

iPad research promising for children with cortical visual impairment

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Moxie is working with Muriel Saunders, an assistant research professor at KU's Life Span Institute.

(Medical Xpress) -- A researcher at the University of Kansas believes the iPad could vastly improve the lives and prospects of children living with cortical visual impairment, a severe neurological disorder resulting from brain damage that prevents children from interpreting visual information.

"We tested 15 children and were absolutely shocked," said Muriel Saunders, assistant research professor at KU's Life Span Institute. "Every single child was enthralled with the iPad. Children that typically didn't look at people, didn't respond with objects or responded in a very repetitious fashion, were absolutely glued to the iPad. It was an amazing experience."

Saunders, who works with children with CVI to help them develop

[language skills](#), said that traditionally such children work with therapists and parents using a light box, akin to the light box a doctor uses to see an X-ray. This is because children with CVI have an easier time seeing lights and objects in high contrast.

"Someone with a severe CVI will spend a lot of time looking at lights," Saunders said. "They might just sit and look at a light inside the house, or typically they look out the window into the bright sunlight. They might look briefly at something passing by, but they don't look at faces, and they don't look at objects. So they appear to be blind."

With its bright screen, the iPad replicates a light box -- but its interactivity, sound and color are a great deal more engaging to the children with CVI.

After a research assistant working with Saunders asked to use an iPad with the children as a possible light-box substitute, Saunders saw the powerful draw the device had for the children.

"We were using some very simple infant applications," said Saunders. "One was called 'Baby Finger,' where you just touch the screen, and sounds and images and colored shapes appear on the white background. So, in many ways, it was similar to a light box except for instead of black and white, there were bright colors. We also looked at a Dr. Seuss book."

Parents of children with CVI had been the first to notice the iPad's potential as a therapy tool for their kids. Word of the device's promise has begun to spread on Internet chat rooms and social media. But no formal research documenting the iPad's power to help children with CVI has been conducted yet.

Saunders hopes to change that and now is writing a grant proposal to the National Institutes of Health to conduct a thorough study.

"Using the iPad, not only can they interact with a screen, but we can teach them through a series of steps to control things on that screen," the KU researcher said. "There are so many apps already available; we don't have to go out and make our own apps. There are apps available to make a communication board. There are apps available that have different levels of difficulty. Parents of children with CVI are already learning that the iPad works well. There are blogs that say, 'Look at this one' or, 'Look at that one! My child is responding to this app.'"

Early intervention in the lives of [children](#) living with CVI is not just crucial to their development; it also could help them to gain better vision as they grow. Saunders said the iPad could be a crucial part of this life-changing therapy.

"With the proper intervention techniques, the amazing thing is that the child's brain grows the brain cells needed in the cerebral cortex," she said. "It grows the brain cells necessary to begin understanding what their eye is seeing. So they develop the ability to interpret images, sometimes just partially, sometimes fully."

Saunders is conducting the initial tests of the [iPad](#) in cooperation with the Junior Blind of America in Los Angeles.

Provided by University of Kansas

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