Food Supplement for Ocular Health

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11 Foods to Boost Your Eye Health

* By Aimee Surtenich www.allaboutvision.com

* Are you eating the foods that are best for your eyes?
  There's more to eye nutrition than just carrots.
  Learn which foods boost your eye health and help protect against sight-threatening diseases.

* 1 Fish
* 2 Fish Oil, Flaxseed Oil,
* Black Currant Seed Oil

Cold-water fish such as salmon, tuna, sardines and mackerel are rich in omega-3 fatty acids protect against dry eyes, macular degeneration and even cataracts.

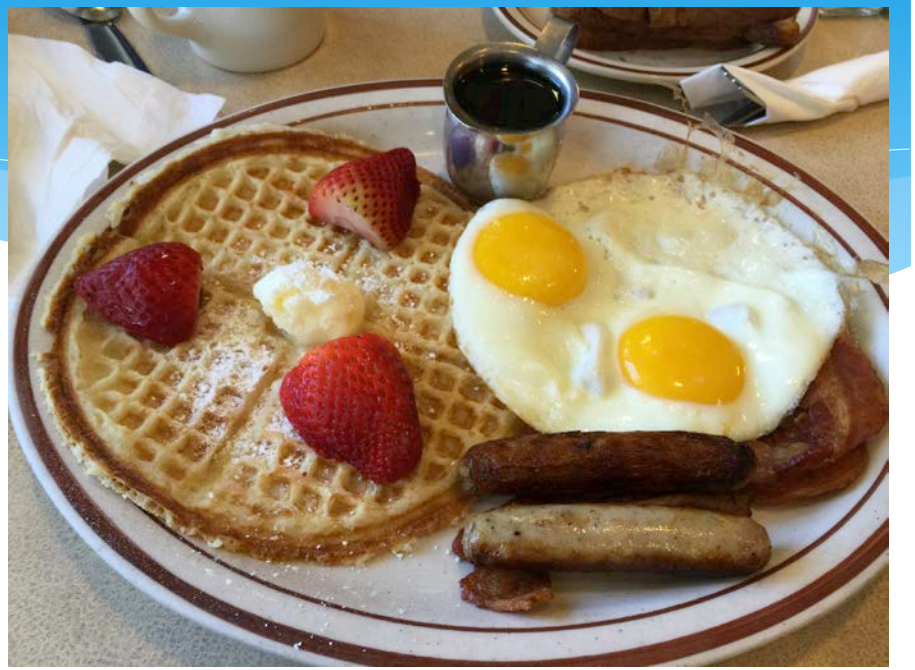
Fish oil supplements or taking vegetarian supplements that contain black currant seed oil or flaxseed oil.

3 Leafy Greens

Spinach, kale and collard Greens, are packed full of lutein and zeaxanthin

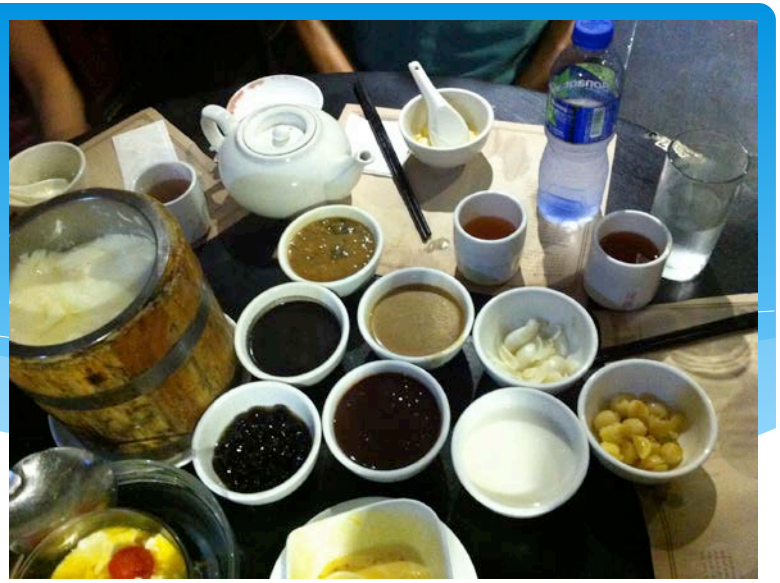
* important plant pigments that can help stem the development of macular degeneration and cataracts. Broccoli, peas and avocados are also good sources of this powerful antioxidant duo.

4 Eggs



* The vitamins and
* nutrients in eggs,
* including lutein and
* vitamin A (which may protect against night blindness and dry eyes), promote eye health and function.

5 Whole Grains



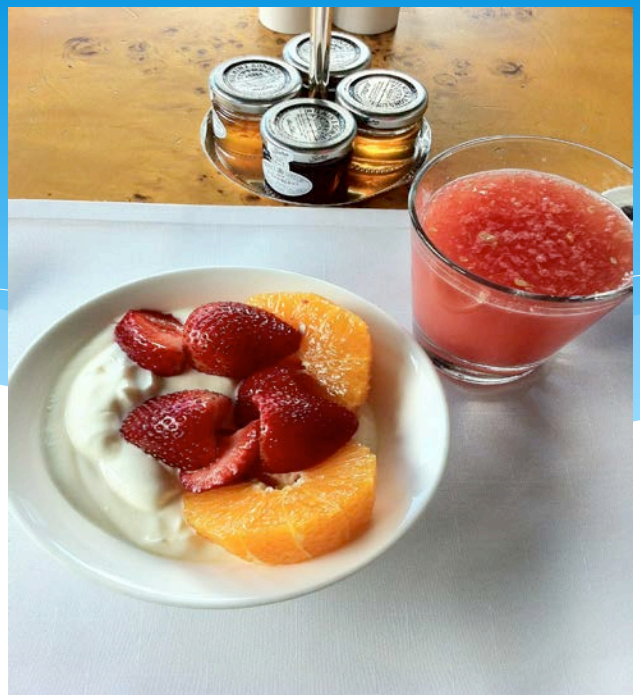
Foods with a low

glycemic index

can help reduce your risk for age-related macular degeneration. Quinoa, brown rice, whole oats and whole-wheat breads and pasta.

* The vitamin E, zinc and niacin found in whole grains also help promote overall eye health.

6 Citrus Fruits and Berries



Oranges, grapefruits, lemons and berries are high in vitamin C, which may reduce the risk of cataracts and macular degeneration.

7 Nuts

* Pistachios,
* walnuts,
* Almonds

* — are rich in omega-3 fatty acids and vitamin E that boost your eye health.

8 Colorful Fruits and Vegetables

* Foods such as carrots,
* tomatoes, bell peppers,
* strawberries, pumpkin, corn and cantaloupe are excellent sources of vitamins A and C. And carotenoids — the compounds that give yellow, orange and red pigments —help decrease the risk of many eye diseases.

9 Legumes

- Kidney beans, black-eyed peas and lentils are good sources of bioflavonoids and zinc — and can help protect the retina and lower the risk for developing macular degeneration and cataracts

10 Sunflower Seeds

* sunflowers seeds,
* which are excellent sources of vitamin E and zinc.

11 Beef

- lean beef contains
- zinc, which helps
- absorb vitamin A and
- may play a role in reducing risk of advanced age-related macular degeneration.

Treatment for glaucoma beyond lowering intraocular pressure

Robert RITCH APGS 2014

* Western medicine is monotherapy
* Polytherapy are PLANT extracts, antioxidants balance of effects in multiple systems
* Natural compounds is Alternative Medicine
* Now every pharmaceutical company is looking for bioactive medicinal plant
* Observe which plants Animals eat

Ginkgo Biloba Extract แปะก๊วย

* Powerful Antioxidant
* **Dried green leaves of the plant**
* **Neuroprotective** in many ischemia-reperfusion in multiple mechanisms inhibit neurotoxicity
* **Improve ocular blood flow** significantly.
* **Slows damage** associated
* with mitochondrial aging

Ginkgo Biloba Extract แปะก๊วย

* Protect **trabecular meshwork degeneration** in POAG patients.
* In rabbits, **suppressed steroid-induced IOP elevation** of extracellular material in juxtacanalicular meshwork and improved trabecular cellularity
* **Slowing VF progression** in treated NTG

Curcumin ขมิ้นชัน

* Inhibits inflammations in many mechanisms
* Activated PPAR-y regulated gene transcription
* Therapeutic against Alzheimer's, Parkinsons, artherosclerosis, arthritis and colitis.
* Beneficit in Uveitis, DR, CSCR, Ocular surface diseases, Allergic conjunctivitis
* May be help against excitotoxicity in Glaucoma, studying in LHON

Asian red sage

ตันเซิน

* Potent water-soluble antioxidant
* Protect against loss in rabbit glaucoma model

Omega-3 Fatty Acids

* Reduce progression of Alzheimer's
* Help ocular surface disease and MGD
* Reduce risk of AMD
* Improve aqueous outflow facility and lower IOP in rats
* Triglyceride form
* **Fish oil, flax seed oil**

Treatments other than Lowering IOP are important esp. Normal tension glaucoma

* Quit smoking, Diet, Exercise
* Transcranial alternating current stimulation
* Electromagnetic brain stimulation
* Acupuncture

Goji berries เก๋ากี้

* Zeaxanthin in dried goji berries is reported to vary from 50 mg to 150 mg per 100 gram of the fruit. In fact, the deeper the color of the goji berries – the greater the percentage of carotenoids.
* Nearly 75% of the carotenoids in goji berries occur as zeaxanthin and the rest as beta-carotene

Goji berries เก๋ากี้

* Rich in vitamins, especially B vitamin -riboflavin and vitamin C. also high in fiber and rich in protein
* goji berries were given along with fat (from milk) in order to increase the absorption rate of the fat-soluble carotenoids or eat them with nuts and seeds that contain healthy fat.

be careful!!!

* Blue Berry Eyebright Blueberry Fruit Extract
* There's no published evidence that blueberries have any meaningful effects on vision
* Eyebright herb (*Euphrasia rostkoviana*) has no report of good eye effects, and associated with adverse effects that include headache, increased eye pressure, itching, swelling of eyelid margins, dim vision

Vit C studies in humans

* **Decreased vitamin C levels in lens increased severity of** cataracts.
* Increased intake and blood levels vitamin C associated with decreased risk of cataracts, vitamin C intake > 300 mg/day for a number of years before a protective effect can be detected.
* 7-year controlled intervention trial daily 500 mg vit C, 400 IU vit E, 15 mg β-carotene: 4,629 subjects found no difference between treated and a placebo on the development and progression of age-related cataracts .
* Vitamin C intake and the development of cataracts requires further clarification.

Age-Related Macular Degeneration and Supplements What is the evidence? College of Pharmacy and Nutrition University of Saskatchewan Saskatoon SK S7N 5C9 www.medsask.usask.ca May 2013 Vol. 30, No. 3

- No evidence that supplements prevent AMD
- Anti-oxidant supplements, such as Vitalux-AREDS®, have modest benefit in slowing the progression from intermediate to advanced stages of AMD
- Potential safety issues exist with anti-oxidant and zinc supplements; zinc may increase risk of anemia and hospitalizations due to genitourinary problems, and antioxidants caused yellowing of skin and an increase in all-cause mortality
- Increasing dietary lutein and omega-3 may protect against the early stages of AMD and slow progression, though evidence is limited; lutein and omega-3 supplements have not shown benefit

1) Ocular vitamins (eg. Vitalux-AREDS®, Ocuvite®)

* Vitalux-AREDS® is the most commonly used supplement to treat AMD, but the available evidence supporting its efficacy weak.
* The largest study (the AREDS trial) compared anti-oxidants vs. anti-oxidants plus zinc vs. zinc alone vs. placebo in a randomized controlled trial of 3640 participants aged 55-80.
* The trial included patients with dry AMD at early, intermediate and advanced stages; patients with no AMD were excluded.

* evidence suggests the use of the AREDS-formula supplement should be restricted to patients with intermediate or advanced dry AMD;
* it appears there is no protective effect in patients without AMD
* effect on early disease is unknown, but likely insignificant.
* Also, the safety profile of anti-oxidants in supplements is not yet determined, so they should not be used unless benefit is expected.
* There have been harms associated with anti-oxidants, such as yellowing of skin, genito-urinary problems, and an increase in all-cause mortality.

2) Lutein and zeaxanthin

* Lutein and zeaxanthin has been examined for use in AMD. Lutein is a carotenoid with antioxidant properties; zeaxanthin is the stereoisomer of lutein.

* The available evidence shows possible benefit for normal dietary intake of lutein and zeaxanthin10—approximately 1000 ug per day, found in green, leafy vegetables such as kale, spinach, swiss chard and romaine lettuce—which most North Americans already meet. Lutein and zeaxanthin supplements have been evaluated in the AREDS II trial, and were found to have no additional benefit over placebo (which was the AREDS formula). However, no harms were found with supplementary lutein over 4.9 years in this study.

* 3) **Omega-3 fatty acids**
* Few quality studies exist for its use in AMD.
* As with lutein, higher dietary intake of omega-3 was associated with a lower chance of AMD progression, though evidence is limited.
* There is only one quality study available that investigated EPA and DHA supplementation for AMD—the AREDS II trial—which did not demonstrate a different versus placebo (the AREDS formula) in reducing the progression of AMD25.
* Advise patients that increasing fish intake to at least two servings of fish per week, as per the Health Canada Food Guide, may be beneficial for AMD, but it appears omega-3 supplements do not treat or prevent AMD.

Summary

Although patients may want to try supplements to help their AMD, evidence is still fairly weak.

- The recently completed AREDS II trial suggests lutein, zeaxanthin or EPA and DHA supplementation have no role in the treatment or prevention of AMD.
- With the available evidence, consider recommending Vitalux-AREDS or similar supplements only for patients with intermediate or advanced AMD.
- Also, increasing fish and green-leafy vegetable intake to normal levels may be beneficial; however, all other interventions and supplements have limited evidence, or evidence they have no effect, and there are possible safety issues associated with the use of anti-oxidants and zinc supplements.

				n of EPA or DHA[25]

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ily amounts taken per manufacturer recommendation

* **JAMA. 2013 May 15;309(19):2005-15..**
* **Lutein + zeaxanthin and omega-3 fatty acids for age-related macular degeneration: the Age-Related Eye Disease Study 2 (AREDS2) randomized clinical trial.**
* Age-Related Eye Disease Study 2 Research Group.

* Addition of lutein + zeaxanthin, DHA + EPA, or both to the AREDS formulation in primary analyses did not further reduce risk of progression to advanced AMD. However, because of potential increased incidence of lung cancer in former smokers, lutein + zeaxanthin could be an appropriate carotenoid substitute in the AREDS formulation.
* More lung cancers were noted in the beta carotene vs no beta carotene group (23 [2.0%] vs 11 [0.9%], nominal P = .04), mostly in former smokers

Zinc and optic nerve

* Study suggests optic nerve needs Zn for the maintenance of its cell structure
* Even Zn is supplied to the Zn-deficient rats, destruction of the myelin structure may continue.
* Zn-deficiency induce a decrease of myelinated nerve fibers
* Optic neuropathy in patients treated with **ethambutol may be a secondary change due to Zn-deficiency following drug administration**
* ZINC supplement can **reduce incidence of Ehambutol optic neuropathy in rats**

* Age-Related Macular Degeneration and Supplements
* medsask
* University of Saskatchewan Saskatoon SK S7N 5C9 www.medsask.usask.ca

* http://medsask.usask.ca/documents/newsletters/30.3%20AMD%20supplements

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