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A 'Top 10 List' to Achieve a New, Normal Living With Vision Loss Using technology to accomplish a top 10 List of daily tasks and beyond

By Jennifer Streisand

As the baby boomer population ages, many more of them will be diagnosed with some kind of vision loss.

"75 million people are going to be turning old roughly around the same time, so as a society, we are going to have an epidemic of people experiencing vision loss," says Dominic Calabrese, vice president of public relations at The Chicago Lighthouse for People Who are Blind or Visually Impaired. The Chicago Lighthouse was originally founded in 1906 on the West side of Chicago, and the agency is known worldwide as a holistic center to help visually impaired people with medical diagnoses and treatment, rehabilitation, employment, and daily living.

The Chicago Lighthouse also helps veterans with vision loss by distributing a variety of low vision aids to veterans across the country. The Lighthouse serves private companies and governmental agencies by having several call centers set up in its main facility on West Roosevelt

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Road in Chicago, where the call center representatives who are employed there, are either blind or visually impaired.

It is the ubiquitous technology in our modern world that has brought down barriers and leveled the playing field for people who are blind or visually impaired, says Janet Szyk, Ph.D., president & executive director of The Chicago Lighthouse. When it was once considered a handicap to use special technology, today the use of any kind of technology is perceived as savvy.

In the United States, the leading cause of vision loss among older people-specifically people over 60-is age-related macular degeneration, (sometimes referred to as AMD) according to information posted on WebMD. And the information suggests that most people who have age-related macular degeneration, will not lose all of their vision, but will have to adjust to vision that is different than what it used to be.

Retirement-age people aren't the only ones affected by vision loss-many working age Americans are coping with vision loss too. All people experiencing vision loss, regardless of their age, will need to ask themselves the question: *"What can I no longer do that I need to do on a daily basis or want to do for recreation?"*

This is precisely the question that Tom Perski, senior vice president Rehabilitation Services asks people when they come to the Tools for Living Retail Store that he oversees at The Chicago Lighthouse for People who are Blind or Visually Impaired. The store stocks hundreds of different technological devices to help people who have compromised vision carry out daily tasks. You can shop at the Tools for Living Retail Store online by going to <http://chicagolighthouse.org/store>.

For low vision patients going in-person to the store, Perski asks them to make "A Top 10 List" of the tasks and activities they are having the most trouble with, and then, once in the store, Perski and his staff can find the right products to help them do these tasks again with relative ease, once they practice using them. In this process of learning to do their routine tasks with the help of technology, the person experiencing low vision is able to do what they used to before their vision loss, but they do their routine tasks in a different way. Most importantly, they feel as though there is help for their vision loss.

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"It's something new for the person, of course, but I tell people, don't buy this unless you are prepared to use this every day because it is like developing a new habit and learning to read," Perski explains. "It's going to be slow and a little bit frustrating at first, but if you do it for a short time every day, at the end of two weeks you are going to convince yourself that you can do it. We offer a 30-day money back guarantee for the products."

Low vision technology-sometimes called assistive or adaptive technology- has evolved substantially through the years, and is now available on mainstream devices, but primarily began with what is called a portable CCTV, which stands for Closed Circuit Television Reading Machine. It's like a small magnifying screen that can be held over any type of document to magnify the text and make it more readable. Many also now read the text aloud.

The original CCTVs first came on the market in the late 1970s, and were not mobile, but the size of a computer screen (about 22 inches). They have a tray underneath the screen, and the user can place documents, checks, and whatever needs to be read or written on the tray. The user turns a knob to the left or right to adjust the magnification on the screen, and voila, readability is accomplished. The larger, non-portable CCTVs are still sold today with the technology more refined than ever. Now they come with flat screens, just like flat screen TVs.

"In some cases, it is pretty much the only option that people really have to remain independent," says Perski. "For instance, a person can actually read their mail, the old fashioned snail mail. They can see their own medication bottles. They can look at food labels. If they become really proficient, they can even thread a needle under there, and resume doing all of the little things, activities of daily living that are so important. For an older person, it may mean the difference between giving up their home and moving into some kind of assisted living center."

While CCTVs are still commonly used by people with low vision, some people with low vision need other kinds of assistance that cannot be provided by a traditional CCTV.

Steve Pangere, who is president and CEO of The Pangere Corp., and the CEO of a separate company, Culver Roofing, both in Gary, Ind., uses a special scanner for low vision called Zoom-Ex, made by the ABiSee Co. The scanner takes a picture of the document, and then the screen

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reader he uses on his computer, reads the text aloud to him. Having the scanner has given him access to many more documents, books, and magazines, he explains, because before he had it, his best option was to listen to recorded texts on small disks from the Library of Congress. While many texts are available this way, some are not, particularly when it comes to rarer documents, and documents in a specific field of interest or career.

"I can read not just my contracts, but magazine articles, and I can get certain books, including technical books, that are for my type of career that you are not going to find at the Library of Congress, or that you can get anywhere else," Pangere says. He obtained this scanner from The Chicago Lighthouse.

Pangere is a well known businessman in the Gary, Ind., area where his companies are located, and in March 2012 was inducted into the Northwest Indiana Business and Industry Hall of Fame. The Pangere Center for Inherited Retinal Diseases at The Chicago Lighthouse is named after Pangere's family. Patients receive medical diagnosis and treatment in this part of The Lighthouse.

Steve Pangere has had low vision since he was a young adult, and has been using low vision technology for about 40 years, he says. Over the years, he has become more proficient at using the technology, and he explains that his proficiency comes from a combination of one-on-one training and just using it himself through trial and error.

Reading the newspaper is even relatively easy for Pangere, who calls a special number set up by the National Federation for the Blind called the NFB Newslines, which allows subscribers free access to hundreds of newspapers in an audio format, by pressing the keys on the phone keypad, and then the subscribers can hear the newspaper of their choice, and even the articles of their choice, read to them. In order to apply for the service, go to <http://www.nfbnewlines.org/>, and then click on "online application" once at the website or call 866-504-7300 for more information. Applicants will be asked to submit proof of their visual impairment or blindness.

At the top of the page on the National Federation for the Blind website (www.nfb.org), is a quote that reads, "The real problem of blindness is not the loss of eyesight. The real problem is the misunderstanding and lack of information that exist. If a blind person has proper training and

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opportunity, blindness can be reduced to a physical nuisance."

Proper training and accessibility to the low vision technology is not a minor point however, and sometimes is hard to achieve, depending on where a person lives, what type of support system they have, and their stage of low vision because for most people, having some vision, even very limited vision, is useful when learning new technology, or anything new, for that matter.

In the broad array of low vision technology, there is the established technology, like the CCTV, and then there is also brand new technology, like an Implantable Miniature Telescope (IMT) that is surgically implanted into the eye for patients with end-stage macular degeneration. The implant acts as a magnifier, enlarging the visual image for the patient, and it's hardly noticeable because it is surgically implanted, and not hand-held, as are the telescopes that were the only option before this was available for AMD patients, explains Szlyk.

The Implantable Miniature Telescope was approved by the Food and Drug Administration in 2010. The Chicago Lighthouse has a partnership with Rush Medical Center in Chicago, where Rush does the surgery, and then the patient goes for 13 weeks of Rehabilitation at The Chicago Lighthouse.

"It may provide the ability to recognize a loved one's face, for example, and patients may appreciate the landscape better," explains Szlyk. "It acts as a magnification device."

Another brand new technology, and currently being tested in an FDA clinical trial at The Chicago Lighthouse, is a device called the BrainPort, developed by Wicab, Inc., says Szlyk. The device translates the visual image into tactile stimulation on the tongue to help patients with severe vision loss, or who are totally blind, orient themselves to their whereabouts, and such can function as a navigation device.

"You put it on your tongue when you want to see something, and you take it off when you don't," explains Szlyk. The patient also wears a fashionable pair of sunglasses, which is part of the system, and there is a small computer that is worn on the person's belt, she adds. BrainPort, and the clinical trial, are featured on the cover of The Chicago Lighthouse's 2011 annual report, entitled, "New Sites, New Sight," and can be read online at <http://chicagolighthouse.org/Media%20Center/Publicat>

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To determine what stage and what technology is needed to help a low vision patient achieve better functionality in their daily routine, they should go for a low vision evaluation, says Kara Crumbliss, O.D., a doctor of optometry and director of Clinical Services for the Forsythe Center for Comprehensive Vision Care at The Lighthouse. One of the missions of The Chicago Lighthouse is to help people who are visually impaired maximize use of their remaining vision. What this means, Crumbliss explains, is that if someone is diagnosed with macular degeneration, for example, they can learn to read using their peripheral vision, and often with the help of technology for low vision. In this way, they are "maximizing the remaining vision that they have," because they are using it for such a vital daily living task as reading.

There is a distinction between low vision technology, and technology for the blind, she explains.

"In the low vision category, the technology involves magnification, and that can be low tech, such as reading or computer glasses, to high tech, which are the CCTVs, both portable and non-portable," she says. "The technology for blindness, on the other hand, is auditory, some speech, and text-to-speech, Braille instruction, technologies related to Braille, as well as some of the GPS technology used in an auditory manner with patients." Often low vision patients will use blindness technology too, such as text-to-speech because it is more efficient for them to carry out daily tasks, Crumbliss adds.

Each person has to develop their own repertoire or combination of technologies to achieve their "Top 10 List," of work and recreational activities that they need to do. And, if they become good at the technology, and are motivated, they can go beyond 10 activities, to a top 20 or 30 list, or beyond.

So as not to scare off a low vision patient who may be reading this article, there is a certain learning curve in using technology, but once the low vision patient has made the transition to carrying out daily tasks in a different way, their rehabilitation is complete, says Vincent Rappa, vice president of Low Vision Sales at HumanWare, a Florida based company that sells low vision products, and products for people who are learning disabled.

"In other words, when somebody learns how to use

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our CCTV, they have been rehabilitated to read," he says. As long as they have some vision, they will be able to use the CCTV, and once the person has mastered learning how to use it, the rehabilitation process of learning to read in a different way is complete, he adds.

To have accessibility or assisted technology on a computer, however, users can also tap into some of the options that already exist on mainstream computers and mobile devices such as Apple and Microsoft products.

According to information online at the Apple website, the new iPhone 5 has a larger screen and a more vivid picture, making the graphics and the pictures on the phone easier to see, right off the bat. The iPhone 4S has full-screen magnification, and a screen reader. The website tells readers that the program called "voiceover," helps iPhone users read everything they would need on the screen, and can be enabled easily using the set-up assistant feature. This "voiceover" program is available on the iPhone 4S, iPhone 4, and the iPhone 3GS. Many Braille displays can now also be used with the iPhone.

The Apple iPad too, has many features that are useful for low vision patients, says Robert Chun, O.D., a low vision optometrist, and a post-doctoral research fellow at the Pangere Center for Inherited Retinal Diseases at The Chicago Lighthouse.

Apple is making great strides to help the visually impaired, he says.

"The capabilities of the iPad, and the iPhone are increasing and improving," says Chun. The iPad has a lot of accessibility features that allow visually impaired patients to see the font size just about as large as they need it, so they can check their e-mail, read PDF documents, e-books, and so forth, explains Chun, allowing them full and comfortable access to the features that a person with normal vision would have. Many of these accessibility features can be used by changing the settings on the iPad, he says. There is also a dictation app on the iPad that types the text as the person speaks it.

For much more specific information on how to use the accessibility features on Apple devices, go to <http://www.apple.com/accessibility>.

Microsoft too has many features to help people with low vision, including a screen magnifier. On a Windows 7 computer, users can adjust their computers for better readability without buying any

additional software, such as using the high contrast function or resizing the desktop icons to make them easier to see. Even on an older, Windows XP computer, there is a perfectly functional screen reader, who reads the letters as the user types them. It is not a fast screen reader, but may be an excellent way to get started using a screen reader without any additional expense. For much more information on all of the low vision features on Microsoft computers, go to

<http://windows.microsoft.com/en-US/windows/help/accessibility>.

Although Apple and Microsoft features are free and already there, accessibility technology takes practice, and users need to become familiar with using the features, just as any other accessibility software.

"Don't suffer in silence; get yourself wired, and go out and grab that opportunity. That is our message," says Szlyk of The Chicago Lighthouse.

Consider, in life, that few things remain the same. Technology is truly adaptive, when the user creates a personal "techno repertoire" to improve his or her quality of life. Then daily activities really do feel like the new, normal routine.

Jennifer Streisand is a freelance writer based in West Lafayette, Ind. She primarily writes journalistic stories focused on lifestyles for local and regional publications. She has also taught undergraduate courses in the Department of Communication at Purdue University, now known as the Brian Lamb School of Communication. Previous to teaching at Purdue, she worked as a high school English teacher in Maryland. After earning her bachelor's degree, Streisand worked for 13 years as a broadcast journalist at television and radio stations in New York, Illinois, Ohio, Florida, and Maryland.

She holds a bachelor's degree from Binghamton University, a master's degree from Purdue University, and an Indiana teaching license, grades 5-12. She has low vision, and uses adaptive technology in her writing, and to accomplish daily tasks.

For more information visit her website, <http://jenstreisand.com/>

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