

## Universal Exercise Unit

The Paulson pediatric therapist's are excited to introduce the Universal Exercise Unit (UEU) to our patients. The UEU is a large, metal, three dimensional cage that houses a system of pulleys and bungees that can be used to treat a variety of patients.

When properly used, the pulley system allows therapists to stretch and/or strengthen a desired muscle group in isolation from the rest of the body. This allows that particular muscle group to work without compensations in order to enhance a specific movement necessary to achieve a functional skill. The pulleys may also act as a suspension system to allow the patient to perform an isolated, independent movement repetitively without the adverse effects of gravitational forces. The pulley system can be used to strengthen muscles, improve function and endurance, increase range of motion and flexibility, decrease contractures, and prevent muscle atrophy.

The bungee system (or "spider") is a combination of 8 bungee cords that are attached to a waist belt. The bungees can be manipulated by the therapists to produce a dynamic system of support or resistance that is needed to practice a particular component of a functional skill. The spider can be used to improve functional skills, enhance balance and coordination, increase strength, endurance and stability, as well as to improve sensory-motor integration. The primary goal of the spider is to promote independence. As a child improves, the amount of bands and the degree of resistance can be adjusted to account for greater independence.

The UEU is appropriate for patients that are experiencing delayed development, decreased balance, coordination, stability, and strength, as well as disturbed sensory integration, muscle atrophy, or vestibular deficits.

Another exciting benefit of the UEU is the opportunity for our therapists to offer intensive therapy sessions for our patients. Koscielnny and Koscielnny have shown that intensive strengthening programs (approximately 3 hours a day, 5 days a week, for 3 weeks) have the potential to significantly improve coordination, strength, range of motion, balance, and movement control in patients with cerebral palsy.<sup>1</sup> Conducting intensive bouts of strengthening in these children has been shown to positively effect their neurological systems. It is known that neural changes occur within the first weeks following the initiation of resistance training; thus it is important to complete a significant amount of strengthening (intensive therapy sessions) during this time, the "neurological learning phase". Research is currently reporting the need to increase treatment frequency in order to significantly improve the level of motor performance in children with cerebral palsy.

Paulson pediatric therapy clinic is currently offering intensive physical therapy sessions. These sessions are being conducted 2 hours per day, 3-5 days per week for 4 consecutive weeks.

Koscielnny, I and Koscielnny, R. *Effectiveness of Therasuit Method and the Therasuit. Results of the Intensive Exercise Program in the Pediatric Cerebral Palsy Population.*