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Doctors of optometry dedicate decades to low-vision care and research

February is Low Vision Awareness Month. About 3 million Americans age 40 and older live with low vision, according to The National Eye Institute (NEI)—and some doctors of optometry have dedicated decades to improving the quality of life for these people. Below, three AOA members share how doctors of optometry can make a difference.

> After low-vision rehabilitation management, uplifting comments such as, 'you have made my life worth living,' are not

Powerful prisms

The NEI has highlighted five technologies that could help people with visual impairments and blindness. Among the technologies are a co-robotic cane, robotic gloves, a smartphone crosswalk app and a camera that provides auditory readouts of objects.

Also on the list is the work of Eli Peli, O.D., who has had a passion for prisms for 15 years. Dr. Peli is professor of ophthalmology at Harvard Medical School and the Moakley

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uncommon.

Scholar in Aging Eye Research at the Schepens Eye Research Institute, Massachusetts Eye and Ear, in Boston, Massachusetts.

In an article by Dr. Peli and other researchers at Massachusetts Eye and Ear, "The risk of pedestrian collisions with peripheral vision field loss" published online in the December 2016 issue of *Journal of Vision,* the authors found that people with reduced peripheral vision, such as patients with retinitis pigmentosa, were at greatest risk of colliding with other pedestrians if they were approached at 45-degree angles.

Out of fear of getting hurt or embarrassed, some people with low vision avoid venturing into crowded public places, Dr. Peli says. Devices, such as prisms that expand the field of vision into the blind periphery of patients, "can create artificial peripheral islands of vision," the authors say.

"We now know that we need to find ways to provide even higher-power prisms than the currently available 30 degrees. We are pursuing a number of approaches to achieve these higher-power devices," Dr. Peli says.

"We have started evaluating the effect of the prisms in avoiding pedestrian collision using a simulated 'walking in a park' situation in our driving simulator," he adds. "Once we complete this study, we are planning a multi-center clinical trial to evaluate the benefit of the device for patients. The trial is planned to start in a year and a half or two years."

Living with low vision

The NEI also features a video online developed by the National Eye Health Education Program. The video, "Living with Low Vision - Stories of Hope and Independence", is narrated by Mark E. Wilkinson, O.D. Dr. Wilkinson is director of Vision Rehabilitation Service at the University of Iowa, Carver College of Medicine, Department of Ophthalmology and Visual Sciences. He also is chair of the NEI's National Eye Health Education Program's Low Vision Subcommittee. A past chair of the AOA's former Vision Rehabilitation Section (now Vision Rehabilitation Committee), he sees patients with inherited eye diseases and vision loss every day.

With specialized low-vision care, Dr. Wilkinson says, people can enhance their functional abilities and improve their quality of life. Adaptive and assistive devices can help them regain their ability to read, shop, watch TV, drive—and even earn a living.

"Depression is something we have to deal with in some of our patients," Dr. Wilkinson says. "Fortunately, the messages of hope found in this video are important for patients to receive because there are things that can be done to help them to function better."

'Life worth living'

Since 1974, Paul B. Freeman, O.D., has provided low-vision care to the residents of western Pennsylvania. As the population ages, Americans are living longer with low vision. Age-related conditions, such as macular degeneration and glaucoma, can impact central and peripheral vision, Dr. Freeman says. "Low-vision rehabilitation is an integral part of the continuum of mainstream eye care, which can offer patients options to improve their quality of life through systematic treatment and management," says Dr. Freeman, who practices in Pittsburgh, Pennsylvania, is a past chair of the AOA's former Vision Rehabilitation Section and author of "The Art and Practice of Low Vision."

Those options depend largely on the patients' needs, beyond their current eyeglasses or contact lenses, adds Dr. Freeman, who encourages other health care professionals to make referrals and work collaboratively with doctors of optometry with expertise in vision rehabilitation.

"In prescribing optical devices, the doctor not only determines the appropriate magnification but also considers environmental factors such as lighting and contrast," says Dr. Freeman. "However, with electro-optical devices (including small, midsized and desktop systems), there are additional factors that can maximize performance, specifically variable magnification and contrast enhancement. Even devices such as e-readers and smartphones have some of these same qualities, as well as apps that can convert text to speech with optical character recognition.

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"As a low-vision practitioner, I often hear initial comments from patients such as, 'without my vision my life is over,'" he says. "But after low-vision rehabilitation management, uplifting comments such as, 'you have made my life worth living,' are not uncommon."

Dr. Freeman and his wife, Kathleen Fraser Freeman, O.D., are among the doctors who prepared the AOA's clinical practice guideline, *"Care of the Patient with Visual Impairment (Low Vision Rehabilitation)*."

Click here to access the guideline.

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