New report shows locomotor training restores walking function in child with spinal cord injury

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A new report shows that a non-ambulatory (unable to walk or stand) child with a cervical spinal cord injury was able to restore basic walking function after intensive locomotor training. The case study, published in Physical Therapy (May 2008), the scientific journal of the American Physical Therapy Association (APTA), evaluated the effects of locomotor training in a 4 ½ year-old-boy, who had no ability to walk following a gunshot wound sixteen months earlier.

"Every standard clinical evaluation conducted on this child indicated that he would not regain the ability to stand or walk," said Dr Andrea L Behrman, PT, PhD, Associate Professor in the Department of Physical Therapy, University of Florida and APTA spokesperson. Dr.Behrman, the lead author of the report, observes. "This case study is significant in that it shows that a severely injured spinal cord may be retrained." But, Dr Behrman cautions that, while this is a significant step in the right direction, not all children with severe spinal cord injuries will benefit from this type of treatment or have the same results.

Locomotor training refers to a process developed out of a partnership with scientists in which the patient is put in an environment to practice "walking" movements over and over again. Over the course of 76 sessions, the child was placed in an overhead body weight support system and suspended over a treadmill while three trainers helped simulate walking by moving his legs in a stepping pattern.

"With this system, the patient is partially supported, allowing the trainers to faciliate stepping and standing movements," Dr. Behrman explained. She cautioned that many rehabilitation facilities lack the equipment and staff skills to provide this kind of intense therapy, but that her case study clearly shows what can happen when available. "We are optimistic that this case study will give hope to individuals with spinal cord injuries as well as to their families," she said.

Dr Behrman noted that one month into locomotor training, voluntary stepping began and the child eventually progressed from having no ability to using his legs to moving with a rolling walker. The child is now fully ambulatory with a walker and attends kindergarten using a walker full-time. Although he has balance difficulties, requiring the use of a walker, Dr. Behrman said that, in time, a walker may not be necessary.

Source: American Physical Therapy Association