Early detection of AMD risk

MPS II

Macular Pigment Screener from Elektron Eye Technology

elektron eye technology

"I believe that the MPS II is the quickest, most affordable, and most clinically relevant ophthalmic device in the world. It provides an efficient method for determining macular pigment optical density in everyday optometric and ophthalmological practice. I believe it will revolutionize the practice of eye care."

Stuart Richer, OD, PhD, FAAO
Director, Ocular Preventive Medicine
Captain James A Lovell Federal Healthcare Facility, USA

esavision TECHNOLOGY

AMD: a global problem

Millions affected

196 million people projected to suffer from age-related macular degeneration by 2020

Blue light threat

Daily exposure to harmful blue light means even greater numbers could be affected

Reactive treatments

No attempts to reduce high healthcare costs through early detection of AMD risk

MPS II: a proactive solution

3 reasons to adopt macular pigment screening today:

1

Diversify your services

Offer MPOD screenings to detect AMD risk and educate patients on preventative choices

2

Grow your business

New revenues from protective lens and supplement sales boost the bottom line

3

Protect your patients

Regular repeat screenings monitor and manage the effect of preventative steps

Reducing the threat of AMD

Age-related macular degeneration (AMD) is a leading cause of vision loss worldwide. The MPS II is a portable screening device that enables early identification of AMD risk by measuring Macular Pigment Optical Density (MPOD). Low MPOD is a significant but modifiable risk factor for AMD. Once identified it can be monitored and corrected over time, enabling a proactive approach to a global problem.

Measuring MPOD to support a proactive, preventative approach to the growing global problem of AMD, the MPS II is:

Reliable
scientifically validated through use in multiple studies

Repeatable
has accurately measured more than 4 million eyes

Intuitive
easy-to-use user interface with icon-driven menus

Fast
screen in 90 seconds per eye for efficient patient care

Commercial
clear ROI through protective lens and supplement sales

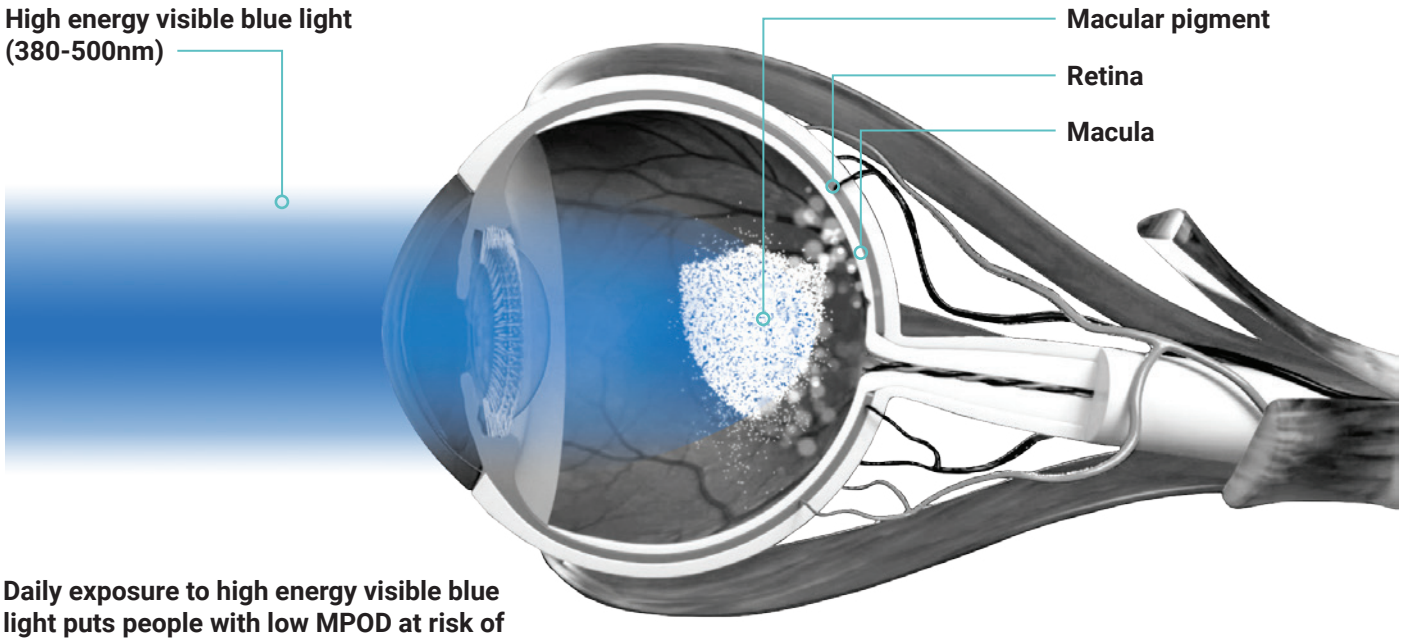
AMD, macular pigment and MPOD

AMD affects hundreds of millions of people worldwide and reactive treatment accounts for billions in direct healthcare spend each year. This is despite the condition having a number of modifiable risk factors which can be proactively controlled to reduce the risk of developing the most advanced ('wet') form of the disease.

Macular pigment optical density (MPOD) is one such risk factor. Measured by the MPS II, MPOD indicates a person's level of protection against the high-energy visible (HEV) blue light known to be absorbed by the protective layer of macular pigment in front of the retina.

Increasingly prevalent in modern society, HEV blue light (380-500 nm) – emitted by cell phones, PCs, televisions, LED lighting and the sun – puts people with low MPOD at risk of developing AMD in the future.

There are ways to increase MPOD and reduce the threat of AMD if those at risk can be identified. Eye health supplements rich in the retinal carotenoids lutein (L) and zeaxanthin (Z) have been proven beneficial in raising MPOD, whilst purpose-designed lenses are also available to protect the wearer from the development of AMD.



Daily exposure to high energy visible blue light puts people with low MPOD at risk of developing AMD in future

FloraGLO LUTEIN

Protect your patients. Grow your business.

The MPS II allows eye care specialists to identify, educate and monitor those most at risk of developing AMD. Fast, affordable and scientifically validated, it diversifies service offerings, allows differentiation from competitors and enables business growth through new revenues from lens and ongoing supplement sales. It is a proactive and profitable solution to the global threat of AMD which can be implemented in three simple steps:

01

Screen MPOD early to detect those at risk of AMD

02

Recommend preventative lifestyle changes (e.g. protective lenses, eye health supplements)

03

Re-screen patients regularly to monitor and assess effect of preventative measures

Supporting clinical evidence highlights*

Case for MPOD	Bernstein et al (2010) The value of measurement of macular carotenoid pigment optical densities and distributions in age-related macular degeneration and other retinal disorders. *Vision Research* 50(7) Korb et al (2014) Prevalence of age-related macular degeneration in a large European cohort: Results from the population-based Gutenberg Health Study. *Graefe's Archive for Clinical and Experimental Ophthalmology* 252(9)
Lutein/Zeaxanthin supplementation	Age-Related Eye Disease Research Study 2 – results (2013) https://nei.nih.gov/areds2 Davis, R.L. (2016) Preliminary Results in Macular Pigment Optical Density Associated with and without Zeaxanthin and Lutein Supplementation. *Advances in Ophthalmology & Visual System* 2(6) Davey et al (2016) Macular pigment optical density: repeatability, intereye correlation, and effect of ocular dominance. *Clinical Ophthalmology* (10)
Research using MPS II (branded as 'QuantifEye MPS II' in U.S.)	Richer et al (2012) Macular Re-pigmentation Enhances Driving Vision in Elderly Adult Males with Macular Degeneration. *Clinical & Experimental Ophthalmology* 3(3) Van der Veen et al (2009) A new desktop instrument for measuring macular pigment optical density based on a novel technique for setting flicker thresholds. *Ophthalmic & Physiological Optics* 29(2)

** For a full and comprehensive list of supporting clinical evidence visit: www.elektron-eye-technology.com/products/mps-ii/*

The MPS II in practice

Prevention beats intervention

Prevent

Stage 1. No AMD

- **Strategy:** Assess children of AMD patients, as well as 'worried well' to detect risk of developing AMD
- **Tactics:** MPS II screening along with analysis of other risk factors
- **Results:** Delay early onset of AMD through preventative management strategy

Mitigate

Stage 2. Dry AMD

- **Strategy:** Manage, monitor and mitigate likelihood of disease progression
- **Tactics:** Lifestyle changes; supplementation to increase MPOD; monitor six monthly
- **Results:** Reduce disease progression and improve visual acuity

Intervene

Stage 3. Wet AMD

- **Strategy:** Stabilise and improve rapidly deteriorating vision
- **Tactics:** Anti-VEGF medication; laser eye surgery
- **Result:** <35% improvement rate; surgery available to minority of sufferers

MPS II plays active role

Invasive treatment

Adding value to the patient and the practice

The practitioner

"The MPS II is extremely good value and we have already made our money back on the device several times over through initial consultation and follow-up fees. It's a cost-effective piece of equipment, adding value to the patient and the practice – we screen a notable percentage of patients with risk factors."

Dr Scott W Mackie
Consultant Optometrist, Mackie Eyecare Ltd.
Glasgow, Scotland

The patient

"As a patient with only one functional eye with central vision, I was advised by Dr Mackie to get my macular pigment checked which, in addition to another risk factor, revealed that I needed to start taking nutritional [L+Z] supplements. I am delighted that further testing of my macular pigment with the MPS II revealed that my MPOD had increased and my risk of developing AMD had reduced. I hope other patients like me are offered this enhanced technology."

Anonymous
Mackie Eyecare Ltd

Technical specification

Device type	Computerised device capable of assessing macular pigment optical density (MPOD) Target viewing distance set to infinity Background luminance set at 250 cd/m²
Central stimulus	Integrated output from blue, green and white LEDs Stimulus target angular subtense 1°
Peripheral fixation	Integrated output from red LEDs Angular subtense ~2° Peripheral target offsets minimum +/- 6°
Test modes	**Standard** A central only test estimating MPOD value by comparing result with age normative data **Detailed** A central test plus a peripheral test, during which the patient fixates on an offset target. The combination of the two results produces an 'absolute' MPOD value. (This option would be used for patients who do not conform to age-normal parameters.)
Average test times*	**Standard** ~90 seconds per eye **Detailed** ~2-3 minutes per eye
Patient unit inputs/outputs	USB Type B connector C13 IEC socket Patient Response Button
Patient unit dimensions (L x W x H / mm)	270-350 x 230 x 300-350 (length/height adjustable)
Patient unit weight (kg)	4.26
Electrical specification	Mains input 85-263V AC / 50-60Hz universal input
Classification	Class 1 Mains operated Type B applied part Continuous operation
Software specification	Supported on MS Windows® Professional, v. 7, and above
Device model	MPS9000

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For more information about Elektron Eye Technology go to:
www.elektron-eye-technology.com

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