The New York Times
nytimes.com

April 24, 2007

Vision Restoration Study Shows Promise

By THE ASSOCIATED PRESS

Filed at 12:27 a.m. ET

WASHINGTON (AP) -- Electrodes inserted in the brain may point the way to restoring sight lost to eye disease or trauma. The research in monkeys is in very early stages, but has shown some promise, Harvard Medical School researchers report in Tuesday's issue of Proceedings of the National Academy of Sciences.

While researchers have worked on developing implants for the eye's retina, John S. Pezaris and R. Clay Reid turned their attention to a portion of the thalamus that relays signals from the retina to the brain's visual cortex.

They were able to get the brains of the monkeys to register a point of light by sending a signal down the electrodes -- even though no actual light was visible, Pezaris said in a telephone interview.

''We don't know what it looked like because we can't really ask them,'' he said. ''But there definitely was something.''

A single point of light may not sound like much, but Pezaris says the next step is to try and get eight points to register, which would allow the researchers to begin forming shapes such as vertical or horizontal lines.

''If that works we will try more and more and more,'' he said. ''At some point we hope to move into humans, and once we can do that, even on an experimental basis, the amount we will be able to learn will grow.''

That is a few years away, he said, but if all goes well it might lead to treatments for people who have lost their vision to accidents, cancer or diseases such as glaucoma and macular degeneration.

This technique hadn't been tried because of the hard-to-reach location of the thalamus, but Pezaris said the advent of deep brain stimulation for treating Parkinson's disease suggested that technique might be adapted.

So the researchers placed electrodes in the lateral geniculate nucleus, a section of the thalamus, in test monkeys that had been trained to look at a spot of light on a screen in a darkened room.

When the light was placed in different spots, the monkeys looked at it. Pezaris and Reid then stimulated LGN in an area that would have responded to a light in a specific spot -- and the monkeys looked at that spot, just as though there was a light there.

Dr. Sherry L. Ball, a research health scientist at the Cleveland VA Medical Center, called the work a ''very

exciting and new approach.''

''We've always thought that the LGN wasn't a practical site for stimulation with a prosthetic, but this team is starting to prove otherwise. We know the LGN is well organized. This solves the problem of not knowing how to stimulate it and thus makes it a better candidate than the cortex,'' said Ball, who was not part of the research team.

However, Ball added, ''The difficulty is going to be in hitting the exact targets in the LGN. Technology is improving all the time but imaging the LGN for electrode implantation is not yet precise.''

Pezaris' research was funded by the National Institutes of Health, the Dana/Mahoney Foundation, the Lefler Fund, the Kirsch Foundation and the Bushrod H. Campbell and Adah F. Hall Charity Fund.

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