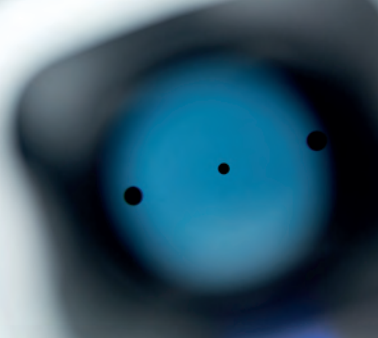
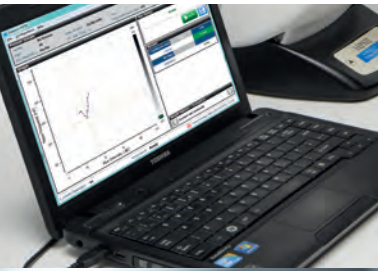




elektron
technology



MPS II
Detect and Protect

The MPS II from Elektron Technology. Fast. Flexible. Reliable. Intuitive.

The MPS II is a portable screening device that enables early detection of patients at risk of Age-related Macular Degeneration (AMD) - the leading cause of vision loss in people over 50.

MPS II measures your Macular Pigment (MP) level. Low MP is a significant (*modifiable*) risk factor for AMD and, once detected, needs managing through diet, supplementation and lifestyle in order to minimise the risk of early onset of AMD.

Features

- **Screening** Early detection of the risk of sight loss
 - Empowers proactive care management
 - Cuts healthcare costs
- **Accuracy** Monocular detection is most accurate subjective method
- **Speed** ~ 90 seconds per eye for MP result
- **Cost** The most cost-effective screener on the market
- **Reliability** Data quality algorithms provide instant interpretation of results
- **Footprint** Far smaller than anything else on the market
- **Portability** Ideal for clinics, hospitals and domiciliary visits
- **Technology** Uses latest in LED technology and processing
 - Non-invasive – no need for pupil dilation
- **Innovation** Novel application of Heterochromatic Flicker Technology
- **Flexibility** Dual modes enable detailed drill-down of results
- **Connectivity** Links to Windows PC for ease of use
- **Data** Patient's record and results stored for continued monitoring of MP
 - Generates repeat business
- **CE/FDA**



MPS II ● Detect and Protect

Age-related Macular Degeneration. And the importance of MPS II.



The global population is ageing. Coupled with the often poor western diet and lifestyle that many non-western populations are adopting, ophthalmologists predict an epidemiological explosion of AMD in the next few years.

In 2010, AMD was responsible for an estimated \$343 billion of healthcare costs. These costs are set to spiral unless effective screening, prevention and treatment strategies are in place. <http://www.amdalliance.org/>

The most effective way to reduce the problem and the cost is to either prevent AMD occurring in the first place or to halt progression from dry to wet AMD. Prevention is better and cheaper than intervention.

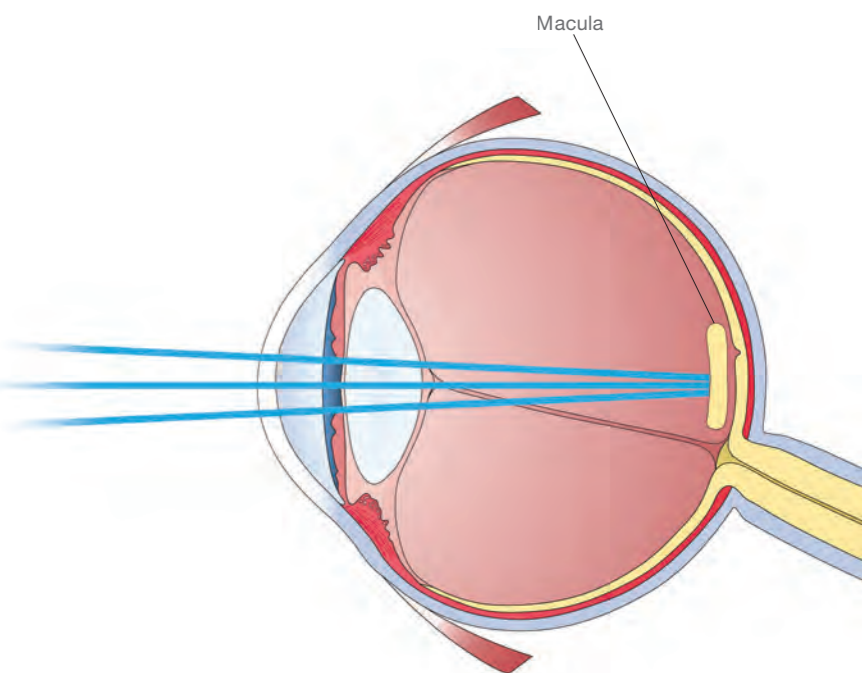
Although low MP is not the only determining risk factor for AMD and a holistic view of a patient needs to be taken – taking into account smoking, obesity, poor diet and lifestyle and excessive exposure to blue light hazards – there is overwhelming evidence that it is one of the main risk factors for early onset.

Over the last decade there have been many studies undertaken to assess the effects of oral supplementation on the progression of the disease to advanced AMD. The results of the AREDS2 study in 2013 – the largest study completed to date – is set to be a game changer for eye care professionals who are still sceptical about supplementation. AREDS 1 showed a 25% reduction in advanced AMD.

Taking all things into consideration it makes sense to screen to detect MP levels so that a healthcare professional can determine the best course of action for the patient concerned. Without this information, it is simply a case of waiting for symptoms of visual impairment to become apparent.

Screening for low MP by the MPS II is currently the best way of identifying those patients at greatest risk of developing AMD.

High
energy
blue
light



High energy blue light attacks macular pigment

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MPS II. The business case.

Stage 1. No AMD

- **Strategy:** Screen the 40+ offspring of AMD patients plus the 'worried well' to **detect risk** of developing AMD
- **Tactics:** **£\$ MPS II screening and risk factor analysis £\$**
- **Result:** **delay early onset** of AMD through preventative management strategy

Stage 2. Dry AMD

- **Strategy:** Manage and monitor disease progression
- **Tactics:** educate around the importance of good diet, lifestyle and supplementation to increase the MP shield, **£\$ monitor progress every 6 months through MPS II £\$**
- **Result:** **halt disease progression** and **improve visual acuity**

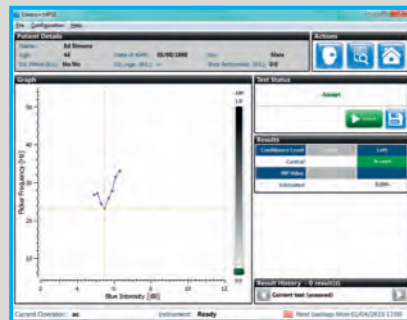
Stage 3. Wet AMD

- **Strategy:** Stabilise and/or improve vision
- **Tactics:** angiogenics
- **Result:** **<35% improvement**, 90% stabilise, **\$343 Billion** spent in 2010 in this treatment, costs set to spiral unless we take preventative action

Detect – screen to detect low levels of macular pigment (MP)

Manage – supplementation, diet and lifestyle choices all increase MP levels

Monitor – regular check-ups to monitor MP levels



Default mode graph

What commercial benefits has the MPS II screener brought to the practice as a whole?

'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 practice – we screen a notable percentage of patients with risk factors. We sell the supplements at RRP and thus make money each month the patient is using them but I feel this is ethical if you are giving them to the correct patient groups. We've been very active in the local area publicising what we do.'

Dr Scott W Mackie
BSc (Hons) MCOptom PhD MFDO ABDO LVA (Hons) Dip Tp (IP). Pg Dip (Cataract and Refractive Surgery). Mod (Diabetic Retinopathy Screening). Mod (Leadership Skills)

Prevention. Rather than intervention.



- 1 Screen to detect those at risk of AMD.
- 2 Educate and ensure proactive diet and lifestyle choices are made – early.
- 3 Delay early onset and/or halt progression of dry AMD, preventing the AMD epidemic predicted for the next 20 years.
- 4 By the time someone has wet AMD, they contribute to a huge financial burden on the healthcare system – in 2010 it was already \$343 billion. Many sufferers commit suicide, are treated for depression, can no longer work, need carers or become unproductive.
- 5 If we can prevent this scenario we can reduce the financial burden on governments and patients, improve the quality of AMD sufferers' daily lives AND create an extra revenue stream for eye care professionals.



Normal vision



Late stage macular degeneration

Technical Specification

Type	Computerised device capable of measuring Macular Pigment Optical Density (MPOD)
	Target viewing distance set to infinity
	Background and target luminance set at approximately 250 cd/m ₂
Stimuli	Integrated output from blue, green and white LEDs
	Stimulus target angular subtense 1°
Peripheral Fixation	Integrated output from red LEDs
	Angular subtense 3°
	Target offsets minimum +/- 6°
Patient Unit Inputs/Outputs	USB 1.1 type B connector for PC connection
	Mains input connector (IEC320)
	Patient response button
Patient Unit Dimensions	300 x 230 x 300-350 variable mm (L x D x H)
Patient Unit Weight	4.4 kg
Electrical Specification	Mains input 100-240v 50/60Hz universal input
Classification	Mains operated
	Class 1
	Type B applied part
	Continuous operation
	Equipment not suitable for use in presence of flammable anaesthetic mixtures with air or nitrous oxide Ordinary equipment without protection against ingress of water
Software Specification	Supported on Microsoft™ Windows 7 Professional and Windows 8 Professional
Device	Make: MPS 9000, Model: MPS II

Supporting Clinical Evidence

Loane et al (2008) BJO 92 (9) 1163-1168
 Richer et al (2004) Optometry 75: 216-30
 Richer et al (2011) Optometry 82: 667-680
 Weigert et al (2011) Investigative Ophthalmology 11:7522-7528
 Van der Veen et al (2009) Physical. Opt.29: 127-137



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Customer testimonial

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

* First generation screener

Finally...

We may ALL get some level of AMD as we get to be, say, ninety. It is by ensuring the level of sight loss is *minimised* – through screening and building up MP in our forties – that will enable our quality of life to be better as we get older.



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