Technology Helps Blind to See with Brain

New advances in technology, genetics, brain science and biology are making a goal that seemed long out of reach--restoring sight--more feasible. Scientists involved in the project, the artificial retina, say they have plans to develop the technology to allow people to read, write and recognize faces.

“With an aging population, [blindness] is obviously going to be an increasing problem,” said Michael D. Oberdorfer, who runs the visual neuroscience program for the National Eye Institute, which finances several sight-resoration projects including the artificial retina. Wide-ranging research is important, he said, because different methods could help different causes of blindness.

“Continued on page 2...”

In This Issue:

Don’t Lose Sight to Diabetes.............................5

Calendar of Events.............6

Second Annual Macular Degeneration Town Meeting

“Eye/Brain Connection”

November 15
2 - 4:30 p.m.
Sibley Memorial Hospital
Ernst Auditorium

Prevention of Blindness Society of Metropolitan Washington®
1775 Church Street, NW, Washington, DC 20036
(202) 234-1010 | www.youreyes.org
Technology and Brain

Approaches have included implanting electrodes in monkeys’ brains to see if directly stimulating visual areas might allow even people with no eye function to see. Other techniques focus on delaying blindness, including one involving a capsule implanted in the eye to release proteins that slow the decay of light-responding cells. And with BrainPort, a camera worn by a blind person captures images and transmits signals to electrodes slipped onto the tongue, causing tingling sensations that a person can learn to decipher as the location and movement of objects.

The artificial retina works similarly, except it produces the sensation of sight, not tingling on the tongue. With the artificial retina, a sheet of electrodes is implanted in the eye. The person wears glasses with a tiny camera, which captures images the belt-pack video processor translates into patterns of light and dark to represent an object’s contours, brightness and contrast, which pulse along optic neurons into the brain. Currently, “it’s a very crude image” because the implant has only 60 electrodes; many people see flashes or patches of light. Researchers are also studying what affects results, including whether practice or disease characteristics influence the brain’s ability to relearn how to process visual signals.

“In 20 years, people will think it’s primitive, like the difference between a Model T and a Ferrari,” said Dr. Lucian Del Priore, an ophthalmology surgeon at New York-Presbyterian Hospital/Columbia University Medical Center, who has implanted the electrodes. “But the fact is, the Model T came first.”

--New York Times, September 2009
Join us for the
Eye/Brain Connection

Discuss the relationship between the brain and the retina!

Sunday, November 15
2 - 4:30 p.m.
Second Annual Macular Degeneration Town Meeting

For more information, please call
(301) 312-3685

Co-sponsored by Jewish Community Center of Greater Washington and Senior Beacon

Sibley Memorial Hospital
Ernst Auditorium
5255 Loughboro Road, NW
Washington, DC 20016
Diabetic eye disease (diabetic retinopathy) is the leading cause of new cases of profound vision loss among people ages 20-74. However, most vision loss due to diabetic retinopathy is preventable with early detection and intervention.

Diabetic retinopathy is caused by high blood sugar which damages tiny blood vessels of the retina. In response, the body grows fragile, new blood vessels (neovascularization) within the retina. A person with diabetic retinopathy might notice symptoms only after damage is done. An eye doctor is able to detect retinal changes much sooner and can help to prevent vision loss. You can learn current information regarding symptoms, treatments, and hope through research.

November is recognized as Diabetic Awareness Month. The Prevention of Blindness Society of Metropolitan Washington is offering area-wide diabetic eye health education programs to uncover ways in which people with diabetes (or suspected diabetes) can promote lifelong sight.

Check our Calendar of Events on page 5 for a program closest to you.
“Don’t Lose Sight to Diabetes”
What You Should Know

• Saturday, November 7, 2009
  Diabetic Expo, 9 a.m. - 3 p.m.
  with Pedro Rivera, M.D., ophthalmologist
  Colony South Hotel
  7401 Surratts Road
  Clinton, MD 20735

• Tuesday, November 10, 2009
  Low Vision Group, 11 a.m.
  Gustavo Corrales, M.D., ophthalmologist
  Washington Hospital Center, Eye Clinic
  110 Irving Street, NW
  Washington, DC 20010
  Free parking sticker. Call (202) 877-6081 to reserve complimentary lunch.

• Monday, November 16, 2009
  Aging Eye Network, 1:15 p.m.
  Eric Weichel, M.D., ophthalmologist
  Holiday Park Multiservice Senior Center
  3950 Ferrara Drive
  Silver Spring, MD 20906
Calendar of Events

• Tuesday, November 17, 2009
Vision Support, 12:30 - 1:30 p.m., Bring a bag lunch
Michael Lai, M.D., retina vitreous surgeon
Friendship Heights Village Center
4433 Southpark Avenue
Chevy Chase, MD 20815
Dessert and beverage provided.

• Monday, November 16, 2009
Low Vision Group, 2 p.m.
Falcon’s Landing
20522 Falcon’s Landing Circle
Potomac Falls, VA 20165

• Wednesday, November 18, 2009
Low Vision Group, 10 a.m.
Vinson Hall
6251 Old Dominion Drive
McLean, VA 22101

• Wednesday, November 18, 2009
“Picture This!,” 1 - 2:30 p.m.
National Gallery of Art, West Building
Meet Second Floor, Rotunda
4th and Constitution Avenue, NW
Washington, DC 20565 / (202) 737-4215
Wheelchairs and assistance are available by calling (202) 234-1010 by November 11.
Tea & Conversation
“Don’t Lose Sight to Diabetes”
What You Should Know...

Guest Speaker
William Deegan, M.D.
Ophthalmologist

December 1
1:30 p.m.

Charles E. Beatley Jr. Central Library
5005 Duke Street
Alexandria, VA 22304

For more information, call POB (202) 234-1010
Save the Date

December 1: “Seeing Clearly in 2010,” Andrew Adelson, M.D., Washington Hospital Center, Eye Clinic, 11 a.m.
December 1: “Don’t Lose Sight to Diabetes,” William Deegan, M.D., Charles E. Beatley Jr. Central Library, 1:30 p.m.
December 8: Low Vision Group, Falcon’s Landing, 2 p.m.
December 12: Macular Degeneration Network, Sibley Memorial Hospital, Ernst Auditorium, 10:30 a.m.
December 16: Low Vision Group, Vinson Hall, 10 a.m.
December 22: Vision Support Group, Friendship Heights Village Center, 12:30 p.m.
December 23: National Gallery of Art, “Picture This!” 1 p.m.

Please send an E-mail to jheilman@youreyes.org.

To receive E-mail reminders about upcoming events,

RETURN SERVICE REQUESTED

Handicapped
For the Blind or
FREE MATTER