

SPOTLIGHT

ON PEDIATRIC REHABILITATION

THE INSTITUTE FOR REHABILITATION AND RESEARCH

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TIRR Memorial Hermann Outpatient Rehabilitation Adds a Pediatric Center

Steady growth in the pediatric program at TIRR Memorial Hermann Outpatient Rehabilitation led to an expansion of services last spring in a newly constructed space adjacent to the facility. The expansion adds 2,900 square feet specifically designed to meet the needs of our pediatric patients and their families.



New Pediatric Center

TIRR Memorial Hermann Pediatric Outpatient Rehabilitation features a dedicated child- and family-friendly space as well as room to grow with the needs of our patients over time. Specialty services include pediatric neuropsychological testing and Lokomat® therapy for children, which benefit patients with neurological movement disorders.

The pediatric outpatient program is designed to meet the needs of children whose conditions call for the intensity of a conventional inpatient rehabilitation program but whose

family has the ability and desire to maintain their child safely at home and are able to transport the patient to therapy on a daily basis. This allows patients to benefit from an intensive rehabilitation program in a clinical setting during the day, combined with the comfort and emotional support of the family at home.

Physical therapists, speech-language pathologists, occupational therapists, social workers and neuropsychologists at the pediatric outpatient center provide a full range of rehabilitation services for patients with brain injury, spinal cord injury, amputations, developmental delay, torticollis, multiple trauma, genetic disorders, cancer, neurological insult, epilepsy, cerebral palsy, spina bifida, muscular dystrophy and multiple sclerosis, as well as for post-transplant and post-orthopedic injury patients.

For more information or to refer a patient, call 713.524.9702 or fax a referral to 713.383.5713. ♦

MESSAGE FROM THE DIRECTOR

We're pleased to present the first issue of *Spotlight on Pediatric Rehabilitation*, a annual publication of TIRR Memorial Hermann Pediatric Outpatient Rehabilitation. Each issue will



*Sandra Lloyd,
Director*

highlight our services, client success stories, innovative rehabilitative equipment and breakthroughs in therapy.

We have much to celebrate in 2012. Last year was an exciting time for us: we grew our commitment to pediatric outpatient rehabilitation by opening a freestanding pediatric center adjacent to our Adult Outpatient Rehabilitation

facility. Some adolescents have shown a preference for undergoing their therapy sessions with adults, and having separate facilities gives our pediatric clients, families and therapists a choice of where they want to be treated.

In this issue, you'll find a quick overview of the innovative equipment our clients use, and you'll learn how we help families save money through pre-purchase equipment trials. A report on vestibular disorders suggests that vestibular deficits may be overlooked in children and describes treatments that can bring them up to the correct developmental level. We're pleased to extend TIRR Memorial Hermann's well-known Challenge Program to adolescents and children, and we're very grateful to Raquelle

Lewis for sharing her 5-year-old son Andrew's story.

We're proud of the achievements of our team here at TIRR Memorial Hermann Pediatric Outpatient Rehabilitation. Each staff member has a strong commitment to delivering the best possible rehabilitative care to our clients, and we've laid a strong foundation for many years to come. If you know of a service we can add for your patients, please let us know. We would love to hear from you.

*Sandra Lloyd, M.N., R.N.
Director, Outpatient Services
Adult and Pediatric Outpatient
Rehabilitation
The Challenge Program*

FEATURES

Andrew Lewis: A Bright Light Shines

Born at 23 weeks, Andrew Lewis spent his first seven and a half months of life in neonatal intensive care. During his first year of life, he underwent more than eight surgeries for various problems, including bilateral intraventricular hemorrhages that required a neurosurgical intervention. He was on a ventilator or recovering from surgery at a time when most children are reaching normal developmental milestones.

"When Andrew was stable enough to be discharged, he was still on oxygen and having problems attaining a normal level of food consumption," says his mother, Raquelle Lewis. "In



*Andrew Lewis with therapist,
Teresa Cramer*

terms of development, he was severely set back."

In addition to health issues associated with prematurity, Andrew has hydrocephalus and spastic diplegic cerebral palsy. When his condition had stabilized, he started home therapy through the Department of Assistive and Rehabilitative Services Early Childhood Intervention (ECI) program. ECI provides developmental services from birth to age 3 for children with disabilities and developmental delays.

In 2010, at age 2½, Andrew began intensive therapy at TIRR Pediatric Outpatient Rehabilitation. "We saw a lot of potential in Andrew when we

Andrew started on a four-day-a-week schedule of physical therapy, occupational therapy and speech therapy focused on neurodevelopmental treatment, sensory integration and practice therapy with repetition.

evaluated him,” says Teresa Cramer, P.T., D.P.T., P.C.S. “In addition to his medical problems, he had sensory defensiveness, could not hold his head up in a seated position and was unable to communicate well, but we saw a bright light in him.”

He started on a four-day-a-week schedule of physical therapy, occupational therapy and speech therapy focused on neurodevelopmental treatment, sensory integration and practice therapy with repetition. “He is a fighter,” his mother says. “He’s very strong willed and capable of many things, but getting Andrew to work with you isn’t always easy. His life has been one of interventions and restrictions, so he actively controls the things he can control, like speech. He has a large vocabulary but getting him to use it has been another matter. The therapists at TIRR Memorial Hermann have been very good at recognizing his capabilities and putting him in situations where he can bloom and be the best he can be.”

Now 5 years old, Andrew is independent in his wheelchair, stands and walks with a walker, communicates his wants and needs and helps with eating, dressing and undressing. He comes to the pediatric outpatient center three days a week and is still making steady progress. His next goal: learning to stand and walk unassisted.

“It’s been wonderful to watch Andrew progress,” Cramer says. “He comes to therapy with a really good attitude and outlook. He works hard and doesn’t complain. He sees it as fun.” ❖

Equipment Trials for Kids Ensure the Right Decision

TIRR Memorial Hermann wheelchair seating and mobility specialist Patricia Tully, O.T.R., A.T.P., makes regular visits to the hospital’s pediatric outpatient center, where she and physical therapists assess children through the center’s Pediatric Wheelchair Clinic.



Equipment trials

The clinic allows kids and their families to try out a variety of manual and power wheelchairs, as well as seating and positioning accessories to cope with the challenges they’re facing at

home, in school and in the community.

“Allowing clients to trial wheelchairs gives us the opportunity to identify the most appropriate piece of equipment before they actually order it,” says Kelly Phelan, P.T., P.C.S. “We can make sure we’re writing the correct prescription and setting up kids and their families to succeed. Making the right choice is important because the equipment is expensive, and most insurance companies will only consider paying for replacements every five years.”

Therapists work with one patient at a time at the clinic, which is planned around scheduled therapy sessions. Walkers and assistive devices, such as gait trainers, are also available for trial.

“Physicians may refer their patients solely for equipment trials,” Phelan says. “We also work with private therapists and those affiliated with other organizations to help them meet their clients’ needs.”

For more information, please call 713.524.9702 or fax a referral to 713.383.5713. ❖

A Clear Picture Through Pediatric Neuropsychological Evaluations

When children experience difficulties in learning, maintaining attention, emotional control or socialization, neuropsychological evaluations can help physicians get a clear picture of the factors interfering with effective functioning.

“Pediatric neuropsychological evaluations assist with diagnosis, educational placement, disability

determination, treatment recommendations and determination of the effects of surgery or medication,” says Cullen Gibbs, Ph.D., clinical neuropsychologist with TIRR Memorial Hermann Pediatric Outpatient Rehabilitation. “Difficulties in school or at home can arise from a variety of causes. Evaluations help us understand children’s

A Clear Picture continues on page 6

Advanced Equipment Offers Children New Treatment Options

Over the past year, TIRR Memorial Hermann Outpatient Rehabilitation has added new equipment to its growing list of innovative rehabilitation technology for adults and children.

“New technology gives us additional options for therapy as we develop a plan of care for each of our pediatric clients,” says physical therapist Kelly Phelan, P.T., P.C.S. “We’ve found that having a variety of tools available as an adjunct to traditional therapy can help speed recovery from illness or injury.”

- The **FES RT300 leg system** allows children to stimulate up to 10 muscle groups while cycling securely from a wheelchair to stimulate the legs and trunk.
- The **Bioness® NESS L300 foot drop system** uses mild electrical stimulation to lift the child’s foot for safer and easier walking. The device, which can be modified for older children, fits just below the knee and aids in walking on flat ground, up and down stairs and on uneven surfaces.
- The **NESS H200 hand rehabilitation system** uses the same type of mild electrical stimulation to improve arm function. A lightweight, custom-fit orthosis attaches to the forearm and wrist, and connects to the control unit. Internal electrodes help the hand move.
- The **VitalStim Experia™** helps dysphagia patients by providing visual and auditory biofeedback during swallowing for objective measurement of effortful swallows. Electrical stimulation to the target muscle group is activated by the patient’s effort, creating a reward-based biofeedback loop.
- The **Iowa Oral Performance Instrument (IOPI)** objectively measures tongue strength for tongue elevation, laterally directed movements and



Patient on the Lokomat

protrusion; lip compression strength; and fatigability of the tongue and lip. The technology helps document deficits that justify treatment, diagnostically differentiates between muscle weakness and motor control problems and motivates patients by showing them their progress from muscle exercise therapy.

The **Armeo®** accelerates rehab by combining an adjustable arm support with a highly sensitive hand grip and motivating simulations of activities of daily living. The device provides gravity compensation for the impaired arm and allows patients to move successfully and improve residual neuromuscular control.

In 2010, TIRR Memorial Hermann extended **Lokomat® walking therapy** to its pediatric program, thanks to 105 donors who contributed \$88,000 to the Memorial Hermann Foundation for the purchase of the pediatric robotics for the Lokomat. Designed to benefit patients with neurological movement disorders, the system consists of a robotic gait orthosis and the Levi body-weight support system used in combination with a treadmill. The patient’s legs are guided on the treadmill according to a preprogrammed physiological gait pattern, which can be adjusted to accommodate individual needs and rehabilitation goals. ❖

Handwriting Without Tears

Beginning this summer, TIRR Memorial Hermann Pediatric Outpatient Rehabilitation will extend its intensive Handwriting Without Tears® (HWT) curriculum to small groups of children undergoing occupational therapy. Therapists at the pediatric outpatient center have used the method in individual sessions for the past three years.

Utilized successfully with millions of students around the world, the Handwriting Without Tears approach helps make legible and fluent handwriting an easy and automatic skill. “The curriculum is based on kinesthetic awareness and multisensory play-based instruction, which makes it particularly useful in occupational therapy with kids,” says Carly Thom, O.T.R., one of four occupational therapists at the center who are trained in the use of HWT. “It teaches baseline strokes first, then builds on learned skills. We use a variety of materials, including chalkboards, chalk, wood pieces and Play-Doh, to teach correct formation, spacing, sequencing and other writing skills. The kids get to

manipulate real objects, providing kinesthetic feedback as they learn the skills they need to write.”

The curriculum was developed for use in pre-kindergarten through grade 5 and is suitable for all levels of

development and ability. For more information about Handwriting Without Tears or the private-pay therapy groups to be held this summer, please call 713.524.9702 or fax a referral to 713.383.5713. ❖



Patient therapy with Handwriting Without Tears

Challenge Program Now Open to Adolescents and Children

The TIRR Memorial Hermann Challenge Program’s success has led to a tripling of its census in the last three years to the current average of 60 clients. Last fall the program opened to adolescents, and this spring it was expanded to include all school-age children, beginning with kindergarten, to provide therapeutic services that prepare students to succeed when they return to school.

“When children are discharged

from inpatient care, they may not be ready to return to school,” says program neuropsychologist Cullen Gibbs, Ph.D. “We adapt our approach to the needs of each client and provide physical, occupational and cognitive therapy to help increase their independence and facilitate a return to school. We believe that if our clients can return to the community and be involved, they will improve. Some children may return to school

toward the end of their program here, and we can monitor progress by staying in touch with their teachers.

The Challenge Program provides specialized services focused on community re-entry skills critical for the transition to independent living, school or work following brain injury. For more information or to refer a patient, please call 713.669.1100 or fax a referral to 713.668.5210. ❖

Innovative Tools Aid Recovery from Dysphagia

A 13-year-old girl with a severe movement disorder is regaining the ability to drink liquids safely. A 10-year-old boy, also suffering from a movement disorder, is regaining oral motor control for speaking and eating. A 12-year-old boy with childhood amyotrophic lateral sclerosis (ALS)

come to us with a gastric feeding tube in place,” says Cindy Bukauskas, C.C.C.-S.L.P., clinical coordinator of Speech-Language Pathology Services at the pediatric outpatient center. “Our goal is to go through the steps it takes to begin pleasure feeding. Being able to eat even a small amount

during swallowing for objective measurement of effortful swallows. Electrical stimulation to the target muscle group is activated by the client’s effort, creating a reward-based biofeedback loop.

The Iowa Oral Performance Instrument (IOPI) measures tongue strength for elevation; lip compression strength; and fatigability of the tongue and lip. Clients are motivated by their progress.

Beckman Oral Motor Interventions focus on developing oral motor skills to enhance the progression from breast milk or formula, to pureed foods, to table foods. The interventions involve stretches in the muscles of the mouth, lip, tongue and jaw.

Myofascial release manual techniques for dysphagia involve soft-tissue manipulation to loosen muscles tight from lack of use. Intensive stretching around the fascia improves muscle movement.

“Most of the children we see need physical therapy and occupational therapy in addition to swallowing therapy,” Bukauskas says. “Some of the younger kids we treat are not able to tolerate a full three hours of therapy. So we combine therapies to maximize our clients’ time here and keep them interested.”

For more information, please call 713.524.9702 or fax a referral to 713.383.5713. ❖



Patient using VitalStem Experia

is working to improve his oral motor control for safe swallows. All three are using advanced equipment to improve their oral and pharyngeal function at TIRR Memorial Hermann Pediatric Outpatient Rehabilitation.

“Many of our dysphagia clients

of food is a huge boost to our clients’ self-esteem.”

Evaluation and assessment determines which tools will provide the best outcome. The **VitalStem Experia™** helps dysphagia patients by providing visual and auditory biofeedback

A Clear Picture continued from page 3

strengths and weaknesses, and utilize the strengths to compensate for areas where they’re struggling.”

Neuropsychological evaluations can also be used to establish a baseline, allowing the physician to measure a child’s development and outcomes over time. Based on multiple sources

of information, evaluations start with a thorough neurological history and interviews with parents and teachers, and include measurement of areas such as attention, memory, auditory and visual perception, problem solving, behavioral functioning and social skills. The information is used to create targeted treatment interventions for

families, physicians, schools and other professionals to help maximize each child’s potential.

A physician referral is necessary to begin the evaluation process. For more information, please call 713.669.1100. ❖

Balance and Vestibular Disorders Often Overlooked in Children

Vestibular disorders have long been recognized and treated in adults, who present with dizziness, vertigo, imbalance, gaze stability deficits or a feeling of disorientation to position in space. Now, new evidence suggests that vestibular deficits in children have been overlooked and underreported.

“We’re just beginning to discover that long hospitalizations of children, especially in the early years, can affect the development of the vestibular system,” says physical therapist Jean Berliner, P.T., D.P.T., C.B.I.S. “Children aren’t typically screened for

vestibular disorders, which can keep them from attaining developmental milestones by affecting reading acuity, motor development and balance. Vestibular exercises can help get them back on track and bring them up to the correct developmental level.”

While vestibular disorders can affect children with virtually any diagnosis, most children seen at TIRR Memorial Hermann Pediatric Outpatient Rehabilitation have deficits caused by traumatic brain injury, cerebral palsy, brain tumors or hearing loss. “Benign paroxysmal

vertigo of childhood (BPVC) is a fairly common condition of unknown etiology that may have a genetic or familial link,” Berliner says. “It often goes undiagnosed and treatment can significantly improve function.”

The SMART Equitest® Balance Manager allows clinicians to assess and treat specific sensory systems.

Client history and symptoms guide the initial evaluation, and therapists consider the duration of symptoms, the duration of vertigo, how frequently the child experiences symptoms and the positions in which the symptoms occur, she says. “We use infrared goggles, pediatric balance and developmental assessments and other vestibular clinical special tests, working closely with neurologists and otolaryngologists to develop the best treatment plan for the child.”

The center also offers balance assessments and a variety of treatments for simple balance problems, including the SMART Equitest® Balance Manager, which allows clinicians to assess and treat specific sensory systems, as well as promoting motor planning strategies and movement patterns such as ankle, hip or stepping strategy. This comprehensive approach is integrated with the child’s plan of care, which may also include gaze stabilization, visual dependence exercises, otolithic recalibration exercises, somatosensory dependence exercises and ocular tracking exercises, as well as traditional gait and functional training to build confidence in daily activities.

For more information, please call 713.524.9702 or fax a referral to 713.383.5713. ♦




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About TIRR Memorial Hermann

TIRR Memorial Hermann is a 119-bed nonprofit rehabilitation hospital located in the Texas Medical Center in Houston. Founded in 1959, TIRR Memorial Hermann has been named one of “America’s Best Hospitals” by *U.S. News & World Report* for 22 consecutive years. TIRR Memorial Hermann provides rehabilitation services for individuals with spinal

cord injuries, brain injuries, strokes, amputations and neuromuscular disorders.

TIRR Memorial Hermann Adult and Pediatric Rehabilitation at the Kirby Glen Center offers innovative, results-driven outpatient therapy in a 23,000-square-foot, high-tech facility located at 2455 South Braeswood in Houston. The Pediatric Center is located at 2453 South Braeswood.

TIRR Memorial Hermann is one

of 12 hospitals in the not-for-profit Memorial Hermann system. An integrated healthcare system, Memorial Hermann is known for world-class clinical expertise, patient-centered care, leading-edge technology and innovation. The system, with its exceptional medical staff and more than 20,000 employees, serves Southeast Texas and the Greater Houston community.

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We have opportunities for outstanding rehabilitation professionals. If you are interested in joining our team at *U.S. News & World Report's* No. 4 rehabilitation hospital, contact Monica Kinnard, recruitment consultant, at 713.797.7281 or Monica.Kinnard@memorialhermann.org. All available opportunities can be viewed at memorialhermann.org.

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