



*Rehabilitation Inc.*

Neurology & Traumatic Injury  
Physiotherapy  
Occupational Therapy  
Speech Therapy

## **NEWSLETTER Spring 2012**

### **Inter-Action Rehabilitation Inc.**

**Welcome to our spring newsletter. As you can see we have been busy introducing new techniques and programs, welcoming some new therapists, and implementing new evidence-based programs into our practice. We'd be happy to speak to you about any questions you may have after reading the newsletter.**

**Anna Greenblatt and Nancy Katsouras**

### ***THIS ISSUE FEATURES:***

#### **OUR NEW EVIDENCE –BASED PROGRAMS**

**Constraint Induced Movement Therapy**

**Bioness H200 Upper Extremity Electrical Stimulation Orthosis**

**Cogmed Working Memory Training Program**

**NeuroTaping**

#### **OUR NEW EVIDENCE-BASED PROGRAMS**

**Constraint Induced Movement Therapy (CIMT):** In April 2011 three of our therapists spent a week at the University of Alabama in Birmingham to be trained by Dr Ed. Taub's group. We now have this two week program available at our clinics.

Constraint Induced Movement Therapy (CIMT) is a behavioral and neurorehabilitation program developed by Edward Taub, Ph.D. and colleagues. Although CI therapy consists of a family of therapies, they share the same concepts used in teaching the brain to "rewire" itself. Dr. Taub's research has proven that appropriate individuals can learn how to improve the motor ability of their more affected extremity through behavioral and physical interventions to promote use of the affected extremity.

Head Office: 85 Scarsdale Road, Suite 302, Toronto, Ontario M3B 2R2  
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CIMT is an intensive 2-week evidence based rehabilitation program for people with upper extremity neurological impairments from stroke, traumatic brain injury or brain injury following a tumor resection or radiation and multiple sclerosis. Each therapy session lasts 3.5 hours with a CIMT trained therapist.

Common neurological impairments treated using CIMT include: weakness of the arm and hand, decreased use of affected arm and hand, decreased coordination and fine motor skills, difficulty performing daily tasks such as dressing, grooming, and eating to name a few.

The main components of CIMT are:

- Repetitive task training
- Behavioral strategies
- Constraining limb use

CIMT expected outcomes for the arm and hand are:



- ☐ More functional use
- ☐ Increased muscle strength
- ☐ Better coordination and fine motor skills
- ☐ Improved abilities, with less effort, for daily activities like dressing, bathing or eating

CIMT is most effective when provided at least 6 months after the injury

CIMT at Inter-Action Rehabilitation Inc. follows the protocols as developed by Dr. Taub at the University of Alabama in Birmingham (UAB) and as taught in UAB's CI Therapy Training Course.

Eligibility is determined through a screening process. Our staff will review the information provided in the Patient Information Form and video\* (\*if requested due to geographic distance). If the client potentially qualifies for the upper extremity treatment program, a therapist will complete a more thorough telephone screening and answer any questions. Upon completion of the telephone screening, we will discuss whether the client likely meets the qualifications for treatment. If so, the next step involves scheduling a therapy evaluation. Once the therapy evaluations have been completed, the clinic staff will determine if the client qualifies for treatment. If so, available treatment time slots will be discussed and booked.



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If after review of the information, it is determined it is found that the client is not appropriate for CIMT we will let him/her know and may be able to provide suggestions for future consideration.

**Bioness Ness H200: Electrical-stimulation (e-stim) for neurorehabilitation of the upper extremity:**

Bioness NESS H200 became available in Canada in late spring 2011, and Inter-Action Rehabilitation Inc. is one of the first rehabilitation groups in Ontario to use the Ness H200. We integrate the use of e-stim into our therapy programming as appropriate.

The NESS H200 is a non-invasive device, worn on the forearm and hand. It consists of a palm-size microprocessor that delivers a mild electrical charge and a soft, polymer prosthesis which fits over a patient's hand and forearm. Electrodes embedded in the prosthesis receive the charge and stimulate muscles in the hand and wrist to perform a sequence of movements. In addition to improving functional use of the hand, the device can reduce or prevent complications associated with central nervous system disorders, including spasticity, disuse muscle atrophy, pain and edema. To see how the H200 works, please visit [www.bionessinc.com](http://www.bionessinc.com)

Stroke, cerebral aneurysm, brain tumour, traumatic brain injury and spinal cord injury and other CNS disorders are appropriate for the Ness 200.

Functional Goals that can be addressed:

- Improve Hand Function
- Increase Range of Motion
- Joint contracture prevention/treatment
- Neuro-muscular re-education
- Pain Management
- Post Botox Injections movement facilitation

Certain Contraindications and Precautions apply.

The Ness H200 is also available for short term rental and or purchase from Inter-Action Rehabilitation Inc. Rental or purchase are done in conjunction with a series of treatments.



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Working Memory Training

### **Cogmed Working Memory Training:**

Cogmed Working Memory Training is a computer-based approach for attention problems caused by poor working memory. Cogmed Working Memory Training was developed by a world-renowned neuroscientist. Dr. Torkel Klingberg, a neuroscientist at the Karolinska Institute in Sweden. Inter-Action Rehabilitation Inc. is a qualified Cogmed provider.

Working memory is our ability to hold information in our mind and to use that information in our thinking to perform tasks. It is essential for attention and focus and plays a critical role in children's academic achievement.

Cogmed training method consists of 25 computerized training sessions, each 30-45 minutes long.

Each session consists of a selection of various tasks that target the different aspects of working memory. The training can be done on a computer at home, in school, or at work, or in our clinic. The difficulty level is adjusted according to a highly sensitive and specific algorithm. The training program is five weeks long with five sessions every week. It is a rigorous program designed to improve working memory through intensive and systematic training. There is always a Cogmed Qualified Coach involved who provides structure, motivation and feedback on progress.

The complete program includes:

*Initial Interview*

*Start-up session*

*Five weeks of training with weekly coach calls*

*Access to the Cogmed Training Web*

*Wrap-up session*

*Six months follow-up interview*

The program is characterized by:

*Very focused design – working memory improvement*

The program challenges the user's working memory capacity. The computerized, cognitive exercises are designed by neuroscientists to target this key cognitive function that has been proven to be fundamental to executive function and attention. The details of the exercise design allow the program to be very focused and yet provide slight variations.

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*Finely tuned difficulty level – you are always challenged*

The difficulty level of the training is adjusted in real time by the software based on the user's performance. The highly fine-tuned calibration means that every Cogmed user will always be training at the very edge of his or her cognitive capacity.

*Highly personal support ensures training will be completed*

*The improved working memory “generalizes” to behavior*

Working memory capacity determines your cognitive performance. Cogmed training improves your working memory. Your strengthened working memory allows you to perform better. The training creates the cognitive foundation you need to prepare for success.

*Cogmed is a fundamental cognitive training, not skills learning:*

Cogmed does not teach you new skills. It helps you create a platform for learning skills. The concept of neuroplasticity, the idea that the brain can reorganize itself and change, is what allows Cogmed to effectively change the way the brain functions to perform at its maximum capacity. There are many training programs for various skills such as reading, math, or time management. Cogmed acts on a different, more fundamental level. Once working memory has improved, acquiring new skills is suddenly much more doable.

*Focused solution, substantial benefits:* Cogmed is a solution that improves working memory allowing one to focus and resist distractions better. This will help academically, socially, and professionally.

### **Neuro-Proprioceptive Taping:**

Neuro-proprioceptive taping uses a flexible, latex free kinesio tape to give support and stability to your joints and muscles without affecting circulation and range of motion. It can provide pain relief, improve proprioception, and optimize muscular activity. Taping is used by all levels of athletes to enhance performance as well as aide in rehabilitation of various injuries.

Taping is thought to have more of a neuro-physiological effect versus an actual mechanical effect on tissues. Tape can benefit patients due to increased proprioception and increased postural stability. Taping can also affect blood circulation to the area by providing continuous stimulation to the skin and subcutaneous tissues.

Tape can also be used to facilitate a muscle, inhibit a muscle or provide structural support to the joint. Depending on the goal of the therapist, tape will be applied with a muscle in a stretched or shortened position, and different tension is applied on the tape during application.

The stretchy qualities of the tape will allow full range of motion and stimulate proprioceptive rehabilitation of weak muscles. It is commonly known that physical injury results in the soreness of the area affected. The impulsive response of an individual subject to this type of injury is to

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rub the affected area. The tactile pressure and stimulation of the skin receptors make them feel better. The technique of Neuro-Proprioceptive taping provides a similar, constant tissue-stimulation to the applied area which in turn delivers a beneficial analgesic effect through neuro-physiological stimulation as opposed to mechanical stimuli. We are now using this tape, with adapted techniques, in neurorehabilitation.

### ***JOINING OUR TEAM!***

#### **Welcome to *Physiotherapist***

**Julius Boquerin:** We are especially pleased to welcome Julius to our team of physiotherapists. Julius is a physiotherapist registered with the College of Physiotherapists of Ontario. He received his training in the Philippines and worked there for several years. He graduated from Cebu Doctors' University in the Philippines with a Bachelor of Science degree in Physical Therapy (BScPT). He has experience working in acute care, and in the community with a variety of musculoskeletal and neurological conditions and has training in balance, motor control, myofascial release and neurological rehabilitation. He has been working with us over the past few years as a therapy support worker while doing the work necessary to gain his equivalency.

#### ***Speech Language Pathologist***

**Reshma Kothavale** is a Speech-Language Pathologist registered with the College of Audiologists and Speech-Language Pathologists of Ontario (CASLPO) and with the Ontario Association of Speech-Language Pathologists and Audiologists (OSLA). She graduated from York University, Ontario, with a Bachelor of Science (Hons.) Degree in Psychology and from the State University of New York at Buffalo, with a Master of Arts Degree in Speech-Language Pathology. Ms. Kothavale has experience working in outpatient rehabilitation facilities and community settings with children with speech and language disorders and with adults with aphasia, dysarthria, dyspraxia, and cognitive-communication deficits.

#### ***Occupational Therapist***

**Angele Bibeau** is a qualified Occupational Therapist, registered with the College of Occupational Therapist of Ontario and a member of the Ontario Society of Occupational Therapists. She graduated with an Honours Degree in Kinesiology from the University of Western Ontario and completed a Masters of Science in Occupational Therapy from the University of Toronto. Ms. Bibeau has extensive experience in acute care, community rehabilitation, and rehabilitation of patients injured in motor vehicle accidents. Her experience includes: Home Safety Assessments, Attendant Care Assessments, Life Skills Training, Work Site Assessments, Work Hardening Programs and Patient Education Programs. She has experience providing cognitive assessments and treatment to individuals with neurological impairments resulting from traumatic brain injuries, stroke, multiple sclerosis, Parkinson's disease as well as assessment and treatment of various musculo-skeletal impairments. Angele is currently expanding her practice into paediatrics and sensory integration.

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## WORKSHOPS

For ongoing information on workshops taught by Inter-Action Rehabilitation Inc., please check our website at: [www.interactionrehab.com](http://www.interactionrehab.com)

## POST GRADUATE TRAINING

*Workshops &  
Conferences Attended  
by Inter-Action  
Rehabilitation Inc.  
therapists Including  
In-services  
2011/2012*

- ❖ MTBI: Challenges & Controversies in research
- ❖ Neuro-Proprioceptive taping
- ❖ Changes to the Auto Insurance Scheme
- ❖ Constraint Induced Movement Therapy
- ❖ Bioness H200 hand rehabilitation system certification training
- ❖ Catastrophic Brain Impairment: Children, Young Adults and their Families (Rehabilitation Strategies)
- ❖ OSOT Auto Insurance Sector :OTs Coming Together Through Change
- ❖ Benefits of an e-learning resource: stroke best practices
- ❖ Life Care Planning Canadian Summit
- ❖ Medical & Psychological Aspects of Life Care Planning with Multiple Disabilities
- ❖ Scope of Practice Session, College of Physiotherapist of Ont.
- ❖ Catastrophic Brain Impairment: Children, Young Adults and their Families (Rehabilitation Strategies)
- ❖ From Hospital to Home The Continuum of Care After SCI
- ❖ Sensory Processing in School, Home and Community: How to Make the Best of Every Moment
- ❖ GAID-G3ict Ministerial Roundtable, United Nations: "The Role of ICTs in Empowering Women with Disabilities."
- ❖ Changes to the Auto Insurance Scheme
- ❖ OBIA conference
- ❖ MTBI: Current Directions in Diagnosis and Treatment: 18th Annual Conference Neurobehavioural Rehabilitation in ABI
- ❖ Handwriting Without Tears Kindergarten-5th
- ❖ Get Set for School Literacy & Math/Readiness & Writing
- ❖ How to Grow a Spine
- ❖ Endocranial Spasm 2 - Emotional Trauma
- ❖ 2nd Stroke Conference Ottawa
- ❖ Post-stroke locomotor training
- ❖ Rehabilitation and MS
- ❖ Pilates Matwork Instructor certification
- ❖ Pilates Vertical Intensive
- ❖ Physical Activity: The Best Medicine?
- ❖ Lymphedema
- ❖ Training BIG- treatment approach for Parkinson's Disease
- ❖ Binocular Vision Disorder
- ❖ Driver Rehabilitation
- ❖ MHSc(bioethics)
- ❖ Sensory Processing "Manual Basics"
- ❖ Cogmed Working Memory Training

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