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## OPHTHALMOLOGY NEWS

### New tool tracks pigment loss

by Rich Daly EyeWorld Contributing Writer

*Supporters say device will allow early treatment of cause of macular degeneration.*

**A** device launched this fall will allow ophthalmologists to track — for the first time — one of the leading causes of macular degeneration and begin treatment before the onset of vision loss, according to the manufacturer.

The Macuscope (MacuChek, West Bloomfield, Mich.) is the first commercial tool to allow testing of one of the main risk factors for age-related macular degeneration (AMD), a low level of macular pigment. The device is the first commercial

version of flicker photometry devices used for decades in research institutions to track the loss of pigment density in the macula.

Research has found low pigment density can lead to damage of the macula, the central part of the retina, which is responsible for central vision and the ability to see fine detail, according to Michael Greenley, M.D., medical director for MacuChek. This tool will allow ophthalmologists to identify one of the major contributors to AMD, and



**Macuscope**  
**Source: MacuCheck**

once detected, to track their treatment of the pigment loss.

"So we are not making the diagnosis of macular degeneration, we are just letting the patient know in advance and giving the physician a tool to work with," Dr Greenley said. "As people age, they lose pigment in the macular area and it seems to prodrome to macular degeneration."

Patients that exhibit a loss of pigment over time could be treated with ocular vitamins, which have been shown to restore the pigment in the retina. Investigators conducting on-going studies are attempting to determine conclusively whether pigment restoration can stave off AMD, Dr. Greenley said.

Treatment for later stages of AMD, especially the wet form of AMD, have garnered much of the media attention and investor focus in recent years.

MacuCheck has an owner/operator registration number with the Food and Drug Administration for the MacuChek system, which by contrast, is thought to have more of an impact on the dry type of AMD, because there is little ophthalmologists can do to treat such patients until more advanced treatments are developed.

For now, MacuChek recommends the non-invasive and painless test for all adults, especially those with a family history of macular degeneration. AMD is the leading cause of legal blindness in the world, and Dr. Greenley said he expects cases in the U.S. to expand to a near epidemic as the baby-boomer generation ages.

## **How it works**

Patients are tested, seated, and facing the machine. A series of flickering blue and green lights appear as the operator changes the frequency of the flicker based on how the pigment epithelium reacts with what is seen. The flicker rate is changed until the colors are matched to correlate with the pigment epithelium level. Adding more pigment inside the retina through vitamin therapy changes the rate at which patients see the colors even out.

"So there is a subjective element," Dr. Greenley said. "But with repeated testing it should be fairly consistent."

On a note of caution, the five-minute test requires patient cooperation because it is somewhat subjective, in that patients must tell the tester when the flicker changes in a certain way. So, older patients with Alzheimer's disease or dementia may have trouble taking the test. However, the test is relatively simple to administer and most ancillary staff can be trained to provide it.

After testing, patients are placed into either high-risk or low-risk categories, based on whether or not they have low levels of the macular pigment. High-risk patients may be started on a regimen of ocular vitamins, which research has proven can increase macular pigment density within six months. Research has found that a vitamin treatment plan can cut high-risk patients' risk for developing AMD by up to 40%, said David S. Segel, CEO, MacuChek.

On-going testing continues to study the effect of vitamin therapy on patients already diagnosed with AMD, but MacuChek officials said previous research has found some vitamin treatments appeared to improve the vision of some AMD patients by up to 23%.

***Editors' Note:*** *Dr. Greenley has no financial interest in any comments he made. Mr. Segel has a financial interest related to his comments.*