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MEDICINE



C.M. GUERRERO/EL NUEVO HERALD

A FIRST: Dr. Ninel Z. Gregori, an ophthalmological surgeon at UM Bascom Palmer Eye Institute, explains the bionic eye she implanted in the eye of Carmen Torres, right.

Letting the light in with new bionic eye

■ **Doctors at UM's Bascom Palmer Eye Institute performed a procedure for the first time in Florida to help a Tampa woman regain a portion of her sight.**

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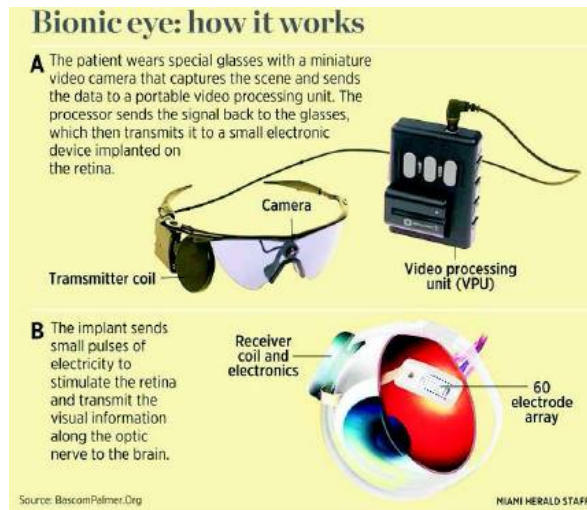
Carmen Torres woke up one morning in absolute darkness. It took 16 years and a team of doctors to bring back the light.

Torres, who became blind at age 45 from a hereditary degenerative eye disease, regained her vision after a team of doctors at University of Miami's Bascom Palmer Eye Institute implanted the Argus II Retinal Prosthesis System, known as the bionic eye.

This is the first surgery of its kind in Florida.

"When you lose your vision, you feel like something has been stolen from you. You are in darkness all the time," said Torres, now 58. "But now I have an additional tool that gives me more confidence in my daily life."

The bionic eye system includes special glasses that are hooked up to a device that transmits images to the optic nerve by stimulating the retina. The treatment can apply to patients with severe retinitis pigmentosa, a ge-



netic condition that causes the retina to deteriorate and not let light pass through. One in 4,000 people in the United States is affected, according to the National Institutes of Health.

About 100 patients worldwide have received the bionic eye so far.

Torres noticed her eyesight fading over time, but did not expect to lose all light perception.

According to the NIH, only the most severe cases of RP result in complete blindness, Torres' condition.

Torres was the ideal candidate for the bionic eye, which the Food and Drug Administration approved in 2013 for limited use.

The procedure requires doctors to surgically implant an array

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'Bionic eye' implant brings back light

• BIONIC EYE, FROM B

of electrodes on top of the retina. After surgery, the patient begins wearing special glasses with a miniature video camera attached, which captures images that are sent to the implant. The small pulses of electricity from the implant stimulate the retina, which the brain interprets as spots of light.

After her surgery in November 2014, Torres, who was diagnosed with her condition when she was 18, is learning how to discern objects by identifying the contrast of light and dark.

"You have to know what light is there. It is very hard to identify the kind of light for every object that you see," Torres said. "It's like learning a new language."

At her Tampa home, Torres practices with dif-

ferent computer exercises designed to help her recognize patterns of light, slowly working up to identifying letters and moving objects.

Now she can play ball with her 5-year-old grandson, and perform daily tasks around the house.

The bionic eye, made by Second Sight Medical Products Inc., also holds hope for patients with other retinal degenerative diseases such as age-related macular degeneration. The company recently entered a clinical study for macular degeneration in the United Kingdom.

"This is what we devote our careers to," said Dr. Janet Davis, one of the Bascom ophthalmologic surgeons who operated on Torres. "To give sight to people we thought were irreversibly blind."