



LUTEIN

An **IMPORTANT NUTRIENT** *for* **BRAIN** *and* **EYE HEALTH**

What is lutein?

Lutein is a carotenoid that, along with the carotenoid zeaxanthin, can impact visual health by slowing the progression of age-related macular degeneration (AMD). More recent research has discovered lutein's role in cognition.

How does lutein impact cognition?

- Lutein is the predominant carotenoid in the brain from infancy to old age, and this finding has led researchers to study the impact of lutein on cognitive development.
- Lutein and zeaxanthin levels in the eye are significantly correlated with levels in the brain. Greater macular pigment optical density (MPOD) is positively associated with academic performance in children.¹
- Lutein has been shown to play a role in cognition in older adults as well.²

How does lutein impact eye health?

- Lutein and zeaxanthin block “blue light”— the shorter, more energetic wavelengths of visible light from sunlight and digital devices like smartphones and computers.
- Studies suggest that too much blue light may cause damage in the eye.³

Sources of Lutein and Zeaxanthin

- Spinach
- Green Peas
- Brussels Sprouts
- Broccoli
- Sweet Corn
- Summer Squash
- Eggs



Research suggests that the lutein and zeaxanthin in EGGS are more bioavailable than in plant sources.

Protection from Blue Light

Visual Performance

Visual Processing Speed and Reaction Time

Brain Health and Performance

HIGH MPOD IS ASSOCIATED WITH

Reduction in risk for AMD Progression

Reduction in risk of Cataract Surgery

Reduction in risk for Diabetic Eye Disease

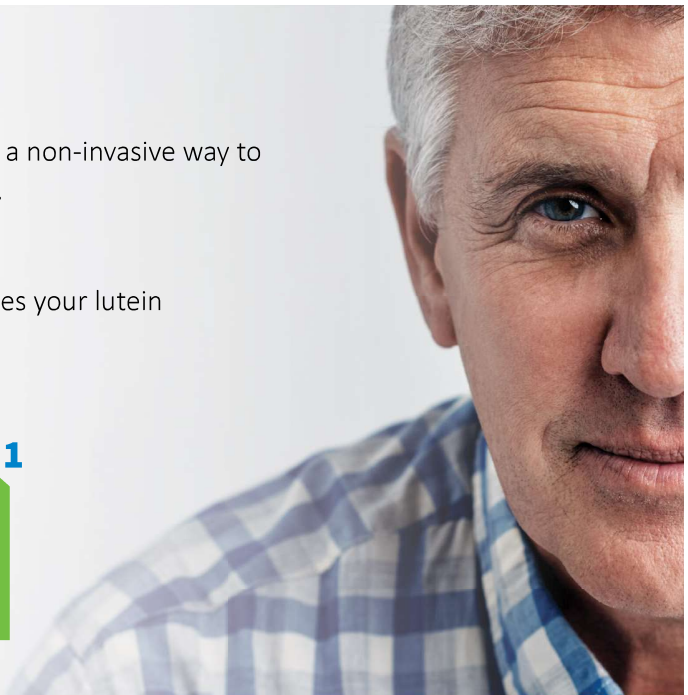
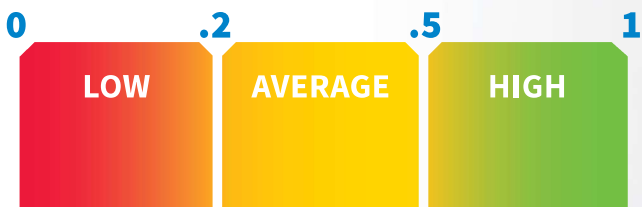
High Lutein and Zeaxanthin in Brain

MPOD Testing

Macular pigment optical density (MPOD) testing is a non-invasive way to know the lutein and zeaxanthin levels in your eyes.

Testing takes about 90 seconds per eye.

After testing is complete, your MPOD score indicates your lutein and zeaxanthin levels.



1. Barnett, SM et al. Macular pigment optical density is positively associated with academic performance among preadolescent children. *Nutr Neurosci*. 2017 May 23:1-9.
2. Hammond BR Jr et al. Effects of Lutein/Zeaxanthin Supplementation on the Cognitive Function of Community Dwelling Older Adults: A Randomized, Double-Masked, Placebo-Controlled Trial. *Front Aging Neurosci* 2017 Aug 3;9:254.
3. Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR). 2012. Health Effects of Artificial Light (http://ec.europa.eu/health/scientific_committees/emerging/docs/scenihr_o_035.pdf).

MPOD Chart Reference: P.S. Bernstein et al. / *Vision Research* 50 (2010) 716-728