


Chapter 4

Functional Foods for Healthy Ocular Health

Poonam Maurya


 <https://orcid.org/0000-0001-8471-7604>

*Shambhunath Institute of Pharmacy, Prayagraj, Dr. A.P.J. Abdul Kalam
Technical University, Lucknow, India*

Neelesh kumar Maurya

Sharda University, India

Nidhi Bhatt

 <https://orcid.org/0000-0002-4691-4882>

Vivekananda Global University, Jaipur, India

ABSTRACT

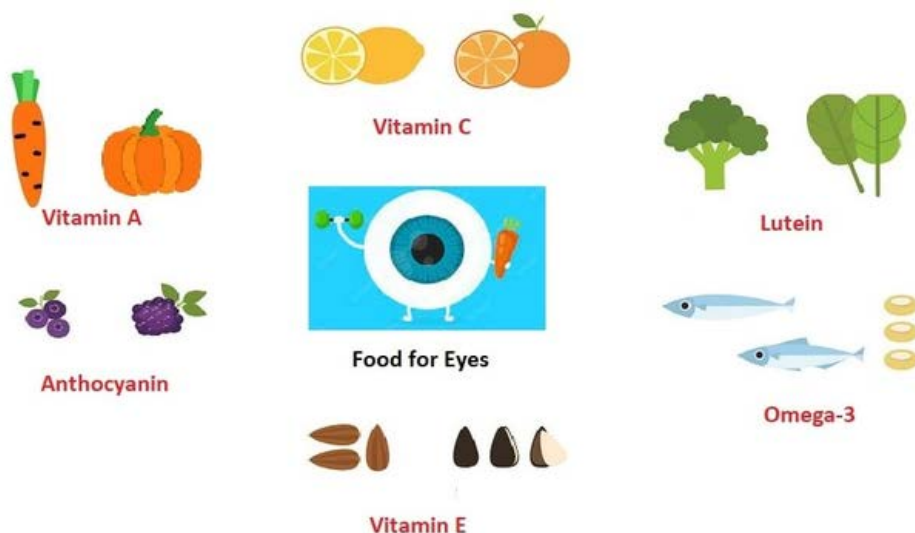
Sight or vision is extremely important to human survival. There is mounting evidence that environmental and lifestyle variables contribute to eye problems. Particles, radiation, and pollution can cause damage to the eyes. A high-carbohydrate, high-fat diet, stress, alcohol, screen time, and tobacco all contribute to visual impairment. Myopia, macular degeneration, glaucoma, cataracts, digital eye strain, and choroidal and retinal problems are all impacted. A combination of hyperventilation and environmental factors that produce reactive oxygen species can be harmful to the eyes. Nutrition isn't the only advantage of functional meals. Proper nutrition can help with eye health. The relationship between chemical, nutritional, and functional diets and eye health is discussed in this chapter. Some examples of nutritious foods are dark chocolate, berries, almonds, seeds, green tea, salmon, leafy greens, and omega-3 fatty acids. Diets rich in minerals and antioxidants may help keep eye diseases at bay.

DOI: 10.4018/979-8-3373-1439-6.ch004

1. INTRODUCTION

Foods in the functional food category provide additional health benefits in addition to those provided by basic nutrition. These foods are frequently high in bioactive elements, such as vitamins, minerals, antioxidants, and phytochemicals, which have been linked to a variety of health-promoting effects in studies (Figure 1). When it comes to ocular health, functional nutrients play a critical role in supporting and maintaining healthy eyes.

Figure 1. Functional foods for eyes



The eye is a complex organ with a high metabolic rate and vulnerability to oxidative damage. Mammal eyes are highly specialised. The crystalline lens focuses light after it enters the cornea and passes through the pupil. When light strikes the neurosensory retina, photo-transduction cascades transform photonic energy into a neural signal that travels from photoreceptors to ganglion cells, then to the optic nerve and brain. The vision is processed and perceived by the central nervous system. Ocular diseases and vision impairment can be caused by any dysfunction in eye cell. Many eye problems are caused by hereditary and environmental factors. Thus, knowing disease molecular pathways aids in the discovery of remedies. Certain eye disease causes have been identified by well-powered genome-wide association and linkage studies. Throughout life, 90% of human genome genes are expressed in ocular organs. However, the exact cause of developmental genetic characteristics and

32 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/functional-foods-for-healthy-ocular-health/388362

Related Content

Nanocomposites in the Food Packaging Industry: Recent Trends and Applications

Dheeraj Kumar, Md. Farrukhand Nadeem Faisal (2021). *Research Anthology on Food Waste Reduction and Alternative Diets for Food and Nutrition Security* (pp. 122-146).

www.irma-international.org/chapter/nanocomposites-in-the-food-packaging-industry/268135

Immunology of Dietary Exposure

Lucy Mohapatra, Deepak Mishra, Alok Shiomurti Tripathi and Sambit Kumar Parida (2024). *Nutrition Controversies and Advances in Autoimmune Disease* (pp. 208-236).

www.irma-international.org/chapter/immunology-of-dietary-exposure/353795

Importance of Pest and Pathogen Control System With Special Emphasis on Coriander Crop on the Indian Subcontinent

Sunita Rao and Gajra Garg (2020). *Ethnopharmacological Investigation of Indian Spices* (pp. 242-252).

www.irma-international.org/chapter/importance-of-pest-and-pathogen-control-system-with-special-emphasis-on-coriander-crop-on-the-indian-subcontinent/252462

Sodium, Potassium, and Chloride Deficiency

Lok Yu Vanessa Yiu and Nalini Pati (2024). *Causes and Management of Nutritional Deficiency Disorders* (pp. 238-247).

www.irma-international.org/chapter/sodium-potassium-and-chloride-deficiency/350158

Korean War

(2023). *Dark Gastronomy in Times of Tribulation* (pp. 218-232).

www.irma-international.org/chapter/korean-war/323097