

MACUBLUE®

Visual impairment in elderly people is a considerable health problem that significantly affects quality of life of millions of people worldwide⁽¹⁰⁾. The magnitude of this issue is becoming more evident with an aging population and an increasing number of older individuals. In the recent past, Age-related Macular Degeneration (AMD) was an ignored and untreated disease of the elderly.

Eye and vision related diseases are also increasing due to high screen time exposure resulting from a prolonged computer, tablet, e-reader and smartphone use (blue light). This phenomenon is called Computer Vision Syndrome (CVS).

Saffron extract implied in **MACUBLUE®** is obtained from a premium quality European saffron⁽¹¹⁾ stigmas, supported by scientific evidences on protection against blue light, improvement of blood circulation in the retina and prevention from macular degeneration.

Thus, antioxidants such as Lutein and Zeaxantine in synergy with Saffron contained in **MACUBLUE®**, provide a neuroprotectant action on visual health, by improving retinal function and by protecting from oxidative retinal stress.

ORALLY DISINTEGRATING TECHNOLOGY

Designed to disintegrate rapidly on contact with saliva and enable oral administration without water or chewing. This kind of formulation offer increased convenience and ease of administration with the potential to improve compliance, particularly in certain populations where swallowing conventional solid oral-dosage forms is difficult.

- **No water**
- **Fast onset of action**
- **Quick dissolution**
- **Excellent mouth feel**
- **Patience compliance (geriatric and pediatric population)**
- **User friendly**
- **Solvent and alcohol free**

BLISTER PACK TECHNOLOGY

An innovative patented strengthen blister pack to store fragile forms such as ODT.

via Provina 2
38123 Trento (TN) - Italy
t. +39 0461 922818
fax +39 0461 922820
info@e-pharma.com

www.e-pharma.com



MACUBLUE®
FOOD SUPPLEMENT

MACUBLUE®

FOOD SUPPLEMENT

Food supplement for eye health based on Lutein, Zeaxanthine and Saffron

Lutein and Zeaxanthine are antioxidants, protecting the body against cell-damaging effects of free radicals. They have been linked to disease prevention, especially age-related eye disease^(1,2,3,4), and blue light damage, consequence of a prolonged computer, tablet, e-reader and smartphone use.

Saffron, *Crocus sativus L.*, has been widely used as a medicinal plant to promote human health^(5,6,7). It improves macula microcirculation and helps macula photoreceptors to recover from retinal damage and protects against blue light^(8,9,11).



INDICATIONS

MACUBLUE® is a food supplement, available in orally disintegrating tablets (ODT), useful for its neuroprotectant action on visual health, due to its antioxidant effect.

HOW TO USE

1 ODT per day, to be dissolved directly in the mouth.

- GLUTEN FREE
- LACTOSE FREE
- PRESERVATIVES FREE

INGREDIENTS

| | Content for sachet/stick | % RNV* |
|------------|--------------------------|--------|
| Lutein | 20 mg | - |
| Zeaxanthin | 4mg | - |
| Saffron** | 20mg | - |

(*) Reference Nutritional Value - ** Affron®EYE

BIBLIOGRAPHY

- ⁽¹⁾ Bian Q, Gao S, Zhou J, Qin J, Taylor A, Johnson EJ, Tang G, Sparrow JR, Gierhart D, Shang F. *Lutein and zeaxanthin supplementation reduces photo-oxidative damage and modulates the expression of inflammation-related genes in retinal pigment epithelial cells*. Free Radic Biol Med. 2012; 53(6):1298–1307. Published online 2012 Jun 23.
- ⁽²⁾ Ma L, Liu R, Du JH, Liu T, Wu SS, Liu XH. *Lutein, Zeaxanthin and Meso-zeaxanthin Supplementation Associated with Macular Pigment Optical Density*. Nutrients. 2016; 8(7): 426. Published online 2016 Jul 12.
- ⁽³⁾ Huang YM, Dou HL, Huang FF, Xu XR, Zou ZY, Lin XM. *Effect of Supplemental Lutein and Zeaxanthin on Serum, Macular Pigmentation, and Visual Performance in Patients with Early Age-Related Macular Degeneration*. Biomed Res Int. 2015; 2015: 564738. Published online 2015 Mar 1.
- ⁽⁴⁾ Bovier ER, Renzi LM, Hammond BR. *A double-blind, placebo-controlled study on the effects of lutein and zeaxanthin on neural processing speed and efficiency*. PLoS One. 2014;9(9):e108178. eCollection 2014.
- ⁽⁵⁾ Khazdair MR, Boskabady MH, Hosseini M, Rezaee R, M Tsatsakis A. *The effects of Crocus sativus (saffron) and its constituents on nervous system: A review*. Avicenna J Phytomed. 2015;5(5):376-91
- ⁽⁶⁾ Falsini B, Piccardi M, Minnella A, Savastano C, Capoluongo E, Fadda A, Balestrazzi E, Maccarone R, Bisti S. *Influence of saffron supplementation on retinal flicker sensitivity in early age-related macular degeneration*. Invest Ophthalmol Vis Sci. 2010;51(12):6118-24. Epub 2010 Aug 4.
- ⁽⁷⁾ Laabich A, Vissvesvaran GP, Lieu KL, Murata K, McGinn TE, Manmoto CC, Sinclair JR, Karliga I, Leung DW, Fawzi A, Kubota R. *Protective effect of crocin against blue light- and white light-mediated photoreceptor cell death in bovine and primate retinal primary cell culture*. Invest Ophthalmol Vis Sci. 2006;47(7):3156-63
- ⁽⁸⁾ Maccarone R, Di Marco S, Bisti S. *Saffron supplement maintains morphology and function after exposure to damaging light in mammalian retina*. Invest Ophthalmol Vis Sci. 2008;49(3):1254-61.
- ⁽⁹⁾ Xuan B, Zhou YH, Li N, Min ZD, Chiou GC. *Effects of crocin analogs on ocular blood flow and retinal function*. J Ocul Pharmacol Ther. 1999;15(2):143-52.
- ⁽¹⁰⁾ Al-Zamil WM, Yassin SA. *Recent developments in age-related macular degeneration: a review*. Clin Interv Aging. 2017;12:1313-1330. eCollection 2017.
- ⁽¹¹⁾ **Affron®eye, an innovative vision for eye health**, <http://pharmactive.eu/affroneye>



Crocus sativus L.