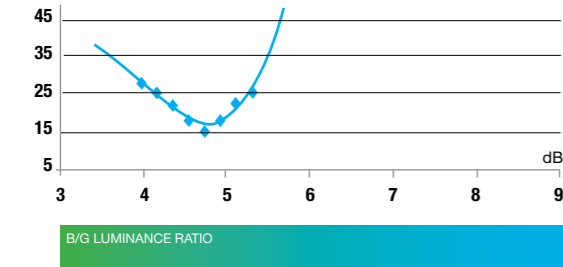
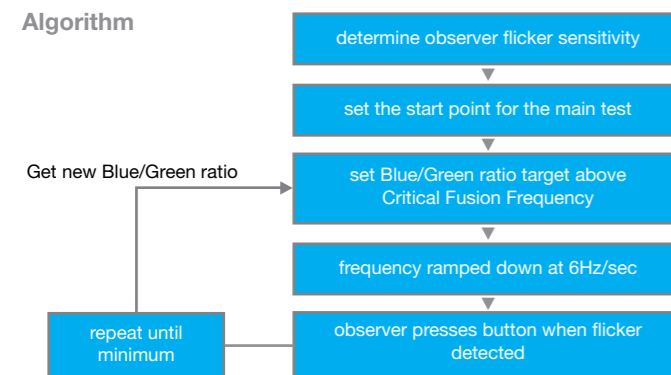
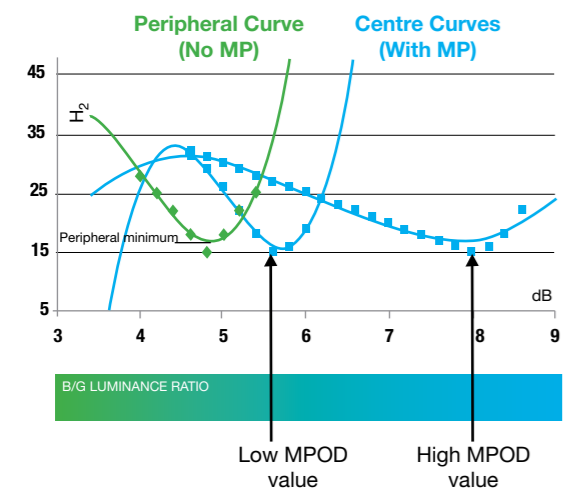


Algorithm



Data



MP optical density is based on the relationship between the peripheral minimum and the centre minimum

M|POD TECHNICAL SPECIFICATION

1.0 TYPE

Computerised device capable of measuring Macular Pigment Optical Absorption Density. Target viewing distance set at infinity. Background and Target luminance set at approximately 250cd/m².

2.0 STIMULI

Integrated output from LEDs at 470nm and 540nm and White light LEDs. Stimulus target angular subtense 1 degree.

3.0 PERIPHERAL FIXATION TARGETS

Integrated output from LEDs at 650nm. Angular subtense 3 degrees. Target offsets minimum +/- 6 degrees.

4.0 PATIENT UNIT INPUTS / OUTPUTS

Patient Unit
USB 1.1 Type B Connector for PC connection.
Mains Input Connector (IEC320)
Patient response button (hard wired)

5.0 PATIENT UNIT DIMENSIONS

300 x 230 x 300 - 350 variable mm (L x D x H)

6.0 PATIENT UNIT WEIGHT

4.4 kg

7.0 ELECTRICAL SPECIFICATION

Mains input 100-240v 50/60Hz universal input.

8.0 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 oxygen or nitrous oxide.
Ordinary equipment without protection against ingress of water.

CE and FDA Approved

FEATURES AND BENEFITS

- Enhancing MP is known to improve VA and contrast sensitivity in susceptible ARM patients*
- Low MP is a recognised risk factor for AMD
- Quick and easy to use
- Low cost monocular unit
- Small footprint: Far more compact than anything else on the market
- Easily portable: Ideal for small clinics, hospitals and home visits
- Data can be saved for future reference.
- Graphs may be printed for patient reference.
- Used in clinical trials for measuring macular pigment optical density
- Uses latest in electronics and LED flicker photometry
- Links to Windows PC for ease of use

*VA and CSF is Richer et al (2004). Optometry 75, 4.



TINSLEY M|POD™



Tinsley Precision Instruments now offers the world's only truly portable, low cost, easy-to-use system for measuring the macular pigment optical density (MPOD) using heterochromatic flicker photometry.

The M|POD Macular Pigment Screener was developed in conjunction with the Faculty of Life Sciences at Manchester University and is manufactured in the UK at Tinsley's Surrey headquarters.

It is already proving to be a highly useful and versatile tool for anyone involved in macular pigment screening.

Heterochromatic flicker photometry is a well known science that has been available for over 30 years, but never in a way that could be so easily and cheaply accessed by medical professionals. The M|POD uses Windows™-based software making its data instantly accessible. The data and graphs can be stored on a PC or if preferred printed.

The unit weighs just 5kg and is only 300mm long, 260mm wide and 340mm high making it by far the smallest footprint macular pigment screening device ever produced. It is, therefore, extremely convenient for home visits, or in hospitals where it can be taken to the patient's bedside.



CE marked and FDA approved.

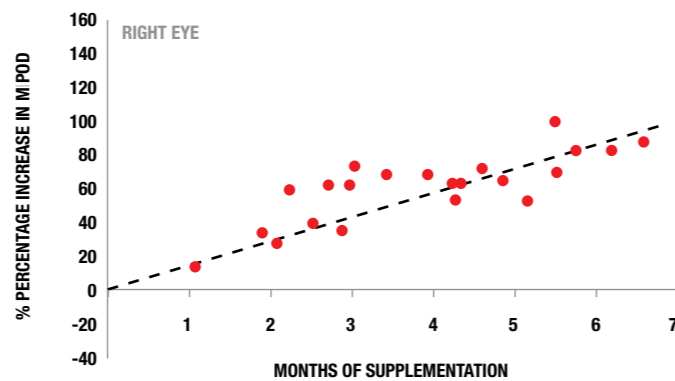
Tinsley, which has been supplying equipment to the ophthalmic industry for over 30 years, has made the M|POD available at a fraction of the price of any other similar screening device thanks to improvements in electronics and the advent of high-quality blue LEDs.

The M|POD uses Blue and Green light to produce a flickering stimulus and the patient's responses to it provide information on the macular pigment optical density within minutes.

This approach could also have huge cost benefits for hospitals and health authorities because it allows the density of the macular pigment to be identified at an early age allowing preventative measures to be taken to increase the optical density and help protect the eye from damaging blue light.

Clinical trials have proved that supplementation and/or a change of diet can improve macular density, so the availability of a low cost, portable screener will be seen as a useful tool to detect early signs of low macular pigment optical density.

Results of supplementation



Sunscreen

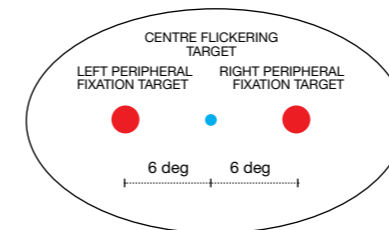


The macular pigment can be described as a sunscreen for the eye protecting the sensitive part of the retina from damaging blue light and acts as an antioxidant. If the density of this pigment is reduced then the retina is more vulnerable and more likely to deteriorate.

The M|POD makes it possible to record levels of macular pigment and by catching those with low levels of pigment so action can be taken to increase the pigment density and help reduce their risk of damage to the eye or even long-term vision loss.

Low levels of macular pigment have been associated as one of the risk factors along side diet, smoking and obesity in the development of ARMD (Age related macular degeneration) People with macular degeneration experience severely distorted vision and find it very hard to read and recognise faces. Eventually the condition can lead to blindness.

How does it work?



The approach adopted by the M|POD is far easier for patients to use than earlier versions of the technology. Instead of, as in conventional methods, patients having to set the point where flicker disappears or is minimised, the measurement consists of a series of button presses by the patient in response to the appearance of flicker. This makes it far easier to use.

The test consists of two stages. The patient's sensitivity to flicker is determined in the first part of the test and the luminance contrast of two lights are normalised for that particular patient. In the main part of the test, the flicker frequency of the blue and green lights is ramped down from a non visible fast flicker rate for a series of luminance ratios of the two lights resulting in a distinct curve from which the minimum flicker point is detected.

The patient views the target through the M|POD and simply presses a button when flicker appears. The difference between the minima obtained from central measurement and peripheral measurement determines the macular pigment optical absorption level. The complete test takes only a couple of minutes.

The M|POD also has an added feature, which enables the unit to estimate the peripheral reading from a known ageing process in the eye if a peripheral test cannot be performed.

Easy to use

It is easy to operate the M|POD, after some basic training, and patients can quickly be advised on whether their macular pigment optical density is low. The unit is easily linked to a Windows based PC for complete display of patient responses on a graph and the measurement is monitored as it is performed.

When the measurement is complete, data can be stored for future reference and graphs can be printed out. Once the results are recorded, the patients can be advised on the benefits of modifying diet and lifestyle as well as taking lutein/zeaxanthin supplements to increase their macular pigment.



MPOD Test Report



Practice Name

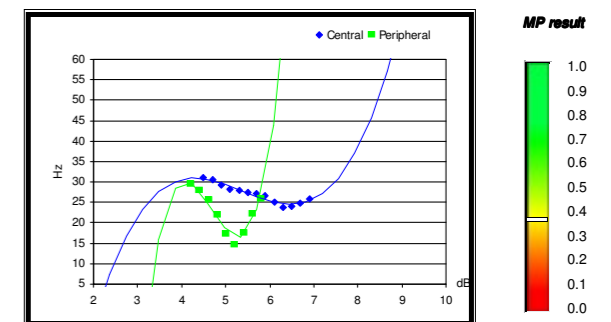
Practice Address

Town ABC DEF Phone 1234 56789012

Personal Details for adrian church 09:11 AM 10/09/2009

Reference 2: Date of Birth 15/08/1969

Mobile
Phone



Result (right) 0.36

Notes

Temporary notes

Supplementary Notes Go Here

Operator 107