New techniques, technology for improving aging eyes

Helen Adams | MUSC News Center | February 19, 2015
Susan Johnson was treated for presbyopia.

Dr. George Waring IV examines Reinhardt Schindler, a fellow ophthalmologist who came to Waring for a new type of laser treatment to improve his vision.

Johnson, director of health promotion at the Medical University of South Carolina, had developed presbyopia, an official-sounding term for what some people call oldsightedness. The eye’s internal lens becomes thicker and less flexible, making it hard to focus on things close to you.

“It was in my forties, just getting worse and worse, and the reading glasses were driving me crazy,” Johnson said. “It had even gotten to the point where my kids’ faces and the food on my plate were hard to see. It was miserable.”

She’d read about ophthalmologist George Waring IV, MD, who had a growing reputation for using the latest technology to treat age-related eye problems and made an appointment to see him.

Waring is one of those people who makes being extremely busy look easy. He’s medical director of the Magill Vision Center in Mt. Pleasant, assistant professor of Ophthalmology at MUSC, director of Refractive Surgery at MUSC’s Storm Eye Institute.
Dr. George Waring examines Sharon Schaller at the Magill Vision Center.

He said dysfunctional lens replacement is now a big part of his practice.

Although Johnson went to Waring thinking she’d have the procedure, she was both disappointed and glad to hear that her internal lenses were still in good shape despite her reading problems.

Waring recommended LASIK instead, which costs about $2,000 per eye. Johnson only needed to have one eye done to dramatically improve her eyesight.

“I have not put on a pair of glasses since I had the LASIK. It was so easy and life changing. I don’t think a lot of people know LASIK is an option for presbyopia,” Johnson said.

Rinehardt Schindler came to Waring at a different stage of vision deterioration. He had dysfunctional lens syndrome along with cataracts — and high standards. Schindler is a

Dysfunctional lens syndrome is natural aging of the internal focusing lens," Waring said. “The first stage, presbyopia, is when you start having a hard time focusing on things close to you. Later, even with glasses, things don’t look as sharp as they used to.”

Your internal lens becomes cloudy, he said. You start to see glare and halos. “That’s when the dysfunctional lens enters its final stage, developing a cataract.”

Insurance does not cover treatment for dysfunctional lens syndrome until you progress to the point of having cataracts. Waring said some patients in their 50s and 60s don’t want to wait and are opting for a restorative procedure with lasers that we have termed the dysfunctional lens replacement.

“In the past, people would say, oh, you’ve got a pre-cataract so we’re not going do anything. We’ll wait 15 years until it ripens and you’re 80, and then we’ll do your cataract surgery,” Waring said. “We’ve done a large amount of research on this and have shown that not only can we restore a patient’s vision for reading and distance without glasses, we can also vastly improve the visual quality and help prevent their inevitable cataract formation.”

He said dysfunctional lens syndrome is natural aging of the internal focusing lens, writing articles about it for Refractive Surgery Today and Ophthalmology Times. That’s how Johnson heard about him.

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retired retinal surgeon living on Pawley’s Island, South Carolina.

“I’m very critical of who I go to,” Schindler said.

A friend told him about Waring, and Schindler drove to Mt. Pleasant for a consultation. He told Waring his vision problems were taking a heavy toll on his lifestyle.

“I’m physically very active,” Schindler said. “I used to do Ironman triathlons. Now I swim a lot and do stand up paddling and surfing. The glasses were always in the way so I’d take them off, but that made it difficult for me to see how shallow the water was. Over the last three to four years I also noticed a lot of glare, so basically my quality of vision really deteriorated.”

Waring performed laser lens implantation surgery that allowed Schindler to see clearly for the first time in years.

As the technology for treating aging eyes continues to advance, Waring and his colleagues at MUSC are helping to refine it.

“We were the first in the state to use the Catalys femtosecond laser for lens surgery and the first in the country to use some of the new diagnostic devices,” Waring said. “We’ve had the opportunity to validate their clinical and research uses.”

He’s now working on two devices that measure the strength of a person’s cornea (the clear outer layer of the eye) to help determine if patient is a good candidate for corneal laser vision correction.

Waring has also helped develop an all-digital lens-centric eye exam called the Advanced Ocular Analysis. “It not only gives us the most accurate and detailed information about a patient’s eye, we can also better educate our patients on their conditions and visual quality by taking them on a digital tour of their own eye where we can show them their dysfunctional lens and the resultant light scatter.”

Waring said he and his colleagues can now do early detection of aging lens changes. “Our research in this area has gained a lot of attention - there is a tremendous amount of interest nationally and internationally.”

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