

# Nutrition and Glaucoma

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If it's "heart healthy", it's probably a good choice for those with glaucoma as well

## Fruits and Vegetables

- 3 or more servings each day may decrease risk of developing glaucoma<sup>1</sup>
- Seems that fruits high in the following A, alpha-carotene, and C were the most protective

*Which ones?*

## Oranges and peaches

- 3 servings per week may be sufficient to decrease risk of glaucoma<sup>2</sup>
- Fresh, not canned or juice

## Kale and collard greens

- Just 2 servings per week may be sufficient to decrease risk of developing glaucoma<sup>3</sup>
- Also a great source of Lutein/Zeaxanthin (which I've discussed in another video for its potential to improve delayed dark adaptation)
- Kale is also high in vitamin C

## Leafy green vegetables<sup>4</sup>

- High nitrates
- Do not confuse with nitrites (salami, deli meats)
- Natural forms are converted by the body into nitric oxide
  - IOP lowering benefit
  - Improvement of blood circulation
  - Vyzulta

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<sup>1</sup> Giaconi JA, Yu F, Stone KL, et al. The association of consumption of fruits/vegetables with decreased risk of glaucoma among older African-American women in the study of osteoporotic fractures. *Am J Ophthalmol.* 2012;154(4):635-44.

<sup>2</sup> Ibid.

<sup>3</sup> Ibid.

<sup>4</sup> Kang JH, Willett WC, Rosner BA, Buys E, Wiggs JL, Pasquale LR. Association of Dietary Nitrate Intake With Primary Open-Angle Glaucoma A Prospective Analysis From the Nurses' Health Study and Health Professionals Follow-up Study. *JAMA Ophthalmol.* 2016;134(3):294-303. doi:10.1001/jamaophthalmol.2015.5601

### Black currant<sup>5</sup>

- High in vitamin C as well as anthocyanins
- May normalize blood flow to the eye as well as stabilize visual field loss

### Eggplant<sup>6</sup>

- May reduce IOP
- 10 grams per day
- The purple skin of the eggplant is also a good source of Vitamin C and anthocyanins

### Omega-3 Fatty Acids<sup>7</sup>

- May improve blood flow
- Wild salmon and fatty cold water fish such as
  - Sardines
  - Mackerel
  - Herring
  - Tuna

### Plants rich in flavonoids (natural plant-based antioxidants)<sup>8</sup>

#### Cocoa (as in chocolate)

- High in flavonoids (natural plant-based antioxidants)
- Recommend a small amount of dark chocolate every day

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<sup>5</sup>Yoshida K, Ohguro I, Ohguro H. Black currant anthocyanins normalized abnormal levels of serum concentrations of endothelin-1 in patients with glaucoma. *J Ocul Pharmacol Ther.* 2013 Jun;29(5):480-7. doi: 10.1089/jop.2012.0198. Epub 2012 Dec 21.

<sup>6</sup>Igwe SA, Akunyili DN, Ogbogu C. Effects of *Solanum melongena* (garden egg) on some visual functions of visually active Igbos of Nigeria. *J Ethnopharmacol.* 2003 Jun;86(2-3):135-8.

<sup>7</sup>Ren H, Magulike N, Ghebremeskel K, Crawford M. Primary open-angle glaucoma patients have reduced levels of blood docosahexaenoic and eicosapentaenoic acids. *Prostaglandins Leukot Essent Fatty Acids.* 2006 Mar;74(3):157-63. Epub 2006 Jan 10.

<sup>8</sup>Patel S, Mathan JJ, Vaghefi E, Braakhuis AJ. The effect of flavonoids on visual function in patients with glaucoma or ocular hypertension: a systematic review and meta-analysis. *Graefes Arch Clin Exp Ophthalmol.* 2015 Nov;253(11):1841-50. doi: 10.1007/s00417-015-3168-y. Epub 2015 Sep 4.

## Tea

- Green tea gets all the attention but most of the benefits attributed to green tea are shared by black tea as well
- High in flavonoids (natural plant-based antioxidants)
- May decrease progression of visual field loss

## Goji berries<sup>9</sup>

- Pretty impressive animal studies suggest that the extract of this berry could protect the retinal ganglion cells which are otherwise the main target of damage in glaucoma.

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<sup>9</sup> Chan HC, Chang RC, Koon-Ching Ip A, et. al. Neuroprotective effects of Lycium barbarum Lynn on protecting retinal ganglion cells in an ocular hypertension model of glaucoma. *Exp Neurol*. 2007 Jan;203(1):269-73. Epub 2006 Oct 11.