Sacramento State has received a two-year, $150,000 grant from the Thrasher Research Fund to study how intensive, home-based treadmill training could help young children with cerebral palsy learn to walk independently.

Katrin Mattern-Baxter, a professor of physical therapy, is the principal investigator and will collaborate with researchers from the University of Puget Sound and Seattle Children’s Research Institute. Students working on their doctor of physical therapy (DPT) degree at Sac State will serve as paid research assistants for the study.

“We are excited to have the opportunity to find the optimal dosage for home-based treadmill training for these young children,” says Mattern-Baxter. “We anticipate that the results of this study will lead to a paradigm shift in service delivery and will have an impact on the provision of early-intervention services for children with cerebral palsy.”

This is the first time Sacramento State has received a medical research grant from the Thrasher Fund, which has awarded more than $88 million worldwide to better the lives of children.

Mattern-Baxter laid the groundwork for the Thrasher-funded research with an earlier study funded by the American Physical Therapy Association (APTA). She worked with two groups of pre-ambulatory children with cerebral palsy. Children in the control group received basic physical therapy once a week but no treadmill training. Children in the other group had mini treadmills at home and walked twice a day, six days a week, with the help of their parents.

At the end of six weeks, the control group had made little progress, but five of the six children in the treadmill group were walking with the aid of a walker, and one was walking independently. A month later, another child in the treadmill group was walking on his own. The control group eventually caught up to its treadmill-trained counterparts, but not until four months later. And the treadmill-trained kids were walking faster.

Mattern-Baxter incorporated those findings in STEPS (Supported Treadmill Exercise Program at Sacramento State-Easter Seals), which since 2013 has provided free treadmill training to 35 Sacramento-area tots with a neuro-motor impairment. The children come twice a week to the STEPS lab in Sac State’s Folsom Hall where, under the guidance of Mattern-Baxter and DPT students, they learn to walk on miniature treadmills. The goal is that they will someday be able to walk on their own or with an assistive device, such as a walker.

Damaged or underdeveloped areas of the brain have caused a delay in the children’s developmental skills, and intensive training helps with the brain’s development, says Mattern-Baxter. STEPS provides an opportunity for children to get additional practice beyond their regular physical therapy sessions.
STEPS accepts children 5 years old and younger who weigh less than 60 pounds, are able to sit unsupported for 30 seconds and can take at least five steps with some support. Children are referred to STEPS by their physical therapist. – Dixie Reid