GLAUCOMA

Unlike macular degeneration and cataracts which involve damage to tissues in the eyes, glaucoma is characterized by an imbalance between the production and outflow of fluid in the eye. This creates abnormal elevated eye pressure and can lead to loss of peripheral vision. "tunnel vision" as it is called, can happen very quickly as in acute closed-angle glaucoma, or progressively over time as in the more common chronic glaucoma.

Collagen is the most abundant protein in the body, including the eye. In the eye it gives strength and integrity to the tissues. Errors of collagen metabolism (eg osteogenesis imperfecta, Ehlers-Danlos syndrome and Marfan's syndrome) are often associated with eye complications - glaucoma, myopia (near sightedness), retinal detachment, ectopia lentis (dislocated lens) and blue sclera.

Vitamin A, B complex are important. Glaucoma is often an indication of adrenal exhaustion therefore nutrients are necessary to support the adrenals.

Abnormalities in the tissue at the back of the eye, through which pass the optic nerve fibres and blood vessels, the connective tissue network the eye fluid must pass through to leave the eye and the blood vessels in the eye, have all been observed in glaucomatous eyes. These changes may result in elevated inner eye pressure or lead to progressive loss of peripheral vision.

Italian physicians have significantly reduced the intra-ocular pressure in the eyes of glaucoma patients by administering large doses of Vit. C (500 milligrams per 2.2 pounds of body weight).

Acute (closed-angle glaucoma): severe throbbing pain in eye with markedly blurred vision.

- **pupil moderately dilated and fixed.**
- **pupil does not respond to light appropriately.**
- **nausea and vomiting is common.**
- **increased pressure in the inner eye, usually on one side.**

Acute glaucoma represents a medical emergency. A person with suspected acute glaucoma should go immediately to an ophthalmologist or hospital accident and emergency dept. Effective therapy must be started within 12-48 hours or permanent loss of vision will occur within 3-5 days. An asymptomatic eye may convert spontaneously to acute glaucoma. The process can be precipitated by anything that dilates the pupil such as atropine and epinephrine-like drugs. Typical signs and symptoms include extreme pain, blurring of vision, inflammation of the eye and a fixed, dilated pupil.

Standard medical approach is immediately to reduce the eye pressure through the use of an osmotic agents, followed by surgery. Although the osmotic agent (such as glycerin, 1-2k/kg body weight missed with an equal amount of water) will usually quickly improve the symptoms, surgery is still necessary since each acute attack diminishes vision and contracts the visual field, and an apparently improving eye may worsen rapidly. Agents (eg. belladonna and ephedra) which dilate the pupils MUST BE STRICTLY AVOIDED.

Chronic (open angle) glaucoma:

- **usually asymptomatic until later stages.**
- **gradual loss of peripheral vision resulting in tunnel vision.**
- **extreme pain, blurring of vision, conjunctivitis, and fixed and dilated pupil in later, emergency stage.**
- **persistent elevation of inner eye pressure associated with pathological cupping of the optic discs, ie the portion of the eye where the optic nerve enters the eyeball**

Of foremost importance in achieving collagen integrity is optimal tissue concentrations of vitamin C. Furthermore, vitamin C supplementation has been demonstrated to lower inner eye pressure levels in

many clinical studies. A daily dose of .5 grams per kilogram body weight, whether in single or divided doses, reduces inner eye pressure by an average of 16 mm Hg. Almost normal tension levels have been achieved in some patients unresponsive to standard medical therapies (acetazolamide and pilocarpine).

The pressure lowering action of vitamin C is long lasting if supplementation is continued and intravenous administration results in an even greater initial reduction. Careful monitoring by a physician is required to determine the appropriate dose, as some people will respond to as little as 2 grams a day while others will respond only to extremely high doses, eg. 35 grams per day. Abdominal discomfort when using high doses is common, but usually resolves after 3-4 days.

The proposed mechanisms by which vit. C lowers inner eye pressure include increased blood osmolarity, diminished production of eye fluid, and improved fluid outfow. In the light of recent research however, its role in collagen formation may be the key to its action.

Bioflavonoids: To aid normal collagen metabolism further, bioflavonoid supplements, particularly the anthocyanosides (blue red pigments found in berries) are very useful. These compounds prevent breakdown of vit. C, improve capillary integrity and stabilize the collagen matrix by preventing free radical damage, inhibiting enzymatic breakdown of the collagen matrix and cross linking with collagen fibres to form a more stable collagen matrix. Vaccinium mytrillus (blueberry) extract is particularly rich in these flavonoid and anthocyanidin compounds and has been used with good results in reducing near-sightedness, improving night vision and reversing diabetic retinopathy. Rutin has also been demonstrated to lower inner eye pressure when used in conjunction with standard drugs.

Allergy: The successful treatment of chronic glaucoma by anti-allergic measures has been reported in the literature. In one study, many of the 113 patients demonstrated an immediately rise in intra-ocular pressure of up to 20 mm Hg (in addition to other typical allergic symptoms) when challenged with the appropriate allergen, whether food borne or environmental. Known allergic responses of altered vascular permeability and vasospasm could result in the congestion and edema characteristic of glaucoma.

Other:
Corticosteroids induce glaucoma by destroying collagen structures in the eye. Corticosteroid use should therefore be discouraged in the patient with glaucoma.

Supplement with 2-5g a day of Vit. C in divided doses and 1 gram a day of mixed bioflavonoids. You can also eat 2-4 oz (50-100 grams of fresh blueberries 3 times a day of take Vaccinium mytrillus extract containing 25% anthocyanoside (80-160 mg) three times a day.

DIET FOR GLAUCOMA:

- **best juices: lemon, grapefruit, orange, carrot, red beet and beet top**
- **avoid smoking and smokers, coffee, alcohol, all caffeine. Drink only small amounts of liquid at any given time.**
- **no sugar**
- **Warm fennel herb eye baths alternated with herbs chamomile and eyebright are helpful, or use an eye dropper and apply 3 drops to each eye 3 times a day.**

SUPPLEMENTS FOR GLAUCOMA:

25,000 IU Vitamin A and 50,000 IU Beta Carotene
4,000- 10,000 mg (2-5g) Vit. C with bioflavonoids(1g) divided into doses
400 IU Vitamin E
Up to 1g Niacinamide. If get nausea back off the dosage a bit.
1,000-2,000 mg Choline (up to 2 gm)
100 mg 3/X day of Pantothenic acid (Vit B5) antistress for adrenals
50 mg 3 times daily of Rutin
50 mg 3 times daily of Vit. B complex with meals
3,000-7,000 mg 3 times daily of Vit C plus bioflavonoids

<u>These are helpful:</u>
100 mg when in discomfort or 200 mg daily of Germanium
Inositol - as directed on label
Multivitamin and Mineral complex containing Vit. A and Beta-carotene (use as directed on label)

HERBAL FOR GLAUCOMA:

- **Blueberry (Vaccinium myrtillus): fresh 2-4 oz (50-100 g) three times a day**
- **Extracts containing 25% anthocyanoside (80-160 mg three times a day)**

OTHER FOR GLAUCOMA:

- **do not drink distilled water**
- **avoid prolonged eye stress**
- **avoid smokey rooms, being near smokers**
- **avoid coffee, alcohol, nicotine, caffeine**
- **avoid belladonna and ephedra which dilate the pupils**
- **drink only small amounts of liquid at any given time**
- **check for pancreas trouble**
- **treat the adrenals**
- **enemas every night for one month may be helpful**
- **warm fennel herb eye baths alternated with the herbs chamomile and Eyebright are helpful or use an eye dropper and apply three drops to each eye three times a day**
- **Chinese say beef liver is used to sharpen the vision and relieve glaucoma and night blindness.**
- **Paavo Airola says it is a "stress disease". Avoid emotional stresses. Cultivate a tranquil, restful life style. Climate with great temperature changes (northern) is detrimental.**
- **avoid using sunglasses.**
- **if using drugs for other conditions always inform your doctor of your Glaucoma condition; which will help him to avoid prescribing drugs which might adversely affect the Glaucoma.**
- **if medication cannot control the Glaucoma, laser treatments may be helpful. Each person is unique so you may need to try several methods and see what works for you.**