ADHD patients play video games as part of treatment

By Susan Jenks , Florida Today

A generation raised on video games is inspiring researchers' efforts to unlock the mysteries of a puzzling learning disorder that afflicts millions of school-age children and even some adults.

Whether speeding down a virtual street in Sony's *Gran Turismo* or slaying Spyro the Dragon, researchers hope games such as these will improve the lives of those with attention-deficit hyperactivity disorder, commonly known as ADHD, or cognitive-processing difficulties.

People with these disorders experience "constant frustration," says Henry Owens, a Melbourne, Fla., clinical psychologist who recently began offering a patented video game system, which evolved from NASA technology, to some of his patients.

"If they just play video games on their own, they will zone out," he says. "When they play on this system, if they zone out, the video game doesn't respond any more," acting as an incentive to improve focus and concentration.

That comes through controlling brain-wave activity, which some researchers say is too slow or too fast in certain areas of the brain when patients have ADHD. Video game play is a form of neuro-feedback, Owens says, which teaches patients to self-regulate brain-wave patterns to improve learning.

But some researchers remain cautious.

"It's still controversial," says Dr. Andrew Adesman, chief of developmental and behavioral pediatrics at Schneider Children's Hospital in New Hyde Park, N.Y.

He says studies have yet to show video game play with a neuro-feedback component has either a short-term or long-term benefit, despite parents' desire to explore other options in the wake of recent concerns about Ritalin and other stimulants used to treat ADHD.

They need to ask, "Does it help, and is it the best treatment available?" says Adesman, a spokesman for Children and Adults with Attention-Deficit/Hyperactivity Disorder, a non-profit education, advocacy and support group in Maryland.

The concern, he adds, is parents might abandon mainstay treatments — a combination of pharmacological and educational interventions that have been tested and proved over time.

Owens, however, says some patients have been using the video game system, developed by the San Diego company CyberLearning Technology, in combination with medications, while others want to try the non-drug alternative first, before turning to drug therapy.

Owens says he has four patients playing Smart Brain Games (www.smartbraingames.com), as the system is known, at home — a recent alternative to in-office sessions, which began about a year ago.

Of the home training, he says, "Its advantage is intensity," although he advises against playing more than 20 minutes a day for children younger than 10, and no more than a half-hour daily for everyone else.

And while the company makes the system available directly to consumers — and it is compatible with any Sony off-the-shelf video game — Owens says that without an initial evaluation with an electroencephalogram or EEG, to map brain activity, "how would you know what's being treated?"

"Because this is so new and such a commitment," he says, "we don't want parents to do it lightly."

FDA approved

In Florida, Owens is one of only five practitioners authorized by the company to offer its gaming system.

Lindsay Greco, a co-founder of CyberLearning, says the company has 54 providers Nationwide, identified by "licensure and their expertise in neuro-feedback."

She says the system has approval from the U.S. Food and Drug Administration, and that by mid-2003 the company had acquired an exclusive license from NASA to take Langley Research Center's technology, enabling researchers to measure the brain waves of pilots during flight simulations, into the gaming arena.

The device works through a specially designed helmet, with built-in sensors that monitor a player's brain waves. Signals from the sensors are fed through a signal-processing unit and then to a video controller as a game is played.

"There are other systems with computer-based technologies where the bar goes up and down," Greco says. "But these are rudimentary. Our games empower you to change your own brain's physiology."

Like Owens, she says the best games are jumping and racing games that provide consistent movement and a better ability to measure feedback response.

Also, where there is a diagnosis of ADHD, she says, patients should seek providers' expertise on how best to use the system.

Of the roughly 700 systems sold, she says, about 70% have gone to patients using them under the supervision of a health care professional, while 30% have been bought by people for entertainment or those "simply wanting to sharpen their attention or memory."

Greco says in-office neuro-feedback programs normally cost from $4,000 to $5,000, while their system costs $584, with in-office network provider supervision running less than $2,000. Insurance typically does not cover any of these expenses."Cost has been a huge challenge for many consumers," she says.

'Quite helpful'

Although he has not worked with the video game system, Thomas Peake, another Melbourne clinical psychologist, supports the concept "in the right hands."

"If it's done right, these things, in and of themselves, can be quite helpful," Peake says. "And kids are used to playing games and like them."

He says he used to do biofeedback to help patients control pain and has seen it used in major medical centers to help speed recovery in stroke patients.

"Most people off the street would not know how to use these devices, however," he cautions. "But, to me, the principle is a good one."

http://www.usatoday.com/tech/gaming/2006-03-09-game-therapy_x.htm