

"SELF INITIATED PRONE PROGRESSIVE CRAWLER" VCU #10-027

Applications

- Adaptive technology to assist in prone locomotion of infants
- Mobility aid for children with CP, Down's syndrome, or Spina-Bifida
- Can also be used for normally developing children
- Encourages motor development and environment exploration

Advantages

- Collects data from infant, assists in facilitating their intended movement
- Adapts to changes in intended movement
- Records progress in motor development over time.
- Safety has been addressed through hardware and software limits.

Inventors

Peter Pidcoe, DPT, Ph.D.

Contact

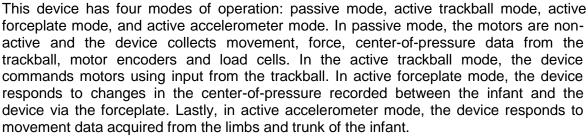
T. Allen Morris, Ph.D., MBA Associate Director amorris5@vcu.edu Direct 804-827-2211

Market Need

Self-generated mobility via locomotion is a key for the cognitive, social and motor development of young infants. Children with disabilities such as cerebral palsy, Down's syndrome, or Spina-Bifida do not usually explore their environment like typically developing children. Currently in physical therapy, therapists use a skate board type of device and manually propel the child based on their judgment of the child's intended movement. However, this lacks efficiency and is subject to human error.

Technology Summary

The Self Initiated Prone Progressive Crawler facilitates crawling in infants who are unable to perform the act of locomotion independently. It senses the infant's intent and provides gentle encouragement to assist the movement using a controller, motors, and input transducers.



Safety has been addressed on several levels including padded top surface, head support, and infrared proximity detectors to eliminate contact between the device and vertical surfaces. Additionally the motors and controllers are designed to limit propulsion speeds via both software and hardware limit switches. Propulsion distance is also limited following an activation event.







Technology Status

A third generation prototype has been developed and previous versions have been tested on typically developing children and those with cerebral palsy and Down's syndrome. Early data suggests that it does provide facilitated movement.

Patent pending: U.S and foreign rights are available.

This technology is available for licensing to industry for further development and commercialization.