

# Treadmill training helps Down syndrome babies walk months earlier

October 30 2007

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Starting Down syndrome infants on treadmill training for just minutes a day can help them walk up to four or five months earlier than with only traditional physical therapy, a new study from the University of Michigan says.

The study also suggests that infants who do high intensity treadmill training may walk even sooner.

Getting infants walking is critical because so many other skills arise from locomotion: social skills, motor skills, advancement of perception and spatial cognition, says professor Dale Ulrich of the University of Michigan Division of Kinesiology and principal investigator on the treadmill training project.

"The key is if we can get them to walk earlier and better then they can explore their environment earlier and when you start to explore, you learn about the world around you," Ulrich said. "Walking is a critical factor in development in every other domain."

Infants with typical development learn to walk independently at about 12 months of age. Babies with Down syndrome typically learn to take independent steps at 24-28 months.

In the study, 30 infants were randomly assigned lower intensity, generalized treadmill training, or high intensity, individualized treadmill training, implemented in the homes by their parents. The training was

used as a supplement to physical therapy.

Initially, all parents worked with their infants on the treadmill for eight minutes a day, five days a week. The parent sat on a bench that straddled the treadmill and held the infant as the child took steps on the treadmill, Ulrich said. All of the parents began with low intensity training, but after the infant could take 10, 20, and 30 steps per minute, intensity was gradually increased for half the infants, Ulrich said.

High intensity training included increasing the treadmill belt speed, using longer durations, and adding light weights to the ankles, with intensity tailored to each child.

The results suggest that infants in the higher-intensity, individualized training group increased their stepping more dramatically over the course of training, and attained most of the motor milestones at an earlier mean age. The results also provided support for the results of their earlier treadmill training study reported in 2001.

The treadmills are about \$1,200 each, and Ulrich said the hope is that more hospitals and Down syndrome parent organizations will rent the equipment to parents.

Down syndrome occurs in about 1 in 700 births, and is one of the few disabilities that causes significant delays in all developmental domains, the paper said.

Source: University of Michigan

Citation: Treadmill training helps Down syndrome babies walk months earlier (2007, October 30) retrieved 25 April 2024 from <https://medicalxpress.com/news/2007-10-treadmill-syndrome->

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