we discussed already.

The limbus (*śukla-kṛṣṇa sandhi*) is in tune with the sclera (*śukla-maṇḍala*) and the irido-pupillary margin (*kṛṣṇa-dṛṣṭi sandhi*) is not an independent seat of diseases normally. That can be regarded as a part of cornea. These two may be discussed later.

Different types of secretions (*srāva*) make the former set unique and the type of secretion decides the humoral status. It

is watery in vāta, sticky and thick in

kapha, hot and coppery in blood and pitta, and purulent in trihumoral vitiation with blood (*sarakta-sannipāta*).

Diseases of white of the eye (*śuklagata roga*)

Resident humors are vāta and kapha primarily, and disease materials are skin, blood and bone tissues. The way in which a disease progresses through the sclera (*śukla-maṇḍala*) is very much comparable to the progress of vāta-śonīta in superficial (*utthāna*) stage to severe (*gambhīra*) stage. Basically the place is not prone to many pitta diseases. So the general threat of pitta vitiation is minimal. And generally all the diseases here show comparatively good prognosis. But when a pitta vitiation sets in, the blood gives its support and the disease can be seen to progress to the deeper levels generating symptoms of high intensity. Primarily, the humor pollution will be limited to the skin and later, given a chance, ascends to the higher tissues. The pitta vitiation affecting the skin is comparatively minor in presentation and tends to recede by simple interventions.

The involvement of blood is marked by the presence of red streaks of congested blood vessels. This later advances to generalized redness and may be accompanied by symptoms like severe pain and burning sensations (here the comparison with vāta-śonīta is more significant). This blood-based vitiation may advance to bone tissue causing severe pain-symptoms along with other symptoms of blood vitiation. In advanced stages, the pain will be so severe that the eyes cannot be opened and severe photophobia may manifest. The extent of tissue vitiation may reach





extreme levels resulting in the perforation of the globe.

When kapha is the dominant humor, painless swellings of different structures are resulted. It creates a sensation of foreign bodies and also a baggy appearance. As on lids, itching (*kaṇḍu*) is not a common feature. Various types of pterygium (*arma*) are common in this location. They all are basically of kapha origin and confined to conjunctival layer initially. The specific diagnoses of pterygia are based on the association of kapha with other elements.

The sclera area (*śukla-maṇḍala*) may reflect systemic morbidity of different forms. *Suktikā* is such a condition.

Diseases of black of the eye (*kṛṣṇa-maṇḍala*)

Resident humor is vāta and the disease materials are skin (which is multi-layered

Natural prevalence of humors in eye:

Lids (*vartma*): vāta

Junctions (*sandhi*): differ according to structures

Sclera (*śukla*): primarily vāta and kapha

Black of the eye (*kṛṣṇa*): vāta

Visual areas including retina (*dṛṣṭi*): all 3 humors have their role

Whole eye (*sarvākṣi*): all 3 humors have their role

commonly referred to as strata (*paṭala*) and blood. Ulcers (*vraṇa*), resulting in the opacity of this *maṇḍala* (partial or total) with or without pain-symptoms and the resulting visual debility are the major features. Most of the conditions resemble ulcers explained in Śalya-tantra in presentation and management. In a case of (*savraṇa-śukla*), the humor predominance can be understood by keen observation. Vascularization (*pannus*) in the outermost layer of the skin (*tvak*) followed by opacity

in deeper layers is indicative of a trihumoral vitiation with blood (*sarakta-sannipāta-duṣṭi*). Here the examination may require special instruments for magnification of the field. At this stage the symptoms like pain, burning sensation, coppery tears, and light-intolerance will be at their highest intensity. Bulges or protrusions on the surface make the layer hazy and visually compromised. Here pain-symptoms will be severe. And this indicates a bad prognosis. Prolapse of iris (*ajaka*)

is an example.

Diseases of the visual layer (*dṛṣṭi*)

Dṛṣṭi is a complex formation with multiple layers of different organelles (*avayava*), having different grades of involvement in the functional integrity of the organ. This is well-observed by the authors like Suśruta. Here the humors involved are all the three, and the disease materials are body fluid (*rasa*), blood, flesh, fat and bone. The central nervous system (*prāṇa-manovaha srotas*) should be mentioned as an additional substrate (*āsraya*) of diseases here. Authors designate the disease materials of *dṛṣṭi* as strata (*paṭala*), having representation of the above-mentioned five tissues. Diseases of this system are characterized by visual symptoms like dimness and distortions, most often progressive, ending up in blindness. *Timira-kāca-liṅganāśa* is the ideal representative of this group. Pain is not a feature of diseases of *dṛṣṭi* (exemption: *gambhīra*). The signs and symptoms of this system need more detailing.

The initial, non-specific features include dimness of vision, floaters, flashes & flickers, field-defects (may be identified objectively) and day/night blindness (may be identified objectively).

Later on, humor-specific features manifest, which should be carefully looked for. The objects around will be seen by the individual with humor-specific hue. It will be reddish brown in vāta, Yellow/blue/indigo in pitta, pearly in kapha, bright red in blood and a mixture in trihumoral. As the stage changes, specific tinge of color appears at the visual

system (*dṛṣṭi maṇḍala*). They are reddish brown (*vāta*), yellowish/bluish/coppery (pitta), pearly white (kapha), bright red (blood), or multiple colors (trihumoral). Here it should be borne in mind that examining with a pointed torch might mask these signs. These are observations in normal day-light. Other humor-specific features are as follows.

Vāta

Broken/punctured/distorted images, misjudging of depth and distance, less-illuminated and/or dark patches in the field, and flashes of light.

Pitta

Loss of vision which may get corrected spontaneously (*parimlāyi*), flickering light, haloes/aura, day-blindness (reversible or permanent).

Kapha

Seeing clouds all around, oily vision, difficulty to see small objects, floor looks water-spilled, night-blindness (reversible or permanent).

Blood

Smoky images

Trihumoral

Scattered images, distortions of various sort: diplopia, polyopia etc, permanent progressive, light-blindness.

All these symptoms are progressive.

The advanced stage of blindness (*liṅga-nāśa*) is characterized by severe deterioration of vision to a level of just PL or even less. Then, in vāta, there will be clear reddish brown discoloration of the visual layer and the shape of the layer

may be distorted. In pitta, the color of the layer will become dark blue. In kapha it is prominent pearly white and in blood, bright red or black. There can be milder forms of disorders where the symptoms may be incomplete, mild and/or delayed, the reason for which is explained in the basic principles. Anyway, the standard design of presentation will not change in diseases of the visual layer. When the humoral vitiation is confined to the CNS (*prāṇavaha-manovaha srotas*), there will not be any specific signs on examination, but the visual compromise will be severe. Here the prognosis is bad.

It should be admitted that the diagnosis of visual layer is more based on inference (*anumāna*) i.e, carried out by interrogation (*praśna-parikṣa*). But, there are many sophisticated techniques and tools available today which provide better access to visual layer. Actually, most of the modern ophthalmic diagnostic tools are targeting retina. So these possibilities may be explored to the best level for making the examination of visual layer more comprehensive.

Diseases of the eye-proper (*sarvākṣi-roga*)

Here all the three humors are involved. Disease materials are skin, body fluids, blood, flesh, fat, bone and channels (*srotas*). The role of blood is very crucial. Pain is an important feature. There can be partial or total, temporary or permanent visual debility. Diseases of the whole eye are ideally represented by epiphora (*abhiṣyanda*), a term which denotes the disease as well as the patho-dynamics (*samprāpti*). The patho-dynam-

ics is all-pervasive and progressive in nature generating signs and symptoms which are neither confined to a single location of eye nor to the eye alone. The generalized or preliminary signs and symptoms of this patho-dynamics are hazy vision, foreign body sensation, watering, itch, membranous surfaces/ coated feel, heaviness, burning, pain, red eye, dirty sclera, swelling around, and difficulty to move the eye.

In the specific picture of epiphora, there will be specific features suggestive of specific humors.

Vāta

Persistent eye pain with fluctuating intensity, temporal one-sided headache, puffed up nostrils, mild/ no swelling around eye, no significant watering, mild restriction of lid-movements, feel of creeping insects, bulged out feel, and minimal visual defect.

Pitta

Profuse watering, red burning eyes with swollen conjunctiva, yellow hue seen all around, swollen lids with bluish discoloration (cyanosis).

Kapha

Numb eye with swelling, preference for warmth, itch, sleepiness, loss of appetite, minimal pain, and thick, profuse discharge.

Blood

Features of pitta, engorged red vessels and coppery tears

Glaucoma (*adhimantha*) is a humor-specific stage of the

disease which is flag-marked by the presence of permanent excruciating pain, severe headache of the same side, and drastic deterioration in vision. Specific humors are identified by the following features:

Vāta

Excruciating eye pain, severe headache (one-sided) no redness/ watering or discharge; and progressive loss of vision.

Pitta

Dark red-to-brown color of eye, swollen lids with reddish tinge, severe pain and headache (that the patient may become unconscious) and sudden fall in vision leading to blindness.

Kapha

Pronounced swelling of conjunctiva with foreign body sensation, floaters: seeing grains and threads, head ache, puffy nostrils and progressive blurring of vision.

Blood

It is marked by severe pain and redness, severe headache, blood-tinged tears, lightning and flashes, redness around the eye and rapid fall in vision. As told earlier, pain is a remarkable feature here and this is explained by the interaction between blood and vāta. Here, there is very close comparison between the patho-dynamics of *vāta-śoṇita* and *abhiṣyanda/ adhimanta*.

There can be diseases under the category of whole eye with milder forms of manifestations. But they all basically come under the same mode of pathology of

abhiṣyanda. Such diseases are having better prognosis in general and the visual debility which they generate is reversible.

There can be situations where a disease starts on a particular location, but on a chronic run it spreads to the whole eye. Many of the chronic inflammatory eye diseases (*pilla roga*) are of this category.

The strong involvement of blood creates situation which is comparable to ulcers. And here, general management of ulcer is applicable.

Vāta can generate wide-spread facial pains and they should be assessed thoroughly.

Care should be taken while a disease of eye-proper is approached. There are many similar conditions which need logical exclusion from the list of diagnosis. For example, the vāta-epiphora needs careful differentiation with hemicranias (*ardhāvabhedaka*) and headache (*śiraśśūla*) caused by *udāvarta*.

So, what we have tried here is to make an attempt to diagnose diseases of the eye on the basis of humors. It is easy to present the concepts. But, of course, practicing need not be that simple. I do not think that all general practitioners can start practicing ophthalmology eye diseases. It needs continuous learning and practice. But every practitioner can gain expertise to identify and diagnose a clinical situation with this approach. □

Dr. Prasad is the Director & Chief Physician of Sunethri Ayurvedashram & Research Centre, Thrissur. He recently won the Ayurveda Pracāraṇ award by Ayurveda Medical Association of India for his efforts to propagate Ayurveda. sunethriayurveda@gmail.com

Śāstra-mathanam (churning of science) is a discussion program conducted at Kerala Ayurveda Hospital, Aluva on 1st, 2nd and 4th Tuesdays, every month. Paḍmaśrī Dr. K. Rajagopalan MBBS, DAM, FAIM is leading the discussions. Doctors and Scientists of Kerala Ayurveda Limited participate in the discussion.



Śāstra-mathanam

On common Diseases of the Eye

In this Śāstra-mathanam, Dr. Rajagopalan narrates the salient features of major eye diseases mentioned in Ayurveda. He also shares his experiences and experiments on managing these conditions. This will enable us to make precise diagnoses and sharper treatments.

Eye diseases are mainly due to the humor pitta. In *Aṣṭāṅga-hṛdaya* Uttarasthāna 8th chapter, the general pathology of eye diseases is explained as follows: "Humors aggravated

by unwholesome things mentioned in the chapter 'Etiology of All Diseases', especially by things which are unwholesome to the eye, mostly accompanying pitta, spread upwards through blood vessels, depend on the

organ eye and cause diseases in the lids, junctions, white circular area, black circular area, pupillary area or all the eye." Here the 'unwholesome things to the eye' (*acaḅṣuṣya*) is explained as food causing burning sensation (*vidāhi*)



etc. by Nimi, the ruler of Videha. This is mentioned in Kairali commentary of Aṣṭāṅga-hṛdaya. Since it is mentioned that the humors migrate upwards through the veins, we should understand that the trouble begins in the G.I. Tract. Again, since the predominance is for pitta, the treatment of choice is purgation. For this, the powder of turpeth (*trivṛt*) may be used to produce mild purgation. As per Kairali, this is mentioned in Nimi-Tantra, an extinct book on the diseases of head and neck. The following are some eye diseases and their management as given Aṣṭāṅga-hṛdaya Uttar-asthāna from 8th chapter to 16th chapter.

Diseases of lids (*vartma roga*)

The first disease mentioned in the diseases of lids is *kṛcchronmīla* where there is difficulty in opening the eye on waking up. The humor involved is vāta. It is not a serious condition. Here there is feeling of dust in the eye.

Another disease where there is the feeling of sand particles in the eye is *sikatā vartma* (= sandy lid). This is caused by the three humors and blood.

A more serious condition of the lid is *pothakī*. This is an important case. There are small white and dense mustard like eruptions in the conjunctiva with sticky secretion due to kapha. This is a lingering disease and is correlated to trachoma. It was very common formerly. Now that the antibiotics have arrived, the incidence has come down. Modern doctors used to abrade the lesion with copper sulfate stick. Our treatment is also abrading (*lekhana*). The disease causes many complications. As the hard

lesions abrade the cornea, corneal ulceration may develop subsequently causing corneal opacity and blindness. The disease may also cause scar tissue formation in lid causing entropion where the lashes prick the cornea and cause corneal ulceration, opacity and blindness. Pannus (production of new blood vessels) also will develop on the conjunctiva. As the disease is lingering it is included in the 18 chronic inflammatory diseases of the eye (*pilla-roga*) by Ayurveda. Once an eye disease has reached the chronic condition i.e. the *pilla* stage, the treatment is the same

There are many Keralite books on eye diseases. Some treatments not mentioned in classics are mentioned in them. The small medical pouch applied on eye (*tazhi, takazhi* in Malayalam) is an example. There are also coating which contain the white of egg. Mukkādi puram-ṭaṭa (Triphalādi viḍālā) is a very useful Keralite preparation.

irrespective of the disease. To the allopath two major diseases of the eye were glaucoma and trachoma. Here glaucoma comes under the *adhimantha* group of eye diseases.

Another important disease in Ayurveda is *anjjana piṭakā*. It occurs at the middle portion or the end of the brim of the lids. This is a type of stye. It is an inflammatory swelling of the follicle of the eye lash. The swelling is small and is of the size of a green gram. It is coppery

in color and is caused by blood. There will be itching, heat and pain at the stye. Stye or hordeolum is of two types. H. externum and H. internum. The inflammation of the sebaceous gland of the lash is H. externum. H. internum is acute purulent infection of the meibomian gland. This is mentioned as *kumbhī* in Ayurveda. In the case of external stye we may give an eye wash with decoction of the three myrobalans (*triphalā*) and apply Nārikela-anjjana (*iḷanīr kuzhambu*) as collyrium.

Next is *kukūṇaka*. It is rare nowadays. It occurs only to infants during the eruption of teeth. The eye lids will be swollen, watering, red colored and there will be photophobia. The child cries and rubs his eyes. There will be pain in the ears too.

Pakṣmoṇarodha is an important condition. Modern medicine describes two conditions of the lids entropion and ectropion. In entropion the lid margin is turned inwards because of the constriction of the lid and the lashes prick at the eye. In ectropion the lid is everted and the palpebral fissure is exposed. This may cause dryness and irritation to the eye. Both the conditions are to be corrected by surgery. In Ayurveda also surgery is mentioned for *pakṣmoṇarodha*. In this sometimes additional rows of lashes will also occur. The in-turned lashes are to be removed by plucking. A collyrium of ferrous sulfate in the juice of holy basil is to be applied. *Iḷanīr kuzhambu* and *Kanaka-tāmrādi-varti* etc. also could be used.

Another disease is *vartma-alaji*. It occurs towards the internal canthus (*kanīnaka*) as a swelling and opens outwards.

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The lesion swells frequently with pus and drains outwards through an opening. This is nothing but dacryocystitis. It can be treated with medicines as well as surgery. There are cases that linger with pus even after surgery. It is like a fistula. In such cases we have to treat with medicines for fistula. Powders containing china root (*madhusnuhī* = *Smilax china*), Guggulu-panjca-pala etc. can be given.

Lagaṇa is pale gland like swelling with very less pain, but with itching and is the size of a Chinese date or a little lesser than that. This is chalazion. This is expressed out with a special forceps (chalazion forceps) with one blade as a ring. Here application of seedless fruit of chebulic myrobalan (unripe fruit) made into a paste with honey may be applied. The paste can be kept without preservatives for long. If it dries up some more honey may be added to get the desired consistency. Honey is like a blade as it has cutting (*chedana*) property.

Diseases of the junctions, white and black of the eye (*sandhi-sitā-asita roga*)

In this context, Epiphora (*jalāsrāva*) is mentioned first. It is a disease of the lachrymal gland. In this there is continuous overflow of tear from the eye without pain. Watery tear is flowing from the internal canthus provoked by vāta. The condition may also occur in many diseases. Lacrimation is the term used to describe excessive secretion of lachrymal gland and the term epiphora is used when the secretion is normal but the channel of outflow of tear from the conjunctival sac is blocked so that there is overflow of tear.

Next is a disease due to the deficiency of vitamin A. This is called *śuktikā* and is due to pitta. There will be spots on the white of the eye with yellow, dark, or blackish tinge. These spots are called Bitot's spots. There may be diarrhea and fever along with this. This is the xerosis of conjunctiva. The condition is rare now. We use *jātimukulādi*, *candanādi* or *kanaka-tāmrādi varti* for the disease. *Kanaka-tāmrādi* is reserved for serious cases.

Śirolpātām is a disease of sclera due to blood. There will be severe pain and red lines on the sclera. There will be sensation of coating, swelling, lacrimation and redness. There are two conditions – scleritis and episcleritis. The etiology is not confined to eye only. There are other systemic causes. Steroids are the only choice of modern medicine. The continuous use of steroids is hazardous. In

Ayurveda we have better options. Rheumatism is a main cause for it. Here is the relevance of ayurvedic doctors. Rheumatism, T.B., syphilis, menstrual disorders etc. cause the disease. First find out the exact cause and treat for it. We can give our decoctions for rheumatism. *Holostemma (jīvanti)* is a drug used for eye diseases. But I have not tried it in this disease. We have to try it. Decoction of *tinospira (guḍūci)* can be tried.

Next disease is *sirā-ṭīṭakā* which is correlated to phlyctenular kerato-conjunctivitis. This occurs at the limbus i.e. the junction of the cornea and sclera. A phlyctena is a small vesicular lesion. There will be burning sensation and foreign body sensation. There will be veins around the phlyctena. The phlyctena may be of the size of mustard. This may occur in children as well as the old.

Immediately tests for T.B. are to be conducted especially in the case of children. If it is positive simultaneously medicines for T.B. also are to be administered. That is important. It may occur in many other infections. It can occur even without infections. *Candanādi varti* mentioned in *Bhaiṣajya-ratnāvalī* is good for the disease. It is administered with breast milk or milk.

Next is *kṣata-śukḷa* or corneal ulceration. It was very common during the harvest period due to threshing of paddy. Paddy seed will strike the cornea and ulcerate it. The advent of machines for threshing has reduced the incidence considerably. The paddy injury will be very small but severely painful. Only an expert can find out the lesion. The causative humor is pitta. It will cause pricking pain, lacrimation and redness. There will be discontinuity of the corneal

epithelium or even deeper layers. The black of the eye will appear like a ripe black plum (*jambū*) slightly depressed (saucer shaped). The same disease is called *vraṇa-śukḷa* by *Suśruta-saṁhitā*. The disease is difficult to cure even if it affects only the first layer. But can be cured. In the commentary it is stated that two diseases *timira* and *vraṇa-śukḷa* are mentioned to affect the strata (*paṭala*) of the eye. In *vraṇa-śukḷa* the strata are to be counted from outwards to inwards. On the contrary in *timira* they are to be counted from inside to outside. If the disease also affects the second layer it is manageable but incurable (*yāpya*). Here there is severe pricking pain and the black of the eye will appear as though punctured with needle. If the third layer is also affected it is untreatable and the lesion will be surrounded by small secondary ulcers. Only three

layers are mentioned in Ayurveda, but modern anatomy has identified five layers.

If the disease advances, the iris prolapses through the puncture and it seems like the dung of goat. It is called *ajakā* in Ayurveda. Still further the condition called *staphyloma* is generated. It will be fierce in appearance. Here is herniation of sclera or cornea with uvea included. In our classics it is mentioned that there is fluid collection in the herniated part and it should be tapped with needle from side. Simultaneously the prolapsed part should be pressed with thumb to position it back. The eye should be filled with liquefied animal fat (*vasā*). The ulcer should be packed with the powder of cow's meat and bandaged. Such procedure is mentioned in two places in classics. The other context is abdominal surgery. After seven days the bandage can be



Laser toys might damage vision

“Bang!! Bang!! Pow! Pow! Pow!”

That was your naughty five year old, who had just got a toy gun for Christmas.

It is fun to watch these kids play with their sci-fi inspired laser guns with shrilling audio and brilliant lights. Yes, we all know that the noise is outright annoying after a while, but what about the lights? Are they okay? Research shows they may be more harmful than we think.

According to a study recently released in the online journal of the American Academy of Ophthalmology, exposure for even a fraction of a second to high-powered blue handheld laser devices can cause serious eye injuries.

The U.S. Food and Drug Administration

have released safety notifications to the public about the risk of injury from handheld lasers with an output power of more than five milliwatts.

The natural protective mechanisms of the eye such as the blink reflex are ineffective against these lasers, and severe retinal damage may occur, even after momentary exposure.

Studies have also shown that blue lasers are more likely to cause retinal injury compared with green or red lasers. Yet, blue laser devices are sold widely on the Internet, which resemble laser pointers with lower wattages but actually have an output power of up to 1200 milliwatts.

So, when you are shopping for a good toy for the tiny 'commando', do have an eye on eye care and avoid extremely bright lasers.

removed. After removing the bandage unctuous collyria are to be applied. Anyhow, today this treatment cannot be done. Hence the case should be referred to an ophthalmic surgeon for operative management.

Next is *sirā-śukla* or pannus. [Pannus is a fibro-vascular proliferative response occurring in the cornea and conjunctiva due to Chlamydia trachomatis.] It is formation of small new blood vessels in cornea and conjunctiva. Pannus may occur in many diseases. According to Ayurveda it is caused by blood and three humors and if the tear is thick it is difficult to cure.

Pākātyaya śukla is a later stage of corneal ulceration and there is collection of pus in the anterior chamber. It is adherent leucoma [This is also correlated with hypopyon.] There will be severe pain and watering.

There are many Keralite books on eye diseases. Some treatments not mentioned in classics are mentioned in them. The small medical pouch applied on eye (*tazhi, takazhi* in Malayalam) is an example. There are also coating which contain the white of egg. *Mukkādi purampaṭa* (Triphalādi viḍālā) is a very useful Keralite preparation.

The *Jāti-mukulaḍi varti* is of two types. One is made with jasmine buds, rock salt, deodar and dry ginger by grinding with supernatant liquid of toddy (*prasannā*) and is used in itching and edema. The famous *Jāti-mukulaḍi varti* is another. It contains jasmine buds, lac, red ochre and sandalwood. This clarifies blood and pitta and heals the corneal ulceration. The classical treatment of corneal ulceration is to give ghee medicated with

Usually cataract is referred to as *timira* by laymen. It is not scientific. Cataract cannot be correlated exactly with *timira* which is only the first stage of cataract.

the three myrobalans (*varā-ghṛta*) modulated according to the humor involved. If pitta is predominant bloodletting, irrigation etc may be done. Ghee prepared with decoction and paste of turpeth, processed thrice repeatedly, is to be given orally. Bloodletting may be by venesection or leeching. Venesection is outside the eye and leeching can be performed on the eye. Irrigation (*dhārā*) is performed with a decoction of Indian crocus (*utpala* = *Kaempferia rotunda* Linn.), fritillary (*kākoḷi* = *Fritillaria roylei* Hook.f.), raisins, licorice and giant potato (*vidārī* = *Ipomoea mauritiana* Jacq. = *I. paniculata* R. Br.) with goat's milk and sugar. If goat's milk is not available decoction in water will do. On subsidence of redness, pain and watering further abrasive collyria may be used. *Jāti-mukulaḍi varti* and *Danta-varti* are mentioned in this context. *Tamāla-patrādi-varti* also is mentioned here. *Jāti-mukulaḍi varti* is readily available in market. Others are not. If *Kanaka-tāmrādi* is available it may also be used. *Candanādi* also can be used.

Pterygium or *arma* is another common disease. [By definition pterygium is a thick triangular tissue that extends medially from the nasal border of the cornea to the inner canthus of the eye. Different types of *arma* are mentioned Ayurveda]. *Śuklārma* is caused by kapha which progresses slowly and here all the

treatments of *arma* can be done. *Arma* is treated with abrasive collyria. If it proliferates over the cornea, it should be operated. If not it will encroach the area of the pupil and cause obstruction to vision.

Śuddha-śukla is corneal opacity. (It is called *vella* in Malayalam). Old ayurvedic eye physicians used to prescribe *Vellattin ghṛta* to cure it. Another one is *Kozhi-poti*. It is very effective. There are two formulations with the name – one for eye diseases and the other for diseases of throat. Such formulations are out of practice now. It is prepared by removing the internal organs and feathers of a black chicken and stuffing it with drugs. Then it is dipped in a decoction, dried and powdered. It is mixed with ghee and consumed. The formulations are available. But nobody is using it.

Diseases of the lens (*dr̥ṣṭi roga*)

Dr̥ṣṭi mainly means the lens. In Kairali commentary it is said that *dr̥ṣṭi* is in the middle of the black area of the eye, and though is made up of the five existents (*pañca-bhūta-maya*), is predominantly of the pitta termed *ālocaka*, a minute fire habituated to cold (*śīta-sātmyam*). This description indicates that the structure concerned is the crystalline lens.

According to Dhanvantari it has the size of a cotyledon of lentil (*masūra-daḷa-mātra*) and is a foramen (*vivarākṛti*) covered with the external strata (*āvṛtām paṭalena akṣṇoh*). This indicates the pupil.

Diseases of the lens exhibit gradual progression in the strata (*paṭala-vyāpti*). Usually cataract is referred to as *timira* by laymen. It is not scientific. Cataract cannot be correlated exactly

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with *timira* which is only the first stage of cataract. *Timira* progresses to *kāca* and to blindness (*linga-nāśa*). There are many medicines mentioned for the first stage. They deserve research. Once the disease has progressed medical treatment will not give cure. Surgery is the only option.

Kairali mentions that there are four layers (*paṭala*) in *dr̥ṣṭi*. The symptoms of the disease affecting each *paṭala* are separately mentioned. When the vitiated humors are in the first layer the patient has unclear vision and at times he may have clear vision without specific cause. When the humors reach the second layer the patient may see things which are non-existent. Existing things which are near are seen with strain. Far and minute objects are not seen. Distant objects may appear near and vice-versa. If the humors are situated in circular areas, the patient sees circular areas in visual field (scotoma). If the humors are situated at the centre of the *dr̥ṣṭi*, diplopia may result and if it is scattered multiple vision may result. All refractive errors such as myopia, hypermetropia and presbyopia are to be understood included in this.

When the third stratum is affected vision will be highly affected and the stage is called *kāca*. In this stage vision is lost gradually. When the progress of the disease is complete by affecting the fourth stratum the disease is called *linga-nāśa* and the patient will be blind.

Timira, *kāca* and *linga-nāśa* exhibit different symptoms according to the humor involved. In the case of *vātaja timira* the patient has turbid vision, smoky vision, dirty vision, shaky vision, and brownish vision. Sometimes



he will have clear vision. If this state is left untreated he will begin to see non-existing nets, rays, hair, mosquitoes etc. When it has reached the stage of *kāca*, the area of the pupil (lens) will be brownish. Flames of lamps, moon etc will be seen multiple. Curved shapes and lines will be seen straight. When the stage advances, the lens will appear to be dusty or smoky. The brown color will be clearly brown and the pupil will be either dilated or constricted. When vision is completely lost the condition is called blindness (*linga-nāśa*).

Gambhīrā is a disease mentioned in the context of *vātaja-timira* where the lens is placed deeper in the eye. (The anterior chamber is deeper).

In *timira* due to pitta bright objects like lightning, glow worm etc. are seen. Rays similar to the feather of peacock or partridge will be seen and the vision will be bluish. As it advances to *kāca* the lens will be blue and vision will be bluish. There will be hallos around objects such as that of moon and sun and even rainbow hallow will be seen. In *linga-nāśa* due to pitta the lens will be unctuous and blue-black like beetle and the patient

becomes blind.

Hrasvā is a disease mentioned in this context where the lens will be short and the patient sees things short (tubular vision?). Another disease due to pitta is *pitta-vidagdhā* where the lens is yellow and the patient sees everything in yellow.

In *nakulāndhya* the patient sees strange or with different (unnatural) colors but there will be no night vision. The lens will appear red due to accumulation of filth.

There is a condition called *aupasargika-linga-nāśa* caused by looking at solar eclipse etc. (Photoretinitis).

Color blindness is mentioned in the prodromata of *rakta-pitta*. There it is stated that the patient will not be able to differentiate blue, red and yellow colors.

There is an interesting formulation in *Aṣṭāṅga-hṛdaya*. Corpses of a black serpent and four scorpions are put in a pot of milk (12.8 liters of milk) and kept for three weeks. The milk is churned to collect the butter. The butter obtained is fed to a cock (mixed with grains). (The cock is starved for one day to eliminate the feces of formerly

consumed feed before starting this feed.) The feces of the cock is collected and used as a collyrium. It is mentioned that the blind will surely regain vision by this. It may appear impossible. But the extraction of snake venom, scorpion venom and fat of snake in milk and further in butter, and turning it to the excreta of cock etc. may make sense. But as far as we now, nobody has tried it. We shall prepare the drug, analyze it chemically and study its properties pharmacologically and subsequently conduct clinical trials to assess its action. If it is beneficial it will be a breakthrough in medicine. Research should be directed towards such subjects. The type of blindness curable by this also is to be found out. This may be in cataract as the context is of cataract. The next formulation also involves black serpent.

Though dusting powders (*cūrṇa-anjjana*) are mentioned for eye they are currently out of use. Same is the case of clearing collyria (*prasāda-anjjana*). Irrigation (*dhārā*), coating on lids (*purampāṭa*), retention of medicated ghee (*tarpaṇa*) and retention of baked juice (*puṭa-pāka*) are the common procedures for the eye that could be performed by a general practitioner in Ayurveda. *Tarpaṇa* is good for diseases of nerves of the eye. Some mix a very small quantity of ash of gold (*tanka-bhasma*) with *jīvantyādi ghr̥ta* and use it as an eye ointment for such diseases. *Saptāmṛta-lauham* (B.R.Netra.129) is another preparation for internal use in all eye diseases. The formulation contains five ingredients. This is to be consumed with honey and ghee making the number of ingredients seven. The same composition is used in peptic ulcer (*pariṇāma-sūlā*)

also. This indicates the relation of eye and stomach.

Glaucoma is another major disease. In Ayurveda there are two diseases *abhiṣyanda* and *adhimantha*. In *abhiṣyanda* the main symptom is excessive lacrimation. It gradually progresses to *adhimantha* which is full blown glaucoma. *Adhimantha* will lead to blindness (*linga-nāśa*). In some patients the disease is related with diabetes. But not in all. The basic problem is the increase in intra-ocular pressure (IOP). The disease is very grave. It is mentioned that if *adhimantha* is due to *vāta* vision will be lost in five days, due to *kapha* in seven days and due to blood in three

Physicians of Kerala use the following formulations in treating eye diseases: -
Ilanir kuzhambu (*Narikela-anjjanam*) [S.Y. Netra 52]
Karpūrādi kuzhambu [S.Y. Netra 11]
Nayanāmṛtam (*anjjanam*) [S.Y. Netra]
Jāti-mukulādi varti – for itching [A.H.U.9 ;S.Y. Netra 20]
Jāti-mukulādi varti – for corneal ulcer [A.H.U.11.32; S.Y. Netra 35]
Candrodaya varti [B.R.Netra 73]
Bṛhat Candrodaya varti [B.R.Netra 74]
Jīvantyādi ghr̥ta [A.H.U. 13. 2-4] (oral & for *tarpaṇa*)
Paṭolādi ghr̥ta [A.H.U.13. 6-10]
Mukkādi purampāṭa [S.Y. Netra 14]
Sunetrī varti [S.Y. Netra 88]
Vimala varti [A.H.U.13. 31,32 ; S.Y. Netra 71]
Triphalā ghr̥ta [A.H.U.13. 10, 11]
Mahā triphalā ghr̥ta [A.H.U.13. 12-14]
Ṣaṇmāśika yoga [A.H.U.13.44]
Pāśupata varti [S.Y.106]

days. If it is due to pitta it might immediately cause loss of vision if unwholesome regimen. In this case we may give diuretics such as Punarnavādi decoction to reduce the IOP. To reduce the pain coating over lids can be given. Generally ash of silver (*rajata-bhasma*) is preferred in eye diseases.

For headache in glaucoma Uzhunnu-kolādi decoction mentioned in *Cikitsā-manjjari* is very effective. [It contains black gram, green gram, nut grass tuber (*mustaa*), dry ginger and sida root (*balaa*). The decoction is to be used at night with a small amount of ghee.]

Another important disease is *ananta-vāta* or *anyato-vāta*. This is trigeminal neuralgia. Here *Pathyā-ṣaḍamgam* (*Pathyā-akṣa-dhātryādi*) decoction, nasal medication, *Varaṇādi* decoction etc. can be employed. *Bṛhat vāśakādi* decoction advised by *Bhṛgu* (B.R.Netra. 38) is a very good medicine for all eye diseases. This is to be consumed in the morning. It is very bitter. Hence may be consumed with honey. It may be converted into tablet.

Certain eye diseases are related with tuberculosis. Tubercular choroiditis, Eales disease – *Periphlebitis retinae*, profuse recurring hemorrhages etc. are examples. *Elājamojādi ghr̥ta* mentioned in *Rāja-yakṣma* (A.H.Ci.5. 28-32) is mentioned to be good for the eyes and hence can be tried here along with the treatment of T.B.

Nṛpavallabha (B.R.Netra. 117), *Triphalādi* (S.Y.taila.35), *Kayyonnyādi* (S.Y.taila.18), *Balā-dhātryādi* (S.Y.taila.66) and *Tunga-drumādi* (S.Y.taila.32) are some of the frequently prescribed medicated oils for eye diseases. □



Dr. P.K. Santhakumari
MD (Ay.)

Macular Degeneration (MD) is a degenerative condition of the eye, affecting the macula. Macula being the most sensitive part of the eye, this condition leads to serious vision problems. If not managed properly in time, it may lead to blindness. In spite of continuous researches and modern technologies, the incidence of Macular Degeneration is increasing worldwide, day by day.

Ayurvedic approach

Macular Degeneration can be grouped under the head *dṛṣṭigata roga*, where “*dṛṣṭi*” is the seat (*āśraya-ssthāna*) of the

disease. In this group of diseases, defective and (or) decreased vision is the major symptom.

The main active factor concerned with vision, in *dṛṣṭi* is *ālocaka pitta*. *Ālocaka pitta* is of two types –

1. *Cakṣu vaiśeṣika ālocaka pitta*.
2. *Buddhi vaiśeṣika ālocaka pitta*.

Cakṣu vaiśeṣika ālocaka pitta

It is seated inside the eye. The main function of *ālocaka pitta* is to form the visual impulse. To achieve this, it performs certain actions.

These are mainly the reception of the light rays which are reflected from the object and initiate photochemical and electrical changes in retina. The end result of these actions is the formation of visual impulse.

Buddhi vaiśeṣika ālocaka pitta

This faction of *ālocaka pitta* is situated beyond the eye ball, in the ‘intellect’ (*buddhi*). Its main function is to convert the visual impulse to visual sense. To achieve this, the visual impulse formed in the eye by *cakṣu vaiśeṣika ālocaka pitta*, is carried to *buddhi vaiśeṣika ālocaka pitta* by *prāṇa vāyu*.

Macular degeneration is a condition in which the *cakṣu vaiśeṣika ālocaka pitta* is vitiated first, and in advanced stage *buddhi vaiśeṣika ālocaka pitta* also is involved. So in the initial stage of macular degeneration, the main symptom will be defective vision and in advanced stage there will be loss of vision.

Nidāna (Etiological factors)

1. Any factor unwholesome to the eye (*acakṣuṣya*) that vitiates *pitta*.

Eg: excessive exposure to sunlight and bright light, exposure to ultra violet rays, stress, reduced night sleep, excessive intake of sour (*aṃḷa*), acrid (*kaṭu*) tastes. Dry (*rūkṣa*)

and light (*laghu*) food etc.

2. Weakness or defect of *ālocaka pitta* - anatomical, hereditary or physiological.

Eg: any defect in the macular area.

3. Any systemic disease which may affect the *ālocaka pitta* (eg : Diabetes mellitus, hypertension etc)

Classification of Age Related Macular degeneration (ARMD)

There are two types:-

1. Dry ARMD
2. Wet ARMD

Dry ARMD

Here the main symptom is loss of vision in the central visual field (central scotoma). There will also be distorted vision. The patient complains of curvature in straight lines, difference in shape and size etc. Progress of the disease will be gradual. The later stage may lead to blindness. The problem will be comparatively less at night or in dim light.

Here, as already explained, *pitta* is the main vitiated *doṣa*. In Dry ARMD all properties of *pitta* is not equally vitiated. Hot (*uṣṇa*), sharp (*tikṣṇa*) and light (*laghu*) are increased and thus *pitta* is vitiated. The foul smelling (*visra*), spreading (*sara*) and liquid (*drava*) properties will be remaining more or less intact. Since *laghu* and *tikṣṇa* properties are increased there will be involvement of *vāta* also. Thus Dry ARMD can be considered as *pitta* predominant

dṛṣṭigata roga associated with *vāta*.

Diagnosis:-

1. Diagnostic symptoms

- » Central scotoma (an area of depressed vision interfering with central vision)
- » Distorted vision
- » Dryness of eye
- » Inability to focus on objects in bright light
- » Comfortable with cold application and dim light

2. Amsler grid chart-scotoma can be diagnosed with this chart.

3. Ophthalmoscopic examination- yellowish white spots known as “Drusen” can be seen accumulated in and around the macula. It gradually progress and leads to geographic atrophy. (Characteristic pattern of dry ARMD)

4. For detailed picture of retina, OCT (Optical Coherence Tomography) is useful.

Prognosis:

Prognosis is good in early stage. It can be completely cured. In later stage it turns to be incurable (*yāpya*).

Treatment-

Treatment is aimed at mitigation of *pitta* and *vāta*. Rejuvenation also may be applied (*rasāyana*). All ingredients should be invariably wholesome to the eye (*cakṣuṣya*). Generally, in this condition, unctuous (*snigdha*) and cooling (*śīta*) therapies are good.

For this, the following procedures can be selected.

1. Nourishing nasal instillations (*bṛ̥mhaṇa nasya*)
2. Oil irrigation (*taila-dhāra*)
3. Ghee retention over the eye (*tarpaṇam*)
4. Retention of unctuous juices (*snehana puṭapākam*)

Before starting nasal instillations, internal unction (*sneha-pānam*) is a necessity. Medicines for the treatment may vary according to the age, body constitution, *prakṛti*, season etc. Care should be taken that all the medicine selected are *cakṣuṣya*.

Wet ARMD

Here also pitta is the predominant vitiated humor. But the difference is that in wet ARMD, spreading (*sara*), liquid (*drava*), unctuous (*snigdha*) qualities are increased and thus pitta is vitiated. This vitiated pitta in turn vitiates blood (*rakta*). This results in neo vascularisation and later leakage from vessels. Since spreading, liquid and unctuous qualities are increased, there is a chance of vitiation of kapha also. So we can say that wet ARMD is a pathological condition in which pitta is the predominant humor and kapha is accompanying (*anubandha*). In short in wet ARMD there will be new vessels growing towards macula, fluid accumulation in the macular area (macular edema) and hemorrhages, in and around the macula.

Signs and symptoms:

- » Sudden loss or decrease in vision.
- » Blurring of vision.
- » Distorted vision
- » Difficulty in bright light
- » Edema of lids
- » Metamorphopsia (an alteration in structure and function of eye)

Diagnosis

Diagnosis is possible. Amsler grid chart is highly helpful to diagnose Macular Degeneration. There will be distorted lines, missing areas or scotomas in the chart. Fundus examination is reliable. Macular edema and hemorrhage can be detected by ophthalmoscope examination.



The advanced technology of OCT can be depended for confirmation.

Treatment

This condition can be successfully managed by ayurvedic methods. The treatment principle is pitta reducing, rejuvenating and blood cleansing (*rakta-śuddhikara*). Care should be taken that kapha is not vitiated. The treatment procedures to attain this aim are:-

1. *Netrasekam*
2. *Aścyotanam*
3. *Viṭālakam*
4. *Takradhāra*

Medicine is to be selected according to the characteristic clinical feature of the patient, age of the patient, and other systemic disease of the patient if any. Diabetes, hypertension and nephritis should be considered seriously, because these diseases

can cause vascular pathology. So chances of getting vascular changes in eye are more.

Medicines selected for the treatment procedure should be conducive to the health of the eyes, because only such drugs can act on the ophthalmic tissue in a successful way.

How MD can be prevented?

Prevention is better than cure. And in the case of eyes, it is more so because it is very difficult to regain the lost vision.

Dietary Factors:-

- » Avoid pitta vitiating factors
- » Avoid hot and spicy food items
- » Avoid sour tasted food items
- » Add fresh fruits and vegetables in daily menu
- » Take enough water.

Habitual Factors:-

- » Avoid excessive exposure to sun and wind
- » Practice regular oil application and head bath.
- » Have good sleep of minimum six hours daily
- » Avoid staying awake at night
- » Try and avoid stress and strain.

It is true that these advises are easy to preach but hard to practice. Still we have to try our best for that. It is not only our necessity but also our responsibility to protect our eyes and save the vision. Because blindness takes its toll not just on an individual but on our whole community. □

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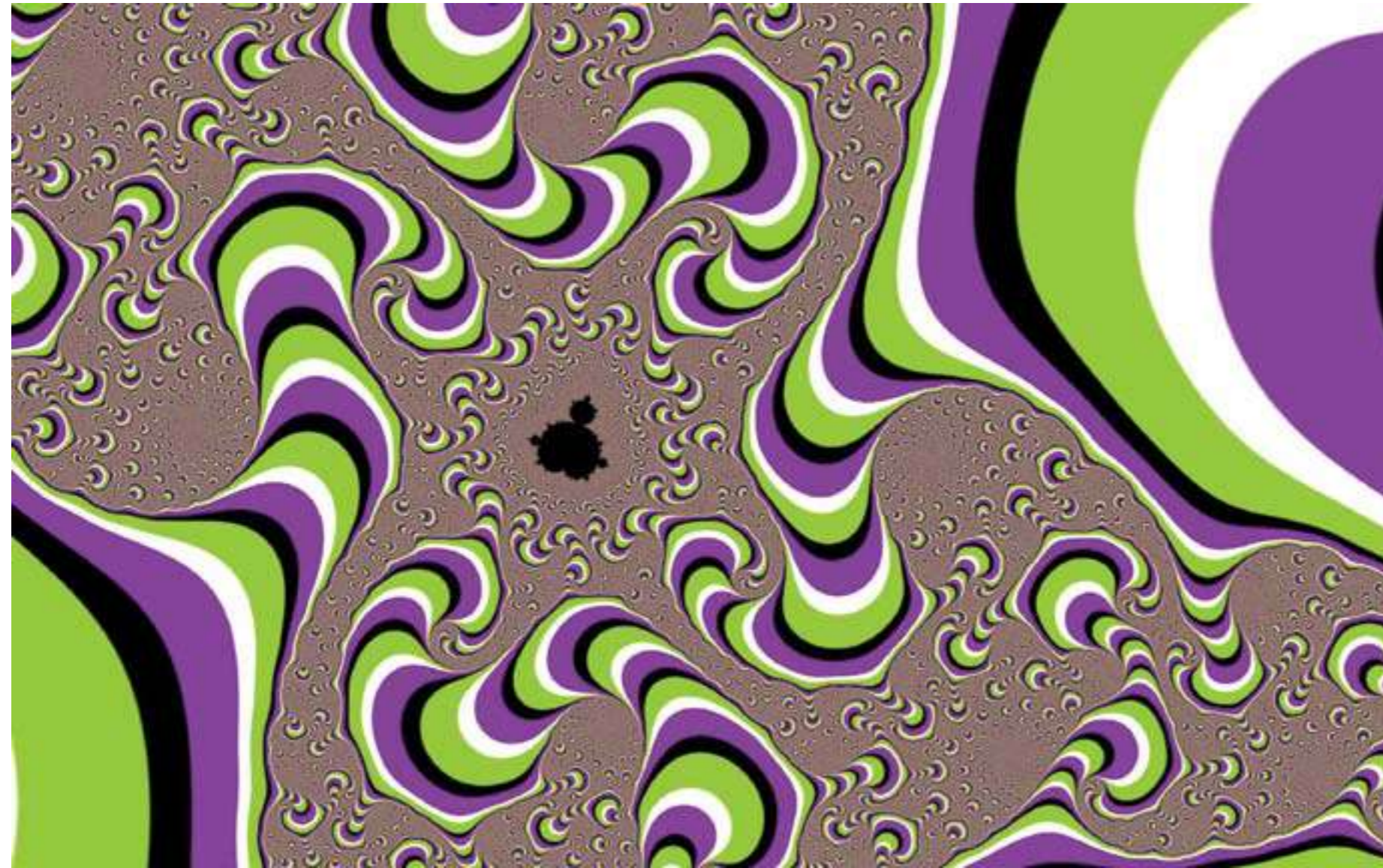


The Annual KAL doctors' meet, Sādhana-2013 was held on 10th November at Kerala Ayurveda Retreat, Aluva. The event was presided over by our beloved chairman Mr. Ramesh Vangal and our Executive Director, Dr. K. Anilkumar.



After a memorable day with training sessions, interactive programs, case presentations and group discussions, it was very hard for everyone to say goodbye.





Is your sight right? You may think that it is right. But if you are over forty years old, it is very unlikely that your sight is right. You might have developed presbyopia and may require a reading glass to correct your near vision. Presbyopia is a natural condition. Right from birth, the refractive index of the crystalline lens of our eyes starts changing.

Human eye is set by default to view distant objects. If you want to read, write or see nearby objects, the eye will have to make some adjustments so that the

light rays falling on your eyes are focused on the retina to form a clear and sharp image. This adjustment is called accommodation. It is the phenomenon by which the eye adjusts to focus on near objects. But this adjustment has a maximum limit. At about the age of forty years the refractive index of the lens would have advanced to such an extent that the accommodation of the eye becomes ineffective. At this age you trespass this limit to enter into the area of presbyopia and is punished with dim near vision.

It may be cruel. But we cannot help. It is the rule of biology.

Why human eye is set for distant vision rather than to near vision? Humanity is very young in the history of evolution. We have started reading and writing only recently. Our civilization is only a few millennia old. Only when our requirement of near vision is too essential to set it as default, Nature will think of and take up the repair by mutation, by changing the hardware. That will take time, say some hundreds of millennia. Till that we can

have the spectacles mounted with appropriate convex lenses. Original setting of the eye is for far vision as it is biologically more important than near vision. To save your life you will have to locate the predator beast at a distance and not when it is under your nose. To get the ripe mango at the tree tip, you want distant vision. For existence what man wants is distant vision. It is only some two thousand years that man started to work in cubicles of offices. His original work place is planes of forests, thick with vegetation

Right Sight

Prof. Agniveś places us in a new vantage point, beyond the conventions of the visual mechanisms, to understand sight. Here, he highlights the mischiefs done by the brain on what the eyes see and proves that what we see is mostly what we want to see.

and undergrowths where his talents of near vision are futile. Nature has a tendency to preserve the essential and discard the less essential. Distant vision is precious. It is preserved even at the cost of near vision.

What am I trying to establish? Simple! Humanity over forty has defective vision and they are not seeing right. Am I right? Now what about the young Turks below forty? Is their sight right? Let us find out.

Right from my childhood I was wearing spectacles to correct myopic astigmatism. The wearing of thick glasses at a young age earned me nicknames in my school days. But as a senior citizen I am happy that I am now relieved of spectacles while my contemporaries all are spectacled. Now I can read without glasses. What is the trick? None! Here a disease counters another and nullifies the morbid effect. As presbyopia developed in me, my myopia receded gradually so that I have better near vision now. But my distant vision is still hazy. Since I am not driving now, I need not

wear spectacles for distant vision. I need not worry about the approaching tiger as I am living in a town. But my astigmatism is still there tilting my head for a better vision.

What is astigmatism? When the eye opts its optical power to be cylindrical than the usual spherical, what you see then will be somewhat a distorted view, just like looking through a cylindrical glass tumbler filled with water. Presbyopia cannot correct cylindrical errors. Hence I will have to cope up with my distorted vision for life long. I was not seeing right, I am not seeing right and I will not be seeing right. My daughter is lucky. She has a simple myopia without astigmatism. But at her adolescence she frightened all as we suspected progressive myopia because she had to change her glasses every now and then for higher powers. Now it is over. No more increase of power.

Two years back my mother, then aged 91 years, underwent surgery for cataract in both her eyes. She had intraocular lenses instead of the opaque cataract



Prof. C.R. Agnives
BSc, BAMS, MD (Ay)

Ayurveda holds that eyes are not seeing. They are just instruments for seeing. It is like the spatula used in cooking. It will not understand the taste of the dish. The knower is the soul.

lenses. So far so good! Now she can watch soap opera in television. My elder brother too had similar operations in both his eyes. But he lost vision in one eye because he inadvertently rubbed that eye after the operation in spite of strict warnings from the surgical crew. Even if you do not rub your eyes, your vision will not be normal after the surgery. The intraocular lens that we transplant will not accommodate. You may opt to have distant vision. But you will need spectacles for reading.

My family history of ophthalmopathy cannot be considered as a statistically significant index to generalize that sight of people is not right. There are still millions of people with clear vision. But I still suspect that those who have 6/6 distant vision and N6 or even N5 near vision are not seeing right. I think I can prove it.

If you have good eyesight you may please close your left eye with your palm and look at a distance without focusing at anything. You have a field of vision. Now remove the palm and close the right eye, keeping the left eye open and looking at the same direction and distance. You will notice that your field of vision has changed. This means that what is seen with the right and left eye are different. Now open both the eyes and look. You get a third picture neither

seen by the left eye nor right eye. This is what is seen by all with binocular vision. There are three visions, one with the left eye, one with the right eye and one with both eyes. Which one is the right sight? If you think that the binocular vision is the right one, please note that your eyes have never seen it. If your

retina to form an inverted image. Images formed in each eye are different. Still you see one image which is not inverted. Or, I am most tempted to ask whether we are always seeing things inverted?

We know that the light rays falling on the retina are converted into electrochemical impulses and carried to optic area number



vision is not what you see with your very eyes, how can you trust your eyes?

After all what is seeing? In schools we learn about light rays coming to the eye, traversing the cornea and aqueous humor, crystalline lens, getting converged, traversing the vitreous humor and falling on the macula lutea (yellow spot) of

one at the occipital region of the brain to compute into one image for your perception. The computer called brain is doing the mischief. It morphs the pictures you collected with your two cameras, your eyes. This is what exactly the CT scanner does. It takes a lot of pictures and gives you a few pictures not at all taken by it. The scanner

has its own intelligence. It shows you what it opts to show you. Similarly your brain is not showing you what you have seen. It is fabricating a vision for you.

This problem of not seeing what is seen is discussed in detail in Ayurveda and Indian philosophy. To begin with I may come to Caraka-saṁhitā describing

are imperceptible. Then there is the mind that connects the soul to the faculty and engages it to collect the sense. Translating the ideas into the case of vision, soul is the seer. Mind is instigated by the soul to get connected with the visual faculty seated in the eyes to engage it in collecting visual information. Even though we have two eyes we have only one visual faculty and only one mind. So even if there are two different images in each retina, the visual faculty and mind cannot convey the images as two. If they carry two different images they will have to merge together. If they do not merge, you will have diplopia, i.e. double vision. It happens when the mind is dissociated as in drunken stage.

Mind is the contemplator. It has to present only integrated information to the soul. In the case of vision, according to modern neurology, there are more than thirty areas in brain to compute your visual input. Each of them is doing some correction, addition or deletion in the input to attain the final output that you designate as sight or visual sensation. Caraka-saṁhitā has posted this in the account of soul. But the soul could select only the figures presented to it by its private secretary, the notorious mind. Hence you should have a mind to see. It can amend your sight. When the mind is colored, your vision will be tinged accordingly and you will have your jaundiced views. When you are absent minded you won't see at all even if your eyes are wide open.

Thinking of view, I am tempted to write about view point. No one else can view what I am seeing at a particular time because no one can view through my eyes. If I move away from the place where I was, you may occupy the place and have the

same view point. But by the time, things might have changed. That is what modern physics and Buddhism teach us. The observed will change when it is being observed. Hence you will never see what I have seen. This is a curious phenomenon.

In a painting class room, some thirty students are sketching a nude model. Finally what we get is thirty different sketches of the same damsel, varying in perspective. Your perspective decides what to see and what you do not see. You may view a thing straight, from left or right. You may select a high angle, low angle or eye-level vision. In all cases what you see is different. So first fix your place and gaze before you see. You cannot have the same sight again.

It is not only the case of place. There is the time factor too. If you have missed a second, you will miss a scene which can never be recapped. If you fancy photography, you will understand what I mean. How correct are Indian philosophers to identify perception as momentary! There are no retakes in life and in perception.

When you are looking at an apple you say that you are seeing the apple. I would say that you are not seeing the apple. Am I right? According to physics, light rays reflected on the apple are falling on your retina. There are only light rays. No apple at all! If you are seeing the apple, it is by habit rather than sight. Recall the dog of Pavlov who salivated on hearing the bell. I think you are not convinced. Then do this small experiment. You can find out the truth for yourself. Look at any black letter of this page and concentrate on it. Only one letter, not more. Okay, You have done it. What are you seeing? You can promptly name the

I believe that children are more serious viewers of reality than adults as their brains are not stuffed with prejudices. So they are curious. Adults have answers, answers prompted by prejudices.

letter. But I say you that you are not seeing the letter. You are seeing just a blot of printing ink and calling it some fancy name! The same is the case with apple too. Collecting the light from the apple and naming it as apple are different. If you have not seen an apple before and are totally ignorant about apple, you will not be able to identify an apple as apple. Unidentified sensory experience is termed *nirvikalpa-pratyakṣa* (undifferentiated perception) in Indian philosophy. Once it is differentiated, it is called *savikalpa pratyakṣa*. Perception has two aspects, perception and interpretation. Interpretation is a mental function and is based on memory. If the interpretation part of your vision is biased, what you see will be bizarre or at least unreal. Unreal perception is called illusion. All that we see is just an illusion. That is what the non-dualists of India proclaim. Is it true? When you see a rope as snake, it is illusion. But if you see fire where there is no fire, it is hallucination, perception without physical basis.

If the object that we perceive is amended substantially by thirty or more areas of brain and interpreted by the mind according to its preference, then how can we claim that we are seeing the reality? After all there is high limitation to our

perceptions. We will have a session of interrogation. For convenience, I shall ask and answer myself.

- "What is in your hand?"
- ☞ "A magazine."
- "I doubt it to be a bunch of papers bound together."
- ☞ "Yes, you are right."
- "But paper is cellulose?"
- ☞ "Yes."
- "Cellulose is a polysaccharide?"
- ☞ "Exactly! It contains glucose molecules."
- "Glucose is made up of carbon hydrogen and oxygen?"
- ☞ "Sure."
- "So you have atoms of carbon, hydrogen and oxygen, those are nothing but subatomic particles like proton, electron and neutron."
- ☞ "Yes. The science says so."
- "If what you have is a handful of subatomic particles, why did you call it a magazine?"
- ☞ "You see, it is a magazine."
- "I see. Now I understand that what you see is not right."

This may be over stretching of facts. Fact may differ from reality, especially when you are intent at the ultimate reality. That is why the sage who proposed the atomic theory in India was nicknamed by his contemporaries as Kaṇāda (eater of atoms).

In the talk we went from gross to the minute. The same can be in opposite direction too. In both cases we end up with infinity. Briefly, it is like this. "Where is the magazine?" "In my hand." "Where is your hand?" "In my body." "Where is your body?" "On the floor." "Where is the floor?" "On the Earth." "Where is the Earth?" "In the solar system." "Where is the solar system?" "In the milky way."

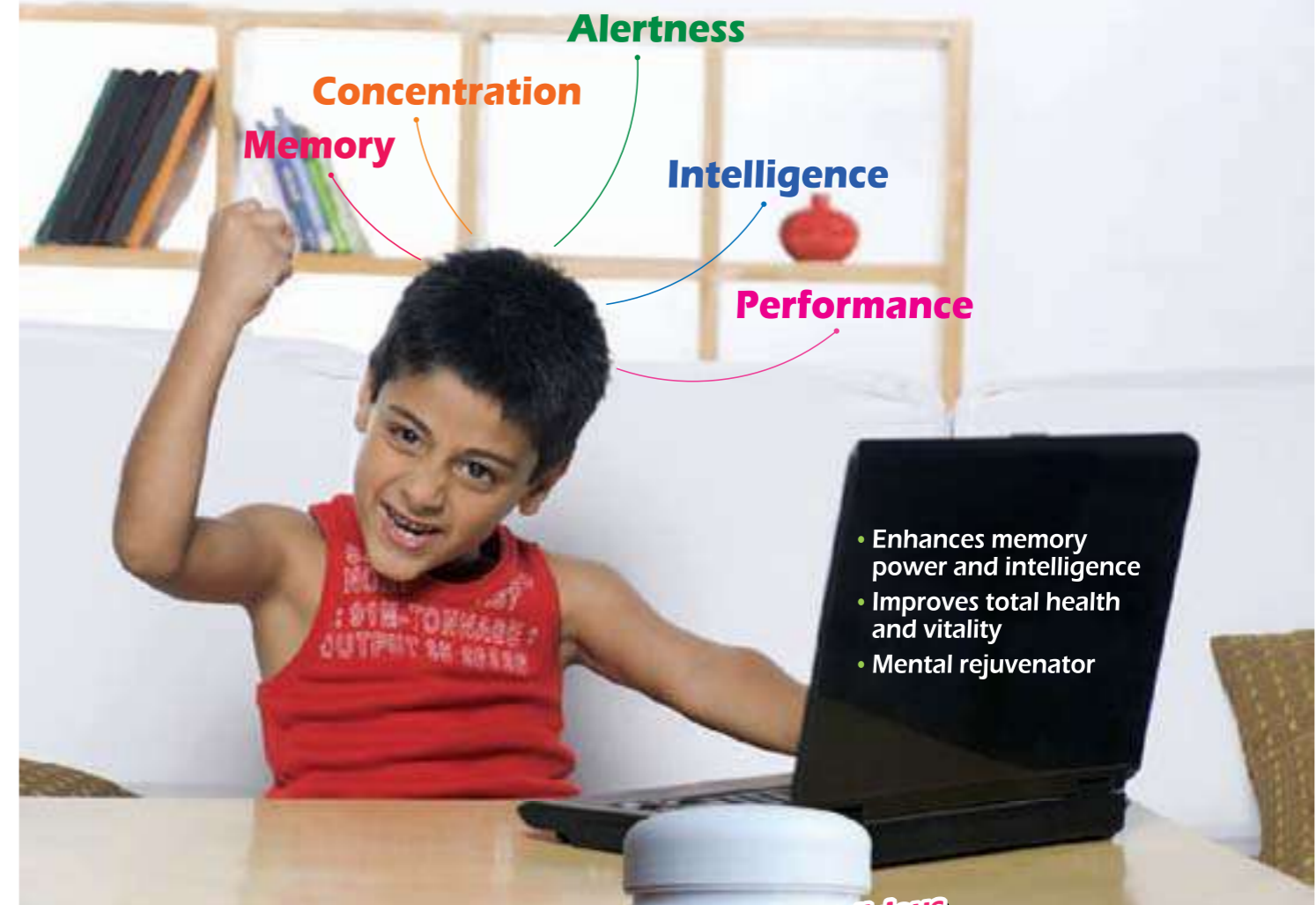
"Where is the milky way?" "In the cosmos." "And where is the cosmos?" "... " "I will tell you, it is in your mind. So ultimately it is a vicious circle. The magazine you see in your hand is actually in your mind."

These conversations may be childish. But I believe that children are more serious viewers of reality than adults as their brains are not stuffed with prejudices. So they are curious. Adults have answers, answers prompted by prejudices. So an infant who has not seen an apple before will see the reality of the object than limiting the scope of vision in an apple. The other way round also is true.

Once a teacher drew a circle on the black board with white chalk and asked the class what it is. The children said, sun, moon, egg, apple, orange so on and so forth. Finally the exhausted teacher had to tell them that it is a circle drawn with a chalk piece on a blackboard. He was trying to teach the area of a circle. This is the problem with humanity. What we see is what we think. Once a famous psychologist showed me a title of a chapter of a book for a few seconds and asked me to read it. It was a small term. I read it correctly. Then he showed me the title again. There was a spelling mistake in the title, yet I read it correctly. We are not reading what we see. We read with our mind and not with our eyes. If you still think that you are seeing right, then I will have to change the title of this article, "What is right?" □

Prof. Agnives is a revered scholar and a celebrated author. He is the Editor-in-Chief of Kerala Ayurveda Vaidyam. agnivescittezh@gmail.com

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Shelli Thompson

Ayurveda is a relatively new science in America; many people are unaware about Ayurveda in the United States although it has had a presence for about 30 years. There are many books published on Ayurveda and recently it has gotten some attention from television personalities and on talk shows. Dr. David Frawley, one of the leaders who brought Ayurveda to America and a well known figure in the Global Ayurvedic Community, is now an Advisor for Kerala Ayurveda Academy USA.

Kerala Ayurveda Academy USA (KAA-USA) is progressing into a powerhouse for Ayurvedic Education in the United States. With the addition in 2010 of Dr. Jayarajan as the Academy Director and his vision of how Ayurveda should be taught, the Academy has grown to 4 locations. Because of the flexibility in the structure of the Academy, it allows even the busiest professional the ability to learn and become a viable addition to the Ayurvedic community. Courses can be learnt online with great materials and class videos. In addition to the online learning site there are so many opportunities for hands on

training with live classes in locations across the US, workshops and customized subjects for short-term learning

There are many places to learn about Ayurveda in the United States, KAA-USA is a groundbreaking program that offers many things to its students that are not offered by other learning Institutions.

Kerala Academy USA is breaking new grounds for the requirements of their students. One of the highlights of the Academy is a provision for a 21 day internship in India.

Some learning institutions

in the USA have groups of people going to India to experience the culture and be exposed in a more authentic way to Ayurveda. The difference at KAA-USA is that there is an actual internship program in place. The student arranges their own travel to India and from the time of arrival, Kerala Academy arranges all meals and transportation, learning, lodging and sightseeing.

In India our students have the opportunity to shadow the senior doctors, take an active role in "medical camps", view treatments, talk to patients, review their medical charts and work on specific cases.

hands-on training of specific treatments at Kerala Ayurveda Academy Aluva.

KAA-USA is proud to announce the opening of their "internship focused" clinic in California that will allow students to experience clinical Ayurveda closer to home and to take part in clinical discussions and treatments.

All of the activities at KAA-USA are aimed at making our Practitioners better prepared to be able to handle the ever-changing needs of the American people. The ongoing education that is offered by the academy is second to none in the form of workshops both multi-day and daily intensives, weekly calls, labeled archives of past learning, and so much more.

KAA-USA stands alone in their dedication to authenticity and teaching Ayurveda in America that is relevant to the needs of the general populous.

In addition, these programs are exclusive to KAA-USA:

- » 21 day India Internship

- » Mentorship Program
- » credit exchange Program
- » Continuing Education in the form of workshops
- » Internship based clinic in Fremont California
- » California State Licensed Certificate Program

KAA-USA

continues to support their students with forums and various committees' that enable the academy to make small changes for the overall good of the student body. Because of this the Academy has been able to improve internship productivity, class structure, Material provided and has been able to offer the types of workshops that interest a wide range of the Ayurvedic and Natural healing communities that Kerala Academy caters to.

KAA-USA will do nothing but grow under the guidance of Dr. Jayarajan and the entire staff and support team at India. Kerala Ayurveda continues to work towards Ayurveda being recognized in all 50 states as a licensed medical practice. We are making progress.

As the Academy grows, the word of Ayurveda will spread and many more people will experience good health and a long productive life. □

An alumni of KAA-US, Shelli Thomson is a Certified Ayurvedic Wellness Practitioner. She is also an international trainer and speaker.
shelli@healthpulse.org



Kerala Ayurveda hospitals and staff are enthusiastic about making the learning experience as authentic as possible, the students get to experience day to day life in an Ayurvedic hospital treating patients. The students also experience



Kerala Ayurveda Academy, USA

Taking Ayurvedic Education to New Heights



Kerala Ayurveda Academy-US interns with Executive Director, Dr. K. Anilkumar and the faculty and staff of KAA-Aluva.



A group of traditional medicine doctors and therapists representing the Bhutan Government visited Kerala Ayurveda Academy, Aluva for a 12-day orientation program in Ayurveda.



A team of students led by Dr. Ruge (Nārāyanānanda), a famous cardiologist and Ayurveda practitioner from Sao Paul, Brazil completed their Advanced Ayurvedic Learning course at Kerala Ayurveda Academy, Aluva. This program was conducted as a joint venture of Yoga Brahma Vidyalaya, Brazil and Kerala Ayurveda Academy, Aluva.



A team of 12 professional students from Maryland University, USA led by Prof. Dona visits Kerala Ayurveda Retreat to learn about Ayurveda, the traditional healthcare system of India

On Eye Health and Natural Supplements

What all can damage vision? What all can improve it? And, what is the latest trend in eye care? Read on to find out.



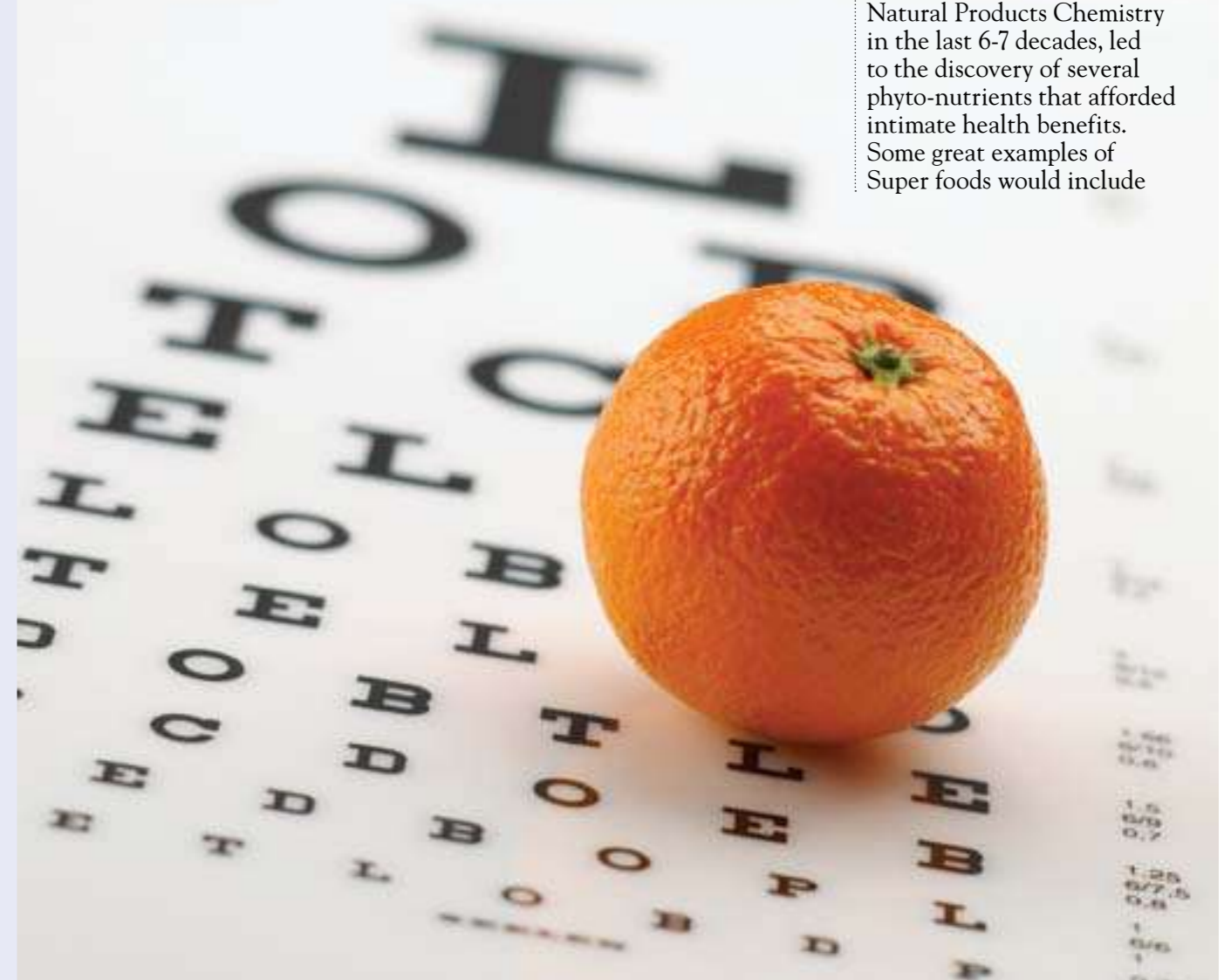
Ms. Jayashree Madhavan J.

Since the beginning of organized social life, mankind has been on a great quest to fight diseases, find foods that not just

appeased hunger but provided good health and improved quality of life. Through a series of trials and errors, knowledge about plants as food and

medicines were gathered and summarized in treatises and pharmacopoeias dating back to antiquity.

Intensive research on Natural Products Chemistry in the last 6-7 decades, led to the discovery of several phyto-nutrients that afforded intimate health benefits. Some great examples of Super foods would include



nutrients from carrots, tomatoes, pomegranates, acai berries, gooseberries, cranberries, bilberries, spirulina, corn, fish oil, and many more.

Scientists have been successful in linking the health benefits of these foods, to active nutrients through innovative research. This has led to a revolution in the development of a range of dietary supplements and nutraceutical products catering to the health of specific systems and body as a whole.

“Everything begins with vision. You will become what you behold, but what you do not behold, you cannot become”. (John 4:34-35; Matt 9:36-38)

Eye is one of the important sensory organs, a prerequisite for well-being and active life.

Good eyesight is very essential for all tasks of daily living be it reading a newspaper, watching television or driving a car. Healthy vision helps maintain quality of life and enables us to retain our independence as we grow older. Without vision, man wouldn't be able to admire the magnificence of our fantastic world.

Deterioration of vision need not necessarily be a consequence of ageing alone. Unhealthy lifestyle, smoking, alcohol consumption, UV damage, diabetes, obesity can also cause visual woes. Healthy nutrition is the key for healthy vision. Healthy diet along with nutrients good for eyesight hence becomes vital.

The risk factors for eye diseases

A number of factors have been proposed to cause eye diseases. The following are the most common factors:

Smoking.

Strongly associated with development of cataract and increased Age-related Macular Degeneration (AMD). The risk proportional increases with the number of cigarettes smoked and are thought to affect eye health through oxidative stress.



Ageing - Prevalence of cataract, AMD, Glaucoma,

Retinal arterial occlusion and diabetic retinopathy increases due to ageing.

Alcohol

consumption increases the risk of cataract, diabetic retinopathy and progressive development of AMD. This is because alcohol has the ability to inhibit the absorption of nutrients which are essential to maintain the integrity of the lens.



UV damage – many studies have reported that prolonged exposure to UV light, especially UVB (shortwave), increases the prevalence and risk of pterygia, cortical cataract and AMD since cornea is a good absorber of UV light.

Myopia - watching TV, near reading or working on computer for prolonged time has been found to be associated with the development of myopia. If untreated it progresses to high myopia which increases the risk of development of cataract and glaucoma.



Steroidal medications –

Prolonged use of oral/inhaled gluco-corticosteroids is found to increase ocular hypertension which leads to glaucoma and cataract



Unhealthy diet may increase body's susceptibility to a wide range

of eye diseases such as cataract, diabetic retinopathy, glaucoma and AMD.

Diabetes

- The eye may be adversely affected by problems with blood sugar levels, micro-vascular damage and associated conditions such as poor nutrition and obesity.



Hypertension – major risk factor for retinopathy, glaucoma and

AMD.

Obesity – increases risk of AMD especially in men, diabetic retinopathy and cataract.



Heredity – a major factor for determining development of cataract, amblyopia, glaucoma and Juvenile Macular Degeneration (JMD)

Ethnicity – Asian-Americans are more likely to be myopic,



or nearsighted, than their Hispanic, African-American and Caucasian peers, while Caucasians are more likely to have hyperopia, or farsightedness, than from the other ethnic groups. Astigmatism is most prevalent among Hispanic group.

Prolonged use of Multi-media, prolonged exposure to sun which causes UV damage and heredity are the major risk factors for vision problems in children

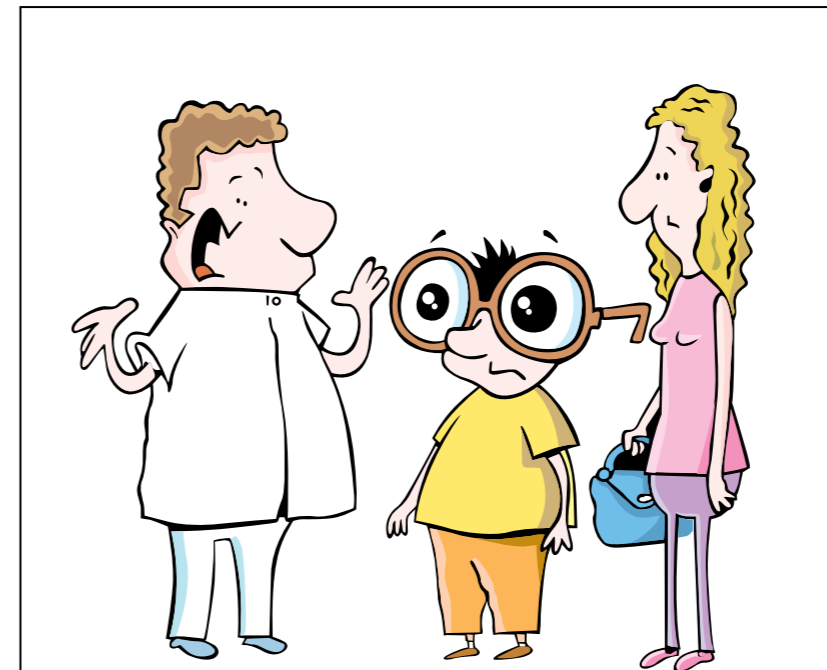
As we age, many components in the eye tend to change

and can become susceptible to various eye diseases and disorders.

The need of the hour hence is to create global awareness regarding eye health, prevalent risk factors and also to educate people regarding preventive measures and treatments available to limit eye diseases.

Nutrients beneficial for eye health

The World Health Organization estimates that up to 80% of blindness and visual impairment, globally, is avoidable



As recommended by AOA, children need their vision checked starting at 6 months then at 3 years even if there are no risk factors or family history of eye problems. According to Optometrists Network, the symptoms of possible vision problems in children include: refusal to go to school, poor performance school, difficulty in paying attention or reading or writing, blurry vision, frequent and regular headache and eye pain. Between 18 months and 4 years ocular problems tend to emerge in children. The most common vision issues being -

- » A crossed or wandering eye, which troubles 3% to 5% of children
- » Uneven focus, where one eye is more farsighted than the other, which affects 2% to 3% of kids.

through prevention or treatment. Although one can never be able to restrict age, ageing can be retarded by avoiding unhealthy life-style and consuming essential health nutrients and supplements critical for eye care.

Balanced nutrition is an integral part of good eye care. Eye nutrition can be effectively approached by healthy and balanced diet. According to the guidelines developed by U.S. Department of Health and Human Services and the Department of Agriculture, a healthy diet:

- » Emphasizes on fruits, vegetables, whole grains and fat-free or low-fat milk and milk products
- » Includes lean meats, poultry, fish, beans, eggs and nuts
- » Is low in saturated fats, Trans fats, cholesterol, salt (sodium) and added sugars.

Nutrients recommended for maintaining eye health are as described below -

- » Lutein and Zeaxanthin - 10mg/day and 2mg/day respectively
- » Vitamin C – 500mg/day (RDA – 90mg/day for men and 75 mg/day for women)
- » Vitamin E – 400 IU/day (RDA – 22.5 IU/day)
- » DHA/EPA – 500 mg/day
- » Zinc – 40-80 mg/day (RDA - 11mg for men and 8 mg for women)

Ingredients commonly used in Vision Supplements and their role

1. Vitamins and beta-carotene
 - a. Vitamin A - It is required in the production of rhodopsin, the visual pigment necessary

to maintain proper night vision, wound healing and proper functioning of the immune system.

b. Vitamin B complex (including vitamins B1, B2, B3, B5, B6, B12 folic acid, biotin and choline) - B complex vitamins is found to prevent elevated levels of amino acid homocysteine the blood, which have been associated with vascular problems affecting the retina and plays an important role in reducing the risk of macular degeneration and in the treatment of uveitis, the common causes of visual impairment. It may also help reduce chronic inflammation

c. Vitamin C and E - One of the extensively researched powerful antioxidants associated with reduced risk of cataracts and AMD.

d. Vitamin D - Literature review proposes that vitamin D lowers the risk of macular degeneration. Vitamin D deficiency is globally widespread, especially during winter.

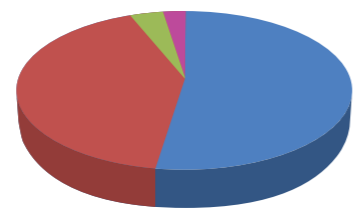
e. Beta carotene - A precursor of Vitamin A, helps prevent intraocular oxidative damage and found in foods such as kale, spinach, and carrots

2. Lutein and Zeaxanthin - These carotenoids are the 2 major components of macular pigments of human retina and lens, responsible for central vision and visual acuity. These are yellow pigments that helps protect the macula from UV light by acting as body's natural sunglasses. Found in green leafy vegetables such as spinach or kale it reduces the risk of macular degeneration and cataracts. Lutein and Zeaxanthin are now highly recognized by the public due to the magnum of research done supporting their role in eye care. 3. Herbal anti-

oxidants - Herbal extracts, such as ginkgo biloba and bilberry, contain phyto-constituents that provide protection from oxidative stress in the eyes. Bilberry nourishes the optic hence used in the management of retinopathy.

4. Omega-3 fatty acids - found in the retina and are essential for the development of eye. Well-known for their benefits in cardiac, joint and brain health, these essential nutrients help reduce growth of abnormal blood vessels, changes in the composition of fatty acids

Principal Causes of Visual Impairment



■ Uncorrected refractive errors
■ Cataract
■ Glaucoma
■ AMD, diabetic retinopathy, trachoma and corneal opacities

in the membrane of the lens which may cause cataracts and also reduce the risk of dry eyes. These provide structural support to cell membranes and hence may be beneficial for dry eyes, and to promote healthy vision. Cold water fish like cod, sardines and tuna are excellent sources of DHA, and Omega-3 fatty acids.

5. Astaxanthin - One of the potent antioxidants which possesses the ability to protect the eye from UV damage, photoreceptor cell damage, ganglion cell damage, neuronal damage and inflammatory

damage.

6. Zinc - One of the commonly supplemented mineral which is found to reduce the risk of wet AMD and improve visual acuity.

7. Pycnogenol - It is a natural plant extract from the bark of the French maritime pine which contains a unique combination of procyanidins, bioflavonoids and organic acids. It helps retard progression of a developing diabetic retinopathy and deterioration of visual acuity.

8. Anthocyanins - Mahonia grape extract is found to contain anthocyanins, natural anti-oxidant, which benefits the retina against AMD and improves night vision.

9. Sulfur - It is necessary for the production of glutathione, an important antioxidant necessary to help maintain healthy vision. It is found to protect the eye lens from cataracts. Eggs, Garlic, onions and shallots are found to be rich in sulfur.

10. Copper - It is found to enhance the functioning of antioxidant enzymes in the eye. Whole grain cereals, legumes, and oysters are rich in copper.

11. Acai Berry - A natural supplement that helps balance intra ocular pressure.

12. Chromium - Found in onions and tomatoes, helps maintain balanced intraocular pressure.

13. Sea buckthorn - Found to be a valuable source of zeaxanthin esters. The carotenoids and tocopherols of the oil or the eicosanoids produced from the fatty acid of this oil have been found to have a positive effect on inflammation and dry eye. The oil is found to attenuate the increase in osmolarity, a focal factor in dry eye.



brain nourisher

An ideal herbal combination of brain nourishing ingredients, like *Bacopa*, *Acorus* etc., which enhances memory, intellect and improves learning process. *Clitoria* and *Centrella* are wellknown brain stimulants and *nutrients*, which provides sound sleep, reduces stress and empowers mind. *Ocimum* and *Aegle* two traditionally proven memory toners are also incorporated with it.



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Indication:
Memory toner,
Relieves stress and anxiety.

Dosage:
1-2 capsules twice daily.

Presentaiton:
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Composition:

Each Brahma Pearl capsule is prepared out of:
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Acorus calamus (Vacha) 200mg
Clitoria ternatea (Shankupushpi) 200mg
Centella asiatica (Madookaparni) 200mg
Ocimum sanctum (Thulasi) 100mg
Aegle marmelos (Bilwa) 100mg
Ghee 550mg

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- Improves intellect
- Improves learning process
- Relieves mental stress
- Provides sound sleep

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14. Curcumin – Obtained from rhizomes of turmeric has been found to protect children from Ischemic retinal diseases and retino-blastoma.

Balanced healthy diet and nutrition is the key for healthy eyesight. Unfortunately in today's hectic lifestyle many miss out on the essential nutrients provided by a healthy

diet. So taking supplements will be beneficial. Eye health supplements are designed to fill in the nutritional gaps and provide necessary amounts of valuable nutrients, daily, for maintaining healthy vision. Eye health supplements are intended to supplement a healthy diet to ensure delivery of adequate amounts of essential

nutrients such as antioxidants, vitamins, minerals and carotenoids and botanicals for good eyesight. Supplements along with unhealthy diet will not yield any health benefit.

Given the lack of specific knowledge about eye health supplements among public, it would be helpful if awareness about the benefits of key

nutrients used in eye care is created. As a step towards creating this global awareness, WHO has taken an initiative "Universal access to eye health: a global action plan 2014-2019" which aims to improve eye health at community and national levels. The goal of the action plan is to provide a global framework which contributes to

eliminate avoidable blindness and visual impairment through comprehensive eye care services integrated in the health system with an approach which ensures quality and equity. □

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Although visual impairment is growing as a major medical concern, there is little understanding about the nutrients beneficial for eye, risk factors or prevalence of different eye diseases which can ultimately pose a threat to the eyes. Younger consumers have evolved around a multimedia culture, both at

work and at home, presenting a distinct opportunity for more immediate relief from eye issue like chronic eye fatigue. The Global Eye Health Barometer survey makes the following findings.

» It was noted that consumers may have a false sense of security around their level of eye health knowledge.

» 7 in 10 expressed that they were somewhat knowledgeable or very knowledgeable about eye health and proper eye health care (highest in Spain, 88% followed by India with 81%). Whereas 97% of doctors informed that the public is not sufficiently knowledgeable about proper eye health care.

» The survey also revealed that many erroneously believed common eye health myths which are a further reflection of lack of proper awareness about importance of eye care.

» 44% believed "I don't need an eye test unless there is a problem"

» 42% believed "if I can see, my eyes must be healthy"

» 4 in 10 believed "The only reason to visit an eye doctor is for vision correction."

» A third believed "If it doesn't hurt, it's not serious"

» The most common reason specified for the lack of routine eye tests was not expense (39%) or time (31%), instead, consumers expressed

that they did not get more routine eye tests because they "don't have any symptoms (68%) and/or "can see just fine" (64%) which are the two dangerous misperceptions of serious eye health issues in view of the fact that many are asymptomatic. 90% of the eye health professionals informed that those over 45 get routine eye checks more often than those in their 18-24.

» It was also found that many are unaware of common lifestyle and environmental contributors to poor eye health. 65% were surprised by obesity as one of the cause; 51% were surprised by smoking and 37% were surprised that vision problems can be a consequence of exposure to pollution.

» Globally, many consumers expressed their interest to protect eyes by wearing sunglasses, eating healthy diet, maintaining healthy weight, refrain themselves from smoking and regularly spend time outside. It was witnessed that consumers would rather give up their sense of taste, hearing, a limb, or even 10 years of their life in order to preserve vision. 59% believes vision loss would severely impact their quality of life, more so than many other health conditions

(such as diabetes, loss of hearing, poor dental health).

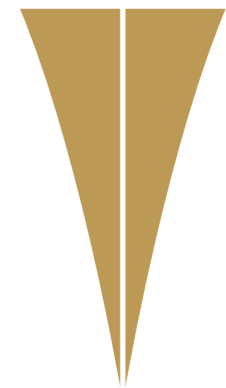
» Globally, women have claimed to participate in more eye-smart activities than men. Women were more apt to say - they wear sunglasses (81% vs. 77%), eat healthy diet (82% vs. 75%), maintain healthy weight (78% vs. 75%), refrain from smoking (79% vs. 73%), and get routine eye tests (66% vs. 61%). Women also claimed to know that computer usage (84% vs. 78%), exposure to UV rays (77% vs. 73%), diabetes (74% vs. 67%), and dry air (61% vs. 51%) are bad for their eyes. Eye health experts also agree that 94% of those women took better care of their eyes.

» It was noted that, globally, married people are more likely to engage in activities that are good for their eyes, such as wearing sunglasses (81% vs. 76%), regularly spending time outside (83% vs. 78%), eating healthy diet (82% vs. 74%), maintaining healthy weight (78% vs. 75%), refraining from smoking (79% vs. 74%), and getting routine eye tests (69% vs. 56%) than those who are un-married. □



Public Awareness on Eye Health

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Those who wish to publish their articles in Kerala Ayurveda Vaidyam may please mail them to the following e-mail ID as an attachment in MS Word, using ScaGoudy font. Use the ISO 15919 transliteration for Sanskrit and state textual references wherever required.

A signed hard copy also may be sent to the Executive Editor. Any picture to go with the article should be windows compatible. Please include a PP size photograph of the author (JPEG format).

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Diabetic Retinopathy



Dr. K. Sreejith
MD (Ay)

Diabetic Retinopathy is getting very common and many believe that it is an inevitable incident in a diabetic's life. In fact proper awareness, early detection and meticulous management can keep this sight-threatening condition at bay. Dr. Sreejith describes Diabetic Retinopathy in both modern and ayurvedic perspective.



The individuals having Diabetes Mellitus are 25 times more prone to blindness than individuals without Diabetes Mellitus. This blindness is primarily the result of progressive diabetic retinopathy and clinically significant macular edema. The main pathogenesis is the formation of unhealthy blood vessels and

consecutive hemorrhage to the posterior compartment of eye. This mechanism is explained as follows.
1. Hyperglycemia will increase the blood flow to retina
2. This will impair the vascular

auto regulatory mechanism of retinal vessels
3. This leads to increased production of vasoactive substances and increased proliferation of endothelial cells
4. These materials will close the

capillaries to retina as a result retinal hypoxia develops
5. In order to re-establish the supply, vasoendothelial growth factor will be stimulated and resultant endothelial cell growth causes new blood vessels formation
6. These blood vessels are unhealthy and easily rupture to cause retinal leakage and hemorrhage which leads to blindness.

Diabetic retinopathy is divided in to two stages:
Proliferative diabetic retinopathy and non Proliferative diabetic retinopathy

1. Non Proliferative Stage

The non proliferative stage of diabetic retinopathy is the primary stage which is characterized by the following signs in fundus examination.

1. Retinal micro aneurysms- these are the earliest clinical abnormality detected. They appear as tiny discrete circular spots near to retinal vessels.
2. Blot hemorrhages- Blot hemorrhages are round, regular shaped ones found in deeper layers of retina.
3. Cotton wool spots- these are arterial occlusions causing retinal ischemia found in advancing retinopathy.

The pathophysiological mechanism of non proliferative stage is given in chart:1.

2. The Proliferative Diabetic Retinopathy

The hallmark of proliferative diabetic retinopathy is the appearance of neo vascularisation. If non-proliferative stage is unattended the DR advances to next stage that is proliferative stage which end up with retinal detachment.

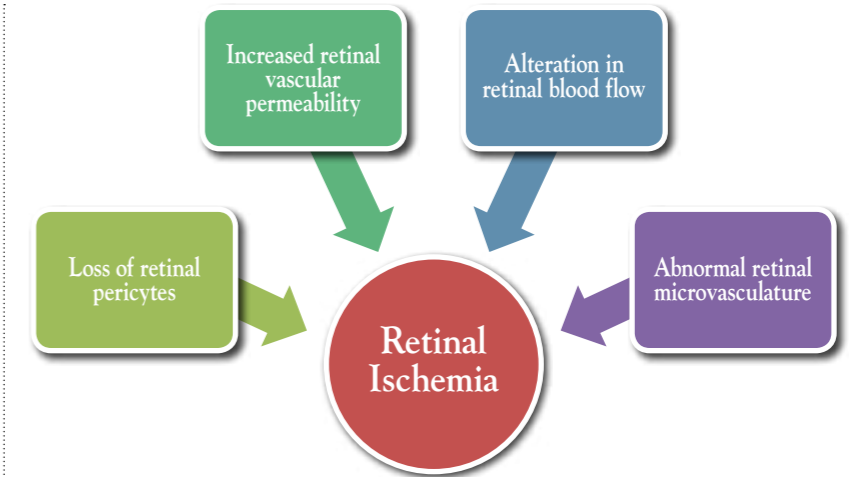
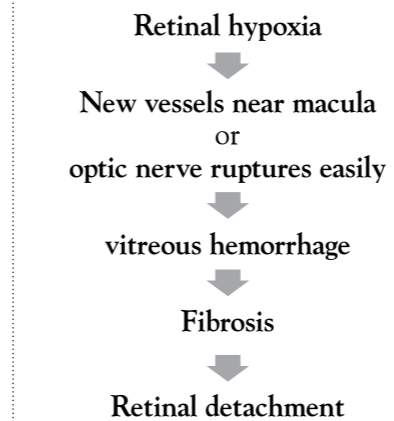


Chart:1: The pathophysiological mechanism of non proliferative Diabetic Retinopathy

The progress of the disease is shown in the diagram below:



Symptoms of Proliferative Diabetic Retinopathy

- a) Decrease in visual acuity which cannot be corrected with lenses
- b) Sudden loss of vision due to hemorrhages
- c) Blurring of vision
- d) Scotomas
- e) Photophobia

Prevention protocol for DR

► Diabetic patients should get a regular eye check up at least once in a year and diabetic retinopathy patient should visit

more often for eye examinations.

- Better control of blood sugar levels slows the onset of progression of retinopathy.
- Controlling the elevated blood pressure and cholesterol can reduce the risk complications of diabetic retinopathy.

According to Ayurveda there are numerous common etiological factors for developing an eye disease and diabetes. It is worthy to scan similarities between these specific etiological factors.

Etiology of DM (madhumeha nidāna)	Etiology of eye diseases (netraroga nidāna)
Sleep -Excessive sleep (Svapna sukha / divāsvapna by Caraka)	Sleep -Sleep inversion- Swapna viparyaya by Suśruta
Food -Excessive use of curd (dadhi sevana)	Food -Excessive use of sour taste (amḷa sevana)
Over indulgence in sex (atimāithuna)	Over indulgence in sex (atimāithuna)
Mental factors like anger (krodha), grief (śoka) etc	Suśruta also mentions these in the etiology of eye diseases

From the above comparison it is clear that there is striking

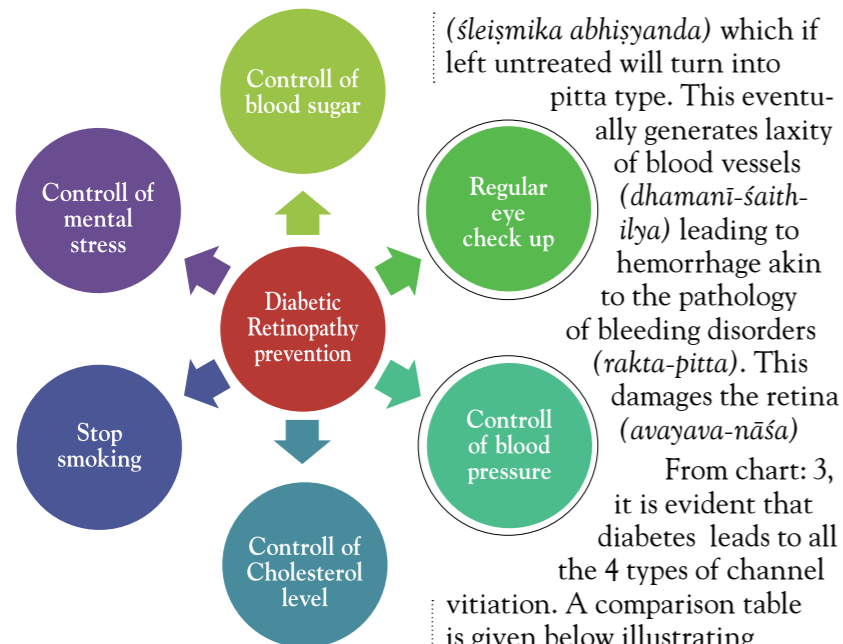


Chart 2: Prevention protocol for DR

similarity in the etiology of eye diseases and diabetes. Thus an individual suffering from diabetes is likely to develop ophthalmic complications.

The above mentioned factors lead to vitiation of the three humors and through the ascending blood vessels, these vitiated humors reaches and locates in the head. This causes excessive secretions in the sinuses of head with consequent morbid lacrimal secretions. Vāgbhaṭa has rightly pointed out that the eye is fiery and is especially prone to be affected by kapha.

Thus at the first stage, secretions due to kapha

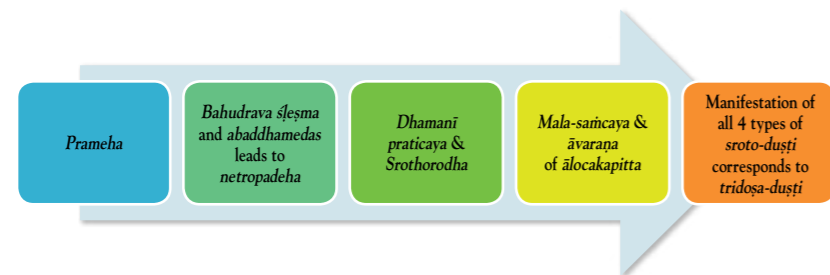


Chart 3: The ayurvedic view of the genesis of retinal damage in diabetic retinopathy
Diabetes → Liquefaction of kapha and excessive free fatty acids leads to coating of retinal vessels → atherosclerosis and blockage of channels → accumulation of filth and blockage and coverage of the viewer pitta (ālocaka-pitta) → Vitiation of all three humors

(śleṣmika abhiṣyanda) which if left untreated will turn into pitta type. This eventually generates laxity of blood vessels (dhamanī-śaithilya) leading to hemorrhage akin to the pathology of bleeding disorders (rakta-pitta). This damages the retina (avayava-nāśa). From chart: 3, it is evident that diabetes leads to all the 4 types of channel vitiation. A comparison table is given below illustrating symptoms of Diabetic Retinopathy with srotoduṣṭi prakāra.

Diabetic Retinopathy Symptoms	Types of Channel Vitiations (srothoduṣṭiprakara)
Retinal vessel occlusion	Obstructions (saṅga)
Dilated Tortuous veins	Varicosity (sira-granthi)
Blot and dot hemorrhage	Extravasations (vimargga-gamana)
Vascular leakage	Extravasations (vimargga-gamana)
Neo-vascularisation	Over-activity (atipravṛtti)
Vitreous hemorrhage	Extravasations (vimargga-gamana)
Secondary glaucoma	Obstructions (saṅga)

Treatment Principle of Diabetic Retinopathy

The treatment should be based on the pathological changes observed in diabetic retinopathy. According to this view the medicines used should fulfill the following criteria.

- ▶ Wholesome to the eye (cakṣuṣya)
- ▶ Digestion of the raw toxin (āmapācana)
- ▶ Removal of blockage (sroto-vibandha hara)
- ▶ Removal of covering by the humors (āvaraṇa sāmaka)
- ▶ Arresting of bleeding (rakta-pitta sāmaka)
- ▶ Pacification of vāta (vātānulomana)
- ▶ Rejuvenation (rasāyana)
- ▶ If there is macular edema- treatment of edema (śopha-hara cikitsā)
- ▶ Coating on lids (biḍālaka), eye wash (seka), eye-drops (āścyotana), eye-pouch (piṇḍī), oil retention on scalp (śiro-vasti), scalp irrigation (śiro-dhāra), nasal medication (nasya) and retention of medicated ghee on eyes (tarpaṇa) will be useful.
- ▶ Āścyotana –Applied during initial stage of DR like abhiṣyanda especially like abrading (lekhana) and healing (ropaṇa) type

Indication – Initial stage of retinopathy

Predominant doṣa – Pitta

▶ Seka :- Used in pitta predominant disorders especially when there is inflammatory exudates

Juices (svarasa), medicated milk (kṣīra-pāka), and decoctions (kaṣāya) etc may be used

Eye wash with milk medicated with licorice (yaṣṭimadhu) or with decoction with raisins will be useful.

Tarpaṇa

Indications-Vāta predominant conditions like

1. Atrophic conditions of retina (dṛṣṭi-paṭala) which is the end stage diabetic retinopathy.
2. Other Degenerative conditions.

Medicines that can be used are
1. Paṭolādi ghṛta, triphalā ghṛta - Non Proliferative DR
2. Jīvantyādi ghṛta, Śatāhvādi

tarpaṇa ghṛta - Proliferative DR

According to Ayurveda, DR is a disease characterized by manifesting all the four types of channel vitiations in its chronic stage. Disease can be corrected to a certain extent by controlling blood sugar and with various types of ophthalmic medications. Preventive measures are having significant role rather than curative procedures. As Vāgbhaṭa says 'the perseverance of the universe

directly depends on the organ eye. Even if one possess immense wealth and knowledge his life is futile if he is blind'. Hence one should take special care of the eyes. □

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Knee repair surgeries, a waste of time?

The New England Journal of Medicine recently published a study by the Finnish Degenerative Meniscal Lesion Study (FIDELITY) finding that, the benefits of keyhole operations to repair degenerative meniscal tears are no better than sham operations. The study is very significant as these surgeries have become the most common surgical procedure after cataract surgery.

In this new study, the Finnish team recruited 146 patients aged from 35 to 65 with meniscal tears that had developed through wear and tear rather than injury or trauma.

The patients were randomly assigned into two groups: one underwent keyhole surgery to correct the damaged meniscus and the other underwent a sham procedure.

In the sham procedure, the surgeons simulated the real operation. They manipulated the patient's knee and handled surgical instruments near the knee so the patient was under the impression they were being operated on.

Neither the patients, nor their caretakers and not even the re-

searchers analyzing the results knew which patients had undergone the real procedure and which had just had the sham operation.



The results show that a year later, both groups of patients had an equally low rate of symptoms and were equally satisfied with the overall situation of their knee. Both groups of patients said they believed their knee felt better than before the operation.

The state adjunct professor Teppo Järvinen, of the Helsinki University Central Hospital, says:

"Based on these results, we should question the current line of treatment according to which patients with knee pain attributed to a degenerative meniscus tear are treated with partial removal of the meniscus, as it seems clear that instead of surgery, the treatment of such patients should hinge on exercise and rehabilitation."

Ayurveda offers substantial relief for patients with knee problems that cause stiffness and pain caused by gradual wear and tear as well as injury or trauma. There are a wide array of medicines and procedures to manage knee problems. Along with these, Kerala Ayurveda has a wide range of proprietary medicines like Rasna-Guggulu, RG Plus, KM Iepam, Ostoact tablets, GT Capsules, Myaxyl cream, oil, tablets and capsules for effective management of muscle and joint problems. Effective medicines, backing of literature and centuries of experience have given Ayurveda the might to combat musculoskeletal diseases.



Pamper your eyes, the Ayurveda way!

Ideal diet and lifestyle practices for healthy and happy eyes



Dr. Nimin Sreedhar
BAMS

Our's are not the best eyes in the world. The eyes of an octopus are more advanced. A mantis shrimp, yes a shrimp, has 16 color sensors while we have only three. Unlike an owl, we don't have night vision. Neither can we sense Infra Red nor can we turn our eyes 360 degrees around. But what we do have is a pretty decent brain. Even though the brain corrupts most of the data the eyes provide, the eyes are very dear to the brain. There is no other sense organ that feeds the brain with as much information as eyes do. Conversely, the brain has allocated around 30 of its most sophisticated centres to eyes and vision alone. No other sense organ has this privilege.

The brain takes much effort to make the laborious and complex process of vision appear simple- so simple that we often take the eyes for granted and at times even neglect their existence. We tend to tire our eyes out with TV and computer screens. We try to wash or blink



away mild problems of sight. We let our eyes take the full impact of sunlight and pollution. We even harm it by burying it under all kinds of wrong makeup.

The body has numerous mechanisms to safeguard the eyes, like the brow ridges, lids, lashes, conjunctiva and even tears. But that alone is not enough. We also have to take some active steps for eye health. Realising that the eyes are precious is the very first step in eye-care. If you have taken this step, here are a few more to keep your eyes healthy and happy.

Diet control

► Eyes are very sensitive towards pitta increase. So foods increasing pitta should be kept to

a minimum. Very spicy and hot food should be forgotten.

- Sour taste is the most unwholesome to the eyes. Vinegar (*śukta*), rice wash (*āranāla*) etc are not good for the eyes. (Su.Utt.1.1)
- Things heavy to digest like baked snacks made of white flour (*maida*), deep fried foods etc are also not very healthy to the eyes.
- Care should also be taken to avoid incompatible food combinations (*viruddhāhāra*).
- Incompatible foods and overeating can cause inflammation (*abhiṣyanda*) which can directly affect the eyes. (A.Hr.Utt.8.1)
- Cereals like barley (*yava*), wheat (*godhūma*), rice (*śālī*),

millet (*kodrava*) etc that are aged are wholesome to the eye. (A.Hr.Utt.16.60)

- Pulses that mitigate kapha and pitta, like green gram are also good to the eyes. So are kapha-pitta reducing leafy vegetables and meat from arid region. (A.Hr.Utt.16.61)
- Pomegranate and grapes are good for eye health. But of course, the best fruit is gooseberry. (A.Hr.Utt.16.62)
- Sugar and rock-salt, though wholesome to the eyes should be used with moderation.
- Pure rainwater is an excellent eye tonic (A.Hr.Utt.16.62).
- Meat of birds is generally considered to be wholesome to the eye. The term used is *śakunāsanaṁ* which is also interpreted as eating in small quantities (A.Hr.Utt.13.100).
- Do not use horse gram in excess. (Su.Utt.1.1)
- *Triphalā* is a wonder formulation. It is one of the best medicines for eye health. Use it regularly in the form of powder to take internally or as filtered decoction for eye-wash. (A.Hr.Utt.13.98)
- Ghee is very wholesome to the eyes. Many kinds of medicated ghee are used as eye-fill (*tarpaṇa*).

Lifestyle modifications

- Make oil massage (*abhyāṅga*) a habit. It has a nourishing effect (*dṛṣṭi-prasādana*) on the eyes (A.Hr.2.9)
- Bathing freshens up all senses. But avoid head-wash using hot water. Hot water not only affects vision, it damages hair too. (A.Hr.Sū.2.18)
- Taking a cold shower when your body is hot is unhealthy and can cause not just eye diseases but a whole range of ENT

Adorn your eyes... with care



- » Apply *kājal* under the lash-line to prevent blocking of glands.
- » Many modern cosmetics attract microbes. So do not use them if they are more than three months old after opening.
- » Swapping eye makeup kits or applicators is a bad habit and may spread infections.
- » Glitter, glow-in-dark, shiny and metallic eye shadows are harmful. They are a common cause of corneal irritation.
- » Cosmetics that are past its use-by date can cause serious infections.
- » Identify allergens and look out for them in your cosmetics.
- » Never use sharp things in or around your eyes.
- » Using dried mascara can injure the eyes.
- » Do not mix and match. For example, do not use the same liners for both eyes and lips.
- » Stay steady and calm while doing eye makeup. Avoid doing it while walking or while in a moving vehicle.
- » If you feel that your eyes are unwell, never put makeup on them.
- » Do not buy cheap cosmetics and applicators.
- » Keep your cosmetics tightly closed and your applicators thoroughly cleaned.
- » Do not sleep with your eye makeup on.

problems as well. (A.Hr.Utt.23.67)

- Ayurveda encourages daily use of *kājals* with Antimony sulphide (*sauwīrānjana*). Besides defining your eyes and making you pretty, these *kājals* keep the eyes moist and unctuous.

It makes the lashes denser and prevents its fall. Another variety of eye liner made of tree-turmeric (*dāruharidrā-Berberis aristata*) called *rasānjana* may be used once in a week to flush out impurities



and to remove any clogging of channels. It prevents kapha vitiation in the eyes too (A.Hr.Sū.2.5-6).

▶ Derangements in sleep patterns can harm the eyes. You might have noticed the eyes getting dry and blood shot when you keep awake at night. If you oversleep during daytime, the eyes become foggy and heavy.

▶ Your pillow also has a say in eye health. Pillows that are too high or low can interfere with blood flow to the head.

▶ Do not mess with your bodily urges. These are reflexes and if held or induced forcefully, can cause the entire body mechanism go haywire. Try holding a sneeze and you will know what I am talking about. Holding sleep can make eyes heavy. Holding flatus, feces, urine, tears and vomit have direct adverse effect on eyes (A.Hr.Sū.4.)

▶ Do not try to focus on tiny objects or distant objects for long. These activities put immense strain on the eyes and can eventually hamper vision.

▶ Fervent movements are stressful to the eyes. Watching an intense ping-pong match or reading while travelling on Indian roads will fall under this category. (A.Hr.Utt.13.100)

▶ Sit upright and keep your head straight. Awkward head positions stain the eyes.

▶ Working long time with computers, using sewing machines, welding and outdoor works are potentially harmful to the eyes. Avoid them or take sufficient precautions. Make it a habit to blink regularly. You may also use herbal products that will keep your eyes cool, moist and clean.

▶ Wear protective eyewear when outdoor. Besides making you snazzy, cooling glasses block harmful rays and pollutants too.

▶ Night driving is very stressful to the eyes, no to mention those glaring high-beams. Take frequent breaks and wear anti-glare glasses while driving at night.

▶ Keep your mind relaxed and focused. It will certainly add an appeal to your eyes. (A.Hr. Utt.13.100)

▶ Anger and sorrow takes the life out of your eyes. (Su.Utt.1.1)

▶ Worship your feet (*pādapūja*). Take good care of them (A.Hr. Utt.13.98). It is believed that the feet have a direct link to the eyes via two nerves. Therapies like foot massage, irrigation (*dhāra*), paste (*lepa*) etc have effect on the eyes too. So does heat, impurity and injury. Have you ever stepped on hot tarred road barefoot? Or have you ever got a blow to your soles. Didn't your sight get all yellow or blurred instantly? So always use footwear, keep the feet clean and

do regular oil application on the feet. (A.Hr.Utt.16.65-66)

Ayurveda therapies

▶ All purification procedures (*pañcakarma*) are beneficial to the eye.

▶ The following are the methods of applying medications to the eye:

» *Aścyotana*-Eye drops.

» *Seka*- Eye wash/ Irrigation

» *Anjana*- Collyrium/ eye salve/ eye lining

» *Tarṣaṇa*- Eye fills/ fat retention in the eyes

» *Putāpāka*- Retention of baked juices in the eye

» *Pinḍī*- Holding medicated pouch over the eye

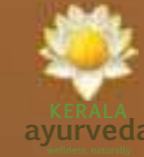
» *Viḍālaka*- Medicine application over eyelids

Quite simple, isn't it? In fact most of the preventive measures are simple, just like that old saying about a timely stitch. Try and put all of them into your regular practice. When the body is striving so hard to protect itself, shouldn't we contribute too? □

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Netra Tarpaṇa

Dr. Vani Balakrishnan
BAMS

Netra-tarpaṇa is one among the most conventional healing regimen applicable to the eyes. In Sanskrit, the term 'netra' means 'eyes' and 'tarpaṇa' means 'to satisfy'. Netra-tarpaṇa is also known as netra-vasti or akṣi-tarpaṇa

Eyes being predominant in fire (*agni*), make them liable to get diseases of pitta predominance. Current lifestyle and lack of proper relaxation for the eyes put them in vulnerable situations that can lead to various pathological conditions associated with vāta also.

Netra-tarpaṇa is a procedure in which a retention wall with dough is made around the orbit. This is filled with medicated ghee and is retained for some time.

Conventionally, ghee (*ghṛta*) is commonly used for this procedure although breast milk (*stanya*), fat (*vasa*), etc. are also being indicated in certain specific conditions. Oils (*taila*), sesame in particular, should not be used for doing this procedure as taila is described to be unwholesome for the eyes (*acakṣuṣya*).

Ghee possesses an all-pervasive attribute known as 'yoga vāhitva' which enhances the property of the drug with which it is medicated. It is also capable of passing through minute channels (*srotas*). Breast milk is specifically indicated in vāta-pitta, blood (*rakta*), traumatic (*abhighāta*) conditions of eyes whereas fat is indicated in conditions like night-blindness (*naktāndhya*), cataract (*timira*) of vāta nature, difficulty in opening eyes

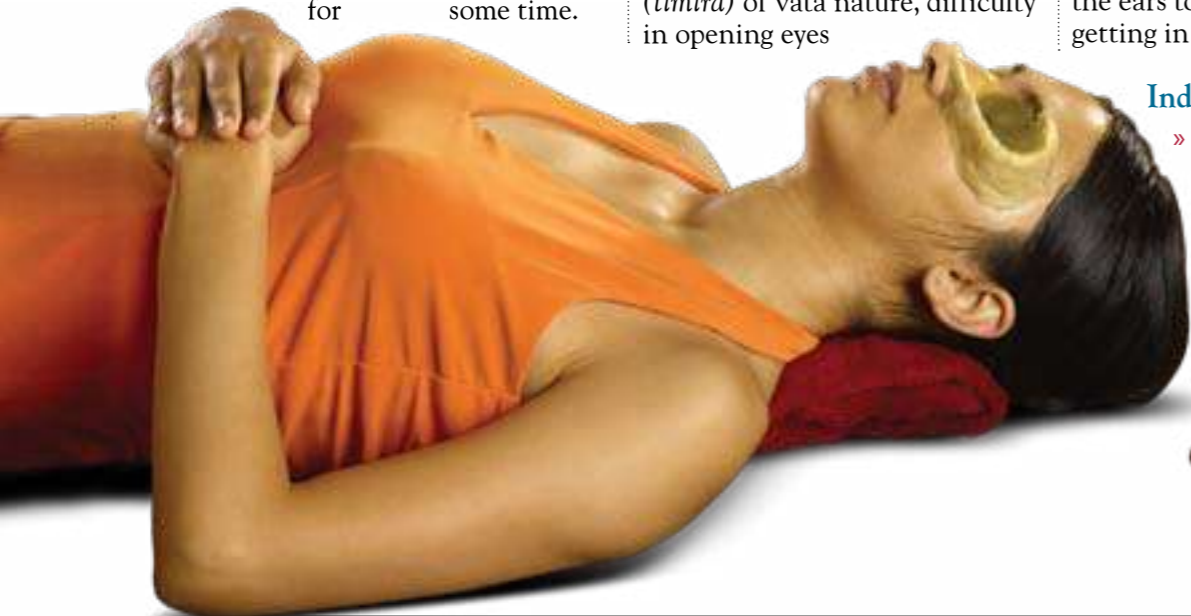
(*kricchrāvabodha / kricchronmī-lana*).

Precautions

- ▶ Netra-tarpaṇa is preferred to be done in individuals who have undergone purificatory therapies of both head and body.
- ▶ Associated complaints like pain, redness, irritation, excessive lacrimation or exudations have to be relieved before doing tarpaṇa.
- ▶ Not to be done on cloudy days, very hot or cold climates, when the individual is worried, exhausted, feeling giddy or having any other complications in the eyes.
- ▶ Therapy room should be devoid of influence of direct sunlight, bright light, wind or noise.
- ▶ Cotton pads should be kept in the ears to prevent ghee from getting in the ears.

Indications

- » Impaired vāta and pitta
- » Fatigue,
- » Dryness, roughness, loss of eye lashes
- » Injury, redness, blackouts



- » Squint, hazy (*āvila*) eyes
- » Swelling in eyes, blurred vision, ptosis, difficulty in opening and closing the eyelids
- » Vascular congestion, haemorrhage, corneal opacity, pannus, optic nerve atrophy
- » Glaucoma, cataract, trigeminal neuralgia, xerophthalmia

Contra-Indications

- » Infection of eyes
- » Trauma
- » Conjunctivitis
- » Persons contra indicated for nasal instillations (*nasya*)

Materials Required

- » Black gram powder (*māṣa-cūrṇa*) and barley powder (*yava-cūrṇa*)
- » Medicated ghee
- » Vessels
- » Stove
- » Towels

Procedure

Black gram and barley powder has to be blended into thick dough with which a small circular tank is made. Nowadays readymade tanks are also available in the market. This has to be firmly adhered around each eye in such a way that there is enough space to accommodate the ghee without leaking. The tank should be sufficiently wide and tall to hold enough ghee needed to immerse the eye lashes completely. Its dimension should let the eyes open and close comfortably without spilling the liquid. Generally, the height of this tank would roughly be about 1 1/2 inches (2 *angula*).

Keep cotton swabs, cloth and collecting jar ready by the side to address any unexpected spillage or leak.

The ghee which is melted and made slightly warm by keeping in a water bath has to be filled into the tank slowly from above the medial canthus (*kanīnaka-sandhi*) of each eye when the eyes are closed. Then ask the patient to open his eyes slowly. The medicated ghee has to be retained as per the prescribed duration.

After the require time, the ghee may be drained out from the tank by making a small opening near the lateral canthus and collected into a vessel. Gently remove the tank from around the eyes and wipe with a clean piece of cloth or cotton pad. Later wash the area with cotton soaked in lukewarm water.

Duration of the procedure

The duration is described in terms of *mātras* and varies according to the conditions.

A *mātra* refers to the unit of time and is defined as the time taken for a single blink.

Duration for different conditions

- ▶ Diseases of eyelids (*vartma-gata-roga*) and Glaucoma (*adhimantha*) – 1000 *mātra*
- ▶ Diseases of the canthi (*sandhi-gata-roga*) – 300 *mātra*
- ▶ Diseases of the sclera (*sitā-roga*) – 500 *mātra*
- ▶ Diseases of the cornea (*asitā-roga*) – 700 *mātra*
- ▶ Diseases of the pupil (*dr̥ṣṭi-gata-roga*) – 800 *mātra*

In terms of the humor involvement, yet another consideration regarding the duration of the treatment is seen

- » Vāta - 1000 *mātra*
- » Pitta – 600 *mātra*
- » Kapha – 500 *mātra*

In a healthy person, tarpaṇa could be performed with a preventive intention. The duration can be 500 *matras* for this purpose.

Post- Therapeutic Measures

- ▶ Medicated smoke inhalation (*dhūmapāna*) – to remove the excess unctuousness (*kṛeda*) due to increased kapha
- ▶ Juice expressed after baking (*putapāka*) - to remove the fatigue of the eyes after tarpaṇa

Benefits

Tarpaṇa, if done correctly, has the following benefits:

- » Relief of symptoms
- » Good sleep
- » Clear perception
- » Clarity and brightness of vision
- » Improved functioning of the eyes

Excessive tarpaṇa can cause:

- » Heaviness
- » Excessive lacrimation
- » Over Unctuousness in the eyes

If done inadequately, tarpaṇa leads to:

- » Dryness of eyes
- » Dirty lacrimation
- » Aggravation of the condition

Management of complications

- ▶ For excessive tarpaṇa: Drying therapies (*rūkṣaṇa*) to evoke dryness
- ▶ For inadequate tarpaṇa: Unctioning (*snehana*) - to evoke unctuousness. □

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Chicken Fry & Joint Pain



Dr. Karthik Krishnan
BAMS

A 34 year old lady came to OPD with complaints of severe left-knee-joint pain and restriction of movement for past few years. She also had pain and swelling over her finger joints of either hands.

History of Presenting Complaints

The patient was apparently normal before 4 years. Gradually she developed pain and swelling on her distal finger joints. She did not seek any medical assistance and ignored the symptoms. Later she developed pain and swelling over her left knee joint which aggravated during morning hours and decreased afterwards. The nature of pain was churning. She felt that hot summers aggravated the pain while cold climates helped in relaxing. She is currently under allopathic medication for the same for past two years and found a little relief.

No relevant past history. No history of DM, hypertension or any major surgeries.

No history of falls or RTA.

Relevant occupational and socio-economic history

She works in an IT company from 9.00 am in the morning to 6.00pm in the evening. In addition she also does the chores of her home which includes two sons and her husband.

Personal details

Diet : mostly non veg. Fried chicken is a favorite

Sleep : 6-7 hours. Pain aggravates at morning

Bowel : 2-3/day nil/night no constipation
Bladder : 4-5/day 1/night
Exercise : nil
Addictions : nil

Vital Examinations

BP : 130/80 mmhg
Pulse: Rate -75/min; Rhythm – regular;
Nādi-vāta-pitta
Respiratory rate: not examined

Systemic Examination

Musculo-skeletal- left knee

Inspection (*darśanam*)- swelling present, redness present
Palpation (*sparśanam*)- *uṣṇa*
Crepitus- present
Interrogation (*praśnam*)
- Nature of pain- churning,
- Burning sensation- present.
Range of movements-
- Flexion- restricted, painful,
- Extension- painful

Investigations

ESR – 42mm/hr.
RA factor positive

Vyādhi Prakaraṇam

Vata-vyādhi

Differential Diagnosis

Āma-vāta ruled out due to absence of severe pain resembling scorpion bite (*vṛścika viddhavat*).

Final Diagnosis

Vāta-rakta – *Gambhīram*

Conclusion of diagnosis

The patient has been doing a sedentary

office job throughout her career and her dietary likings (eg : chicken dry fry) for an extended period might have contributed to vāta-pitta-rakta vitiation. This humoral vitiation then gets localized at knee joint (*jānu sandhi*) probably due to the derangement of space (*kha vaiguṇyam*) common to joints and has caused the vāta-rakta. During the time of spread (*prasara*), the humors in travel should be responsible for pain and swelling at distal joints which appeared as the prodromal symptom (*pūrva-rūpa*) of shifting pain in the base of feet or hands.

Treatment:

1st Phase

Objective: To digest the metabolic toxins (*āma*) and to reduce edema (*śopha*)

Internal

1. Guggulu-tiktakam kaṣāyam [specifically indicated for vāta-rakta, has an action in vata localized at the joints / bones / marrow (*sandhi-asti-majja gata vāta*)]. 15ml medicine + 60 ml lukewarm water, twice daily, before food.

2. Kokilākṣam kaṣāyam [indicated in vāta-rakta – reduces edema (*śopha-hara*)-diuretic to some extent]. 15ml medicine + 60 ml lukewarm water, twice daily, two hours after food.

3. Gokṣurādi-guggulu [reduces edema] 2-0-2

4. Mild purgation (*mṛdu-virecana*) with Trivṛt lehya

External

1. Lepa with Jaḍamayādi cūrṇa [kalka of Balā-guḷūcyādi taila, indicated for vāta-rakta with edema]- for three days

2. Jambīra Piṇḍa Sveda [Lemon (*jambīra*) cleanses and opens the channels (*vaiśadyakāraka*) and is effective in relieving stiffness]- for 3 days

2nd phase-

Objective: To mitigate and channelize vāta

Internal

1. Balā-guḷūcyādi kaṣāya [more on the nourishing (*br̥mhaṇa*) side]. 15ml medicine + 60 ml lukewarm water, twice daily, before food.

2. Daśamūla-harītakī lehya [to rectify digestive problems and swelling]-1 tsp, bed time

3. Kaiśora-guggulu tablet [indicated in trihumoral vāta-rakta conditions]. 2-0-2, with kaṣāya. Adjuvant : warm water.

External

1. *Abhyanga* with Ketakimūlādi taila [a sensible choice in vāta-pitta and vāta-rakta conditions]- for five days.

2. Oil retention over knee joint (*jānu-vasti*) with Balā-guḷūcyādi taila [Mitigates vāta-rakta, burning sensation (*dāha*) and pain. Ref – Cikitsāmanjjari vāta-rakta Cikitsā]- for five days.

On discharge:

Objective: Nourishment (*br̥mhaṇa*) without causing humoral imbalance.

1. Mahārāsnaḍi kaṣāya [Nourishing (*br̥mhaṇa*)+ cures all types of vāta diseases] Adjuvant : warm water.

2. Guggulu-tiktaka gṛṭa- 1 tsp at night

3. Sida (*balā*)+ Tinospora (*guḍūci*) milk decoction (reference- Cikitsāmanjjari vāta-rakta Cikitsā)- 25 ml in the morning after food.

Advice to the patient

1. The patient was advised to use more vata-pitta reducing foods such as milk and milk products.

2. Dry food items, fried chicken and meat items, junk food to be avoided.

3. Salty, sour, excess pungent food items were told to be avoided.

Present Condition

The patient is currently on regular follow up and her finger joint pains have totally subsided with no swelling at all. There is tremendous improvement in the condition of the left knee. She is now able to move the joints freely and effortlessly. However, occasional pain in the mornings are still reported. She is responding favorably to the discharge medicines and is told to continue it for two more weeks. □

Dr. Karthik is the
Medical Officer at Kerala Ayurveda Retreat, Aluva

Moringa Leaf Dish

Any kind of eye disease, be it of vāta, pitta, kapha or even tri humoral, is instantly relieved on application of tender moringa leaf juice with honey". This is the 9th verse from the 16th chapter of Aṣṭāṅga-Hṛdaya-Uttarastāna. This verse is one of the best testimonials on moringa leaves and its role in eye health.

Moringa (*Moringa oleifera* / also known as horse-radish or drumstick tree) is called *śigru* in Sanskrit. All classical texts and dictionaries in Ayurveda describes its property to improve eye health (*caḡṣuṣya*). It is mentioned in Ṛg-veda as a household plant. It is an inevitable part of 'grandma

medicine'. Usually given as a nervine tonic, its bark is ground with butter and applied locally for ringworm infestations. It's seeds are used for nasal instillations (*nasya*), leaves and stem in sudation and in formulations for vāta diseases. Moringa leaves and seeds have aphrodisiac properties as well. A lot of research and literary works have rediscovered its potential and moringa is getting a lot of limelight lately.

Apart from its therapeutic values, it has always been a local delicacy in Kerala cuisine too. Here, we are introducing a popular recipe with moringa leaves which is highly beneficial for eye and nervine health. Presenting, Moringa leaf dish:

You would require:

1. Tender Moringa leaflets-fresh: 3 cups
2. Coconut : ¼ of a whole kernel (grated)
3. Green chillies: 4 nos
4. Garlic: 4 pods, peeled.
5. Cumin seeds: ½ tsp
6. Red chillies (dried): 2-3 nos
7. Coconut oil: 3 tbsp
8. Mustard seeds: 1 tsp
9. Onion (chopped): Handful
10. Curry leaves: a few
11. Turmeric powder: ¼ tsp
12. Salt: to taste



How to prepare

The grated coconut, garlic, cumin seeds, turmeric powder and green chillies together are ground coarsely in a grinding stone or in a mixer. Using your hands, this coarse mixture is mixed well with moringa leaflets and some salt.

Meanwhile the coconut oil is poured into a cooking pan and is heated. On steaming, mustard seeds are added. On popping the mustard seeds, red

chillies, onion and curry leaves are added to the pan and saute'd. To this, the mixture with moringa leaflets is added and stirred well. The mixture is spread evenly in the pan which is then closed and cooked for three to four minutes in medium flame. The lid is opened again and the contents are stirred to prevent clumping. It is saute'd for a few more minutes and taken off flame when ready.

Make sure that the moringa

leaflets are tender and fresh. Avoid any stalk or stem or it will make the dish bitter.

Serving

Serves four. This dish is usually served as a side dish of meals. Alterations of this recipe can be used as a stuffing in Indian breads like kulcha or as a filling in sandwiches.

That's it! Go ahead and savor this dish. Hope you will like it. Your eyes will love it for sure. □

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Ilanir Kuzhambu

Many ayurvedic formulations enjoy celebrity status in Kerala. At times, the knowledge and usage of such medicines become so common that we overlook its real knowledge and usage. Ilanir kuzhambu is a medicine for the eye. Today, it is used in a whole lot of conditions in a whole lot of methods. Ilanir Kuzhambu is mentioned in Sahasrayoga Sitaroga Cikitsa, No. 52.

The ingredients of the formulation and their properties are given in the table below:

Sl.No	Ingredient	Taste	Property	Potency	Post Digestive Effect	Action	Indication
1	Darvee Berberis aristata Indian berbery	Bitter, Astringent	Light, Dry	Hot	Pungent	Scraping (<i>lekhana</i>)	Ulcers, Eye diseases
2	Amalaki Emblia officinalis Indian gooseberry	All except Salty- Mostly sour	Light, Dry	Cold	Sweet	Eye health	VPK ↓, Eye diseases
3	Haritaki Terminalia chebula Chebulic myrobalan	All except Salty- Mostly astringent	Light, Dry	Hot	Sweet	Scraping (<i>lekhana</i>), Eye health	VPK ↓, Ulcers, Eye diseases
4	Vibhitaki Terminalia bellerica Belleric myrobalan	All except Salty- Mostly astringent	Light, Dry	Hot	Sweet	Bursting (<i>bhedana</i>), Eye Health	PK ↓, Ulcers, Eye diseases
5	Madhuka Glycyrrhiza glabra Liquorice	Sweet	Heavy, Unctuous	Cold	Sweet	Eye Health	VPK ↓, Ulcers, Eye diseases
6	Nalikerambhas Cocos nucifera Coconut	Sweet	Heavy, Unctuous	Cold	Sweet	Cooling	VP ↓
7	Sasi Cinnamomum camphora Camphor	Bitter, Pungent, Sweet	Light, Dry	Cold	Pungent	Eye Health	K ↓, Eye Diseases
8	Saindhava Salt	Salty	Light, Unctuous, Sharp	Cold	Pungent	Eye Health	VPK ↓, Ulcers, Eye diseases
9	Maksika (Honey)	Astringent, Sweet	Light, Dry	Hot	Pungent	Eye Health, Cutting (<i>chedana</i>)	K ↓, Cleansing and healing of wounds, Eye diseases

Method of preparation:

- ▶ Equal amount of drugs 1 to 5 has to be taken together and made into coarse powder.
- ▶ The powder is added with coconut water in a quantity 16 times to that of the powder.
- ▶ It is kept under mild flame and reduce to 1/8th of the original quantity.
- ▶ The decoction thus prepared is further reduced into a thick viscose form called *rasakriya*.
- ▶ The *rasakriya* is cooled and ingredients 5, 6 and 7 are added to form a thick liquid.

Mode of application:

It has become a common practice to apply Ilanir Kuzhambu as eye drops (*aschyotana*) over eye-lining (*anjana*). As this formulation is thick, viscous and concentrated, it acts best when used as a lining in the lower lid margin. This will help the medicine to spread evenly and that too with much lesser grittiness that is usually feared of. The Sanskrit name of this formulation, Nalikeranjana, suggests this application. Eye liners used for diseases like pterygium must have scraping



property and predominance of pungent or astringent tastes (A.Hr.Su.23.10). Hence Ilanir Kuzhambu qualifies as an excellent scraping eye liner (*lekhana anjana*). The instrument used for *anjana* is sterile probe (*salaka*). The medicine is applied from medial end to the lateral end of the lid margin. Close the eyes and roll the eyeball after applying. An eye wash with decoction of the three myrobalans (*triphala*) is advised after grittiness (*samrambha*) is relieved. The remaining grit and mucus is removed with a sterile cloth. (A.Hr.U.23.25)

Time of application:

The ideal time to apply sharp eye liners is night time. The softness of nighttime and sleep will stabilize vision. However extreme cold nights are to be avoided. (A.Hr.U.23.15-21)

Indications

- ▶ Wounds & ulcerations (*vraṇa*)
- ▶ Pterygium (*arma*)

- ▶ Certain types of cataract [*Pittaja timira*-Sees lighting or sparks, fireflies or colors resembling peacock or partridge feathers or blue spots. (A.Hr.U.12.13)]
- ▶ Other diseases of the sclera and conjunctiva due to pitta.

Contraindications

It would be wise to avoid using Ilanir Kuzhambu in *vata* disorders of the eye like dryness, pain, ptosis etc. Also, one should abstain from eye lining if the person is scared, non-cooperative, feverish, having indigestion or headache, hungry or thirsty or soon after any purification. (A.Hr.U.23.22-23)

Analysis of Ilanir Kuzhambu based on ingredients:

One common factor is distinctively evident from the study of these ingredients. It is that all the ingredients are having properties to promote eye health (*caḥṣya*) and almost all of them are also

individually used in several eye diseases. Except for liquorice and coconut water, all other ingredients are having light (*laghu*) property. An amazing balance has been brought about in the overall potency and post digestive effect of the formulation. Also, most ingredients reduce pitta and kapha together.

Perhaps this balance helps Ilanir Kuzhambu in preventing the vitiation of pitta or kapha. Do remember Aṣṭāṅga Hṛdaya mentioning that eyes are the seat of pitta and are scared of kapha (A.Hr.Su.2. 6). The scraping or cutting properties of many ingredients also indicate the sharp nature of Ilanir Kuzhambu making it effective in pterygium and cataract.

The use of coconut water over plain water in processing this formulation could be to make it milder or less irritating. The specific action of many ingredients in the cleansing and healing of wounds is reflected in the overall action of the formulation too. □



Seeing with the ears

Editor-in-Chief

Can you see with your ears? Snakes are called 'eye hearers' (*cakṣuśraṇa*) in Sanskrit as it is thought that they hear with their eyes. You and I know that it is not true. Snakes detect your footsteps not with their eyes, but with their

scaly skin.

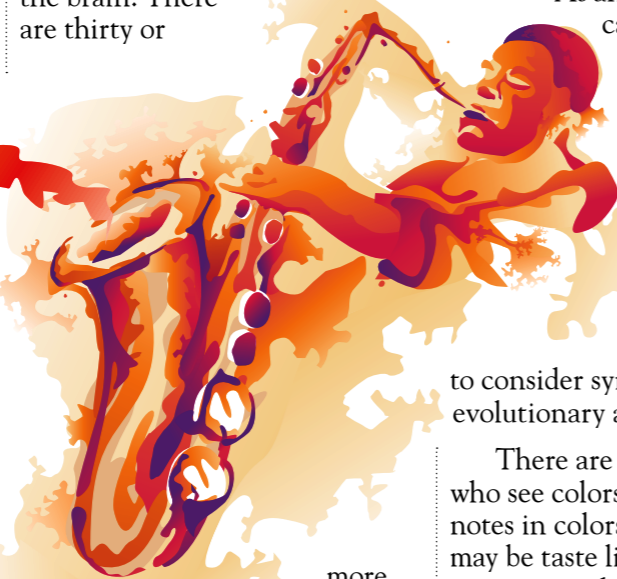
There are people who see sound, that too in color. It is a sub-pathological state called synaesthesia. It is a condition where one sensory perception evokes another perception through cross linking. Most of us are not having this peril or gift.

Synaesthesia should be considered as a gift as it is genetically linked and may be a proof of advancement of human race by evolution through mutation. All synaesthetes are not similar. Some confine to various modes of vision alone. For example some see various numbers shaded in different colors, even when all the numbers are printed in black.

Seeing color when there is no color is not new medical information. There are many pathological conditions where the patient sees color where

there is no color, the best noted among them is jaundice where the patient sees everything yellow, even when the objects are not yellow. In glaucoma, the patient may see rainbow hallos. It is seeing a rainbow shade on objects. When you use eye drops to dilate your pupil, then also you see rainbow hallow. When you have a slight corneal edema, rainbow spectrum may occur due to edema of the path of light.

In the case of synaesthesia, the problem is not with the eyes. Eyes are innocent. It is an analytical error. The analysis is done by the brain. There are thirty or



more areas in brain to lyze and thesize what you see. Some of these areas are close neighbors to areas of other senses. Good neighbors have good relations. These unwarranted relations, links or cross wiring between neighboring areas of brain may

end up in chaos as they result in perception errors. Synaesthesia is such an error.

Why an error is dignified as advancement of human race? It is not yet time to confirm that synaesthesia is advancement. One thing is for sure. Most of the synaesthetes, if not all, have high creativity. There are famous poets and musicians among synaesthetes.

Creativity is noted for aberrations and is considered as advancement in humanity. It is creativity of high order that demarks man from ape.

At any rate, creativity cannot be

considered as retardation, even though in my experience many of those who are retarded have high level of creativity. Hence we are prompted

to consider synaesthesia as an evolutionary advancement.

There are famous musicians who see colors to sound or see notes in colors. Synaesthesia may be taste linked, smell linked or even touch linked to cause experience of different tastes, smells or touch sensations when the sensory input is totally different.

Who said sense faculties are sense specific? Even if they are, the sensory areas need not be always pious enough to avoid extramarital relations with other senses! □

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