

Babies & Robots: Infant power mobility on display

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Andrew's power chair allows him to explore the world, aiding his cognitive development.

Children with mobility issues, like cerebral palsy and spina bifida, can't explore the world like other babies, because they can't crawl or walk. Infant development emerges from the thousands of daily discoveries experienced by babies as they move and explore their worlds.

Mobility-deprived kids start exploring when they can operate a traditional power wheelchair, typically at age 3 or often older.

Research done by University of Delaware researchers is turning that on its head and could potentially change the way these children's brains develop.

Physical therapy professor Cole Galloway and mechanical engineering professor Sunil Agrawal have developed tiny power chairs babies as young as 6 months can operate using a joystick.

Now, they've paired with Permobil, a national producer of power chairs, and outfitted a chair for toddlers.

Galloway will be showcasing this research next week in Las Vegas at the American Physical Therapy Association's Combined Sections Meeting. (Tuesday, February 10, 10am-3pm)

A 17-month-old boy, Andrew, who's been driving the robots for more than a year, will be on hand to demonstrate the technology. On an average day, Andrew uses his chair to navigate his home and the outside world. He is ready to attend pre-K next year, impressive progress for a child with spina bifida.

Galloway believes providing mobility to children who wouldn't have it otherwise could impact their lives in countless ways, especially when you consider the rapid brain development during infancy.

"Babies literally build their own brains through their exploration and learning in the complex world," he says. "Their actions, feelings and thinking all shape their own brain's development.

"Mobility is linked to widespread advances in cognitive development and learning abilities in typically developing infants."

The University of Delaware has filed patents and is working to bring to market a robot-enhanced mini wheelchair for children aged 6 months-2 years.

For more information, check out:

www.udel.edu/research/media/babiesrobots.html
www.udel.edu/udaily/2009/oct/robots100708.html
[www.udel.edu/PT/About Us/People/galloway.html](http://www.udel.edu/PT/About%20Us/People/galloway.html)

Source: University of Delaware

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