

The New York Times

Sleek New Devices Help Low-Vision Patients See

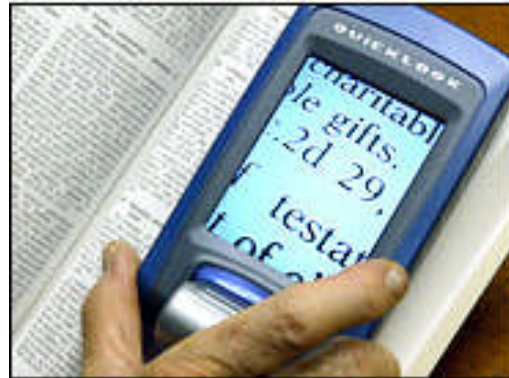
By **KENNETH CHANG**

New York Times, April 6, 2004

With a stylish exterior of metallic blue and gray, the device looks like a personal digital assistant but slightly larger.

Julius Mendalis, 84, a lawyer for the company that makes Arizona Iced Tea, paid \$795 for this gadget, and he loves it, though he is not a man of technology, rarely uses computers and does not surf the Web.

It is helping him read again.



The Quicklook, an amalgamation of a tiny digital video camera and a four-inch liquid-crystal display screen, acts as an electronic magnifying glass, enlarging the text of a newspaper or a legal brief to an inch high. At that size, Mr. Mendalis, whose vision has deteriorated from macular degeneration, can see the letters clearly.

"This has been a world of good," he said. "It's brought back to me what I've been able to do all the time. It's been wonderful for me."

About 16 million Americans suffer from uncorrectable vision loss from glaucoma, cataracts, diabetes, macular degeneration and other diseases. Effective treatments exist for glaucoma, and cataracts can be removed by surgery. But for other eye diseases, no cures exist, only treatments that slow the loss. The National Eye Institute estimates the number of Americans who lose part of their vision to disease will double in 30 years as the population ages.

Macular degeneration, which usually strikes people over 60, destroys the central part of the retina, blurring the center of a patient's field of vision and making it hard to read or recognize faces. About 1.7 million Americans have lost part of their vision from the disease.

Diabetic retinopathy, a complication of diabetes, damages tiny blood vessels in the eye and causes severe vision loss or blindness if the vessels break.

Magnifying glasses, eyeglasses and more elaborate devices like wearable telescopes are the traditional vision aids. Closed-circuit television systems that look like library microfilm readers have been available for decades to enlarge text.

But the proliferation and miniaturization of consumer electronics in recent years have led to a new generation of more powerful and more portable gadgets for low-vision patients.

The computing power of electronics offers capabilities impossible for optical devices. With built-in illumination, they work even in dim lighting.

"Restaurants in the city are notorious for their poor lighting," said Dr. Bruce P. Rosenthal, chief of low-vision programs at Lighthouse International, a Manhattan-based nonprofit group that provides services to people with vision problems.

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Electronics can also alter the image on the fly. Black text on a white background can be flipped to show white text on a black background; the greater contrast is easier for many people to read. Distracting color can be reduced to black and white.

"Eventually, a lot of the electronic devices will begin to replace some of the optical devices," Dr. Rosenthal said, adding that anyone who is thinking about buying a vision aid should first visit an eye specialist to diagnose the underlying problem.

The vision aids, experts say, may even improve mood. A Lighthouse study of 584 low-vision patients found that people who used optical aids, either traditional or electronic, suffered measurably less depression than those who did not have such help.

"Optical aids do contribute significantly to a decline in depression and a decline in disability in the first six months," said Dr. Amy Horowitz, senior vice president for research at Lighthouse.

By contrast, so-called adaptive aids like large-print books, talking clocks and Braille watches did not reduce depression.

"I think it's psychological," Dr. Horowitz said. With optical aids, "you're still doing things the way you used to."

The adaptive aids, she said, might be in essence a surrender to vision loss.

The study could not tell whether the use of optical aids staves off depression or whether people who seek out optical aids are by nature more determined to continue their usual routines and less susceptible to depression, the Lighthouse researchers said.

An eye doctor diagnosed a mild form of macular degeneration for Mr. Mendalis two decades ago, but that did not slow him down. Then, a year and a half ago, while at a restaurant, the vision in his right eye suddenly went black. The blood vessels there had started leaking — the more severe, or "wet," form of macular degeneration.

A laser treatment, photodynamic therapy, helped stop the leaking. A few months later, blood vessels in the left eye started hemorrhaging. He underwent more laser surgery Mendalis continued working, but "my entire work is document reading," he said.

Because he was unable to see clearly, his wife, Sylvia, read documents aloud. She said they got into many more arguments. "It's frustrating for him," she said.

Mr. Mendalis's eye doctor referred him to Lighthouse International.

Scarring in the retina has left the vision in his left eye irreparably blurry, but special glasses with a magnifying lens now allow Mr. Mendalis to read using his right eye, though he has to hold the paper a couple of inches from his face.

On a visit to the store at Lighthouse International, he spotted the Quicklook, made by Ash Technologies of Ireland, and bought one. His wife said that with the glasses and the Quicklook, "he's pretty much on his own now." She added, "My nights are now free."

As the technology has changed, product design has become snazzier. Just a year ago, a device similar to the Quicklook had the size and aesthetics of a large brick, and it was \$100 more expensive. Cost is important, because Medicare and most private insurance plans do not pay for visual aids. A federal study this year will look at the feasibility of Medicare coverage for vision rehabilitation services.

Excerpted from The New York Times, April 6, 2004