Treadmill training gives special kids a leg up

STEPS (Supported Treadmill Exercise Program at Sacramento State-Easter Seals) is a free program that puts tots with neuro-motor impairment on miniature treadmills – and helps them learn how to walk sooner and more independently.

“There are damaged or underdeveloped areas of the brain in these children, so there is a delay in their developmental skills,” says Katrin Mattern-Baxter, a professor of physical therapy who launched STEPS at Sac State this fall. “We can’t fix the brain damage, but we can fix the way the brain develops. Task-specific training is designed to change the plasticity of the brain in specific areas that are, in this case, related to walking.”

STEPS is an outgrowth of Mattern-Baxter’s research on intensive treadmill training for very young children with cerebral palsy and originally was conceived in collaboration with therapists from Easter Seals Superior California, Sacramento.

Two days a week, pre-ambulatory children come to the STEPS program in Folsom Hall, where students working on their Doctor of Physical Therapy (DPT) degree assist and monitor them. The idea is to keep the youngsters moving on the little treadmills, to help them learn how to walk either independently or with an assistive device, such as a walker.

STEPS accepts children 4 years old and younger. They must weigh less than 60 pounds, be able to sit for 30 seconds unsupported and be able to take at least five steps with some support. Youngsters are referred by physical therapists in the Sacramento area.

Mattern-Baxter has four little treadmills from her previous research that now are outfitted with iPad stands so the children can watch cartoons while exercising. Recently, Eben Acevedo and Michael Cimino, both 2½ years old, walked next to each other at a top speed of 1 mph. Before long, both had worked up a bit of a sweat.

Their every step was made under the watchful eye of the DPT students, the professor and their mothers.

“It’s been wonderful,” says Marleny Cimino. “Michael (born with spastic cerebral palsy) has improved a lot in two months. He has more control when he walks, and he’s
more comfortable with his balance. I’m very thankful that Sac State is giving us this opportunity. The team is so wonderful.”

Vanessa Acevedo’s son Eben, who has Down syndrome, went from not walking at all to taking 10 steps on his own. “I didn’t expect the results so fast. It’s great,” she says. “We’re so grateful. These students have done an amazing job.”

Mattern-Baxter’s research on treadmill training was funded by the American Physical Therapy Association. In her latest study, she had two groups of six children, all with cerebral palsy and pre-ambulatory.

One group had treadmills at home, and they walked twice a day, six days a week, for six weeks with the help of their parents. Children in the control group received basic physical therapy once a week but no treadmill training.

“At the end of six weeks, these children looked almost the same as they had before. But in the treadmill group, five kids had advanced to walking with a walker, and one had started walking independently,” says Mattern-Baxter. “A month later, the children in the control group had not changed much, but an additional child from the treadmill group started walking independently. The kids in the control group eventually caught up – four months later. And the kids from the treadmill group walked faster.

“We know that when young kids walk, they can explore their environment, and that helps them learn in other ways. Movement has been closely linked with cognitive function. If you can travel through your space, you’ll learn a lot more than if you’re stationary.”

For media assistance, contact Sacramento State’s Office of Public Affairs at (916) 278-6156. – Dixie Reid

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