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Device restores musical talent that Gehrig's disease took

By Robert Davis, USA TODAY

HOUSTON — Caught in the grip of a neurologic disease, guitarist Freddie Everett no longer can stand on a stage and play the kind of rock 'n' roll that brought fans to their feet. But an eye-tracking computer that allows him to mix music is giving him and his fans new hope.

The condition commonly called Lou Gehrig's disease — amyotrophic lateral sclerosis, or ALS — has left Everett unable to walk, talk or breathe normally. But a device known as ERICA, for Eye Response Interface Computer Aid, uses an infrared camera to track the glint in Everett's eye so that he can manipulate software functions by moving his gaze across a computer screen. ERICA lets him do everything from type messages to mix his previously recorded music.

"All of us have a different definition of what quality of life is. For Freddie, it's music," says his doctor, Stanley Appel, founder of the ALS clinic at Methodist Hospital here. "Here is a guy who lived and breathed music 24/7."

There are several eye tracking systems on the market. There are about 1,000 ERICA systems in use today, according to estimates by the manufacturer, Eye Response Technologies of Charlottesville, Va.

Hope — and maybe a longer life

Appel says the device "is giving Freddie a sense of hope."

Everett played guitar and sang for 25 years, including opening performances for Ted Nugent, Sammy Hagar and Alice Cooper, before he was diagnosed with ALS in 2006 at the age of 47. Everett was known for his ability to bend the strings on his guitar to create unique sounds.

"He threw down good rock," says Brian Austin, a guitarist from the local band Outlaw. "There aren't too many people around this town that can do what he did. He was an artist. This is a bad disease."

Everett performed for a time after his arms got weak. If others put his guitar strap around his neck, he could still use his fingers and his guitar's whammy bar to bend the strings to hit memorable notes. But when he was no longer able to control his fingers, he stopped playing.

"After his last performance, he was very, very, very depressed," says Everett's wife, Annette. "He would just sit and look at his guitars. It is devastating when you have that music in your head and you can't get it out."

The disease attacks motor neurons, leaving otherwise healthy muscles without needed signals to and from the brain to control movements. On average, people with ALS live two to five years after diagnosis, says Linda Richardson of the ALS Association's Greater Houston Chapter.

But some live much longer, and Appel says one key to survival appears to be hope.

"The more hope you have and the more willing you are to fight this and hang in there, the better you are going to do," Appel says.

ERICA provides hope, Appel says, because it opens the door to communication for both the person with ALS and others, ranging from friends to the medical team.

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"Once he can communicate, you feel like you can communicate with him," Appel says. "He can hear you. He can think. He can feel. His sensations are intact. His intellect is intact. His musical skills are intact. But he is locked into an inability to express himself to the world."

ERICA allows people to turn their eyes into commanding tools. The \$7,900 device uses an infrared camera to track eye movement across a computer screen. When the user pauses on part of the screen, the computer registers that, similar to the click of a mouse.

Shortcuts allow the user to order the computer to do many tasks with few clicks. It offers common phrases, for instance, when it sees where the user appears to be going in a certain message.

The device is also helping people who are paralyzed from traumatic injuries and other medical disorders, says Teresa Westerbur, an occupational therapist and assistive tech specialist who sells the ERICA devices across Texas.

While the first words some people transmit through the machine have been "There is a God," she says, others get right to business, saying things like, "When you move me this way it hurts."

"When you can give a voice to somebody who hasn't spoken in seven years, it is very rewarding," Westerbur says.

The will to live and make music

Everett's family saw his mood lift immediately after he began using the device to do things as simple as send e-mail, surf the Internet and change the TV channel.

"This gave him a reason to want to live," says his ex-wife, Cathy Everett. Before he got the device, Everett did not want to have a breathing tube permanently inserted into his throat because he saw no reason to extend his life.

Now he does. And he's shopping for music amplifiers and gathering music from other artists to mix with ERICA.

Says Annette Everett: "That one machine changed his whole life."

Freddie says in an e-mail, typed into the machine with his eyes, that ERICA "has changed my life and has given me the will to continue with the greatest gift that I have (been) given in this life which is music. ... I will continue to make music and spread the love around."

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