Wojtek's Incredible Story

Teresa-Ewa Busz, MA, and Beata Oginska-Dutkiewicz, MA, MNRI® Instructors and Core Specialists, Zielona Gora, Poland

Summary: This article presents the results of the Masgutova Neuro-sensorimotor Reflex Integration (MNRI®) used with a patient who suffered from central nervous system injury during a car accident. The patient was a male who suffered from brain damage resulting from two hemorrhagic strokes which caused a car accident. The MNRI® therapy helped to return sensorimotor function as well as significantly improve both physical and emotional abilities. Ongoing work with this method continues to impact his development of perception and expression and began to rebuild communication, speech development, and cognition.


Teresa-Ewa Busz


Beata Oginska-Dutkiewicz

Description of the Accident

On November 26, 2009 at the age of 30, Wojtek was involved in a car accident. Doctors did not expect him to survive. He suffered injury to the brain stem, had several broken ribs, and other internal injuries. He was unconscious, suffering from both circulatory and respiratory failure. Doctors had to induce a coma. The cause of the accident was likely due to a stroke that caused him to lose consciousness and subsequently swerve into an oncoming truck. For the first couple weeks in the hospital, the patient was completely unresponsive.

On December 2, 2009 the patient underwent a second operation to remove a hematoma. Afterwards, he showed steady progress. After returning home, the patient underwent daily rehabilitation yielding positive results. On his birthday three months after the accident, Wojtek began to walk. Two weeks after that, on his daughter's first birthday, he began to speak.

Unfortunately, on March 2010 shortly after beginning to speak, he suffered another hemorrhagic stroke that extended to the lateral ventricle. He was once again fighting for his life. Blood was not properly flowing to his brain. An MRI was performed. However, it was too late. The stroke he suffered returned him to the same cognitive state he was in after the accident. The resulting lack of oxygen took from him his returning capabilities. He could no longer walk or speak. Constant and intensive therapy had to begun anew.

An MRI of Wojtek's brain stem was performed at Doctor Antoni Jurasz University Hospital in Bydgoszcz, Poland on August 8, 2010. Numerous scans were taken. Numerous sites of damage were observed, among them large blood clots and possible seepage of cerebrospinal fluid.

From the time of the accident in 2009 through May, 2011 the following therapies were used for Wojtek: PNF,

Bobath, neurological rehabilitation, reflexology, neuroreflexology, speech therapy, psychological and neuropsychological therapies, aqua therapy, Adeli suit, and biofeedback.

The MNRI® program was introduced into the therapeutic regimen in May 2011 during a Family Conference organized by the Dr. S. Masgutova Institute in Poland. The following were then discontinued: Bobath, Adeli suit, neuroreflexology, psychological therapy, and biofeedback.

Description of MNRI® as Applied

Wojtek and I began working together during the intensive rehabilitation conference in Mielno, Poland organized by the SMEI Svetlana Masgutova International Institute. Each day of the conference consisted of 6 one-hour sessions of MNRI®. This included: the MNRI® reflex integration program, Oral-Facial and Auditory-Visual therapy, Proprioceptive and Cognitive Reflex integration, Neurostructural reflex integration, Tactile, Archetype Movement as well as Art Therapy.

Before the conference Wojtek had a busy month. Shortly before coming to Dr. Masgutova's conference he participated in an intensive program for patients with aphasia. His family was very concerned as to whether he would be able to handle participating and worried about his prognosis after Dr. S. Masgutova's diagnosis. Up to this point, Wojtek's wife Kamila had not seen great strides in his rehabilitation. She was very worried that, with his level of brain injury, there just wouldn't be much improvement in his psychomotor and cognitive development.

Dr. Masgutova working with Wojtek at an Intensive Conference in Poland.

Wojtek and Kamila arrived in Mielno filled with doubt, but also with a hope that MNRI® might just be able to open the door to faster improvement and a higher quality of life for Wojtek.

The patient was wheelchair-bound. He could sometime transfer with assistance. He was very anxious, yelled a great deal, hyperventilated often, sweated profusely, and did not tolerate lying on his stomach. His arms were in flexion close to his chest, hands in a fist. He presented strong tactile defensiveness and strongly resisted to be touched. He had very hyperactive protection and survival mechanisms. Due to the stroke in the left hemisphere, his right eye would not close completely. He was extremely sensitive to noise, especially with large numbers of people. He was persistently agitated, irritated, and tense. With his wife's help he was able to participate in rehabilitation. Once on the treatment table he would constantly pick up his head, flex his arms, and yell. He had pathological muscle tone, making it difficult to lie in any position. He did not want to lie on his side at all, tensing his body even more and communicated his displeasure with cries and yells. While lying on his stomach he would always support himself with one arm and would not permit his head to be placed on the table. Always fearful, he tried to control all movement around him. Although he would occasionally tire, he soon started fighting again. His tactile defensiveness and discomfort in combination with physical disability kept him from settling down. The motor control of his extremities was very disorganized. His right leg was very stiff while the left showed better movement responses. His grasp reflex was hyperactive. Wojtek would often dissociate and close his eyes. He tended to roll his eyes up towards the top of the skull. It was difficult to establish eye contact with him. He could recognize close family relations, but was not interested in other people.

From this point on, Wojtek had another 11 days of MNRI® therapy. The main goal of the reflex pattern integration program was to optimize the functioning of his brain and the whole nervous system. Very importantly, we worked on lowering tactile hypersensitivity, reducing negative defense mechanisms, as well as regaining the abilities he had lost. Through the reflex pattern integration exercises, we were able to establish a 'language' through which we could reach his nervous system. Each day we worked with his sensory, tendon, and muscular systems. Through stimulation, his brain would begin to recognize and relearn correct reflex patterns. These patterns were built on top of newly organized relationships between sensory system pathways and motor neurons of the brain therefore rebuilding proper reflex circuits.

To the surprise of both his wife and mother, Wojtek responded quickly and positively to the applied techniques. Pathological muscle tension was progressively reduced. He exhibited less tactile defensiveness, no

longer yelled, hyperventilated less often, and opened his spastic fists. Towards the end of the conference he stood up from his wheelchair and was able to take a few steps with contact guard assistance. There was also improvement in the movement of his eyes and the closing of his right eye.

At the end, Wojtek's family was happy and very proud of him. As MNRI® therapists, our group was glad we could help. After seeing his progress, Wojtek's wife decided to continue the MNRI® program at home as well as periodically bring him to our offices in Zielona Gora for additional therapy.

Over the course of 5 months of systematic therapy, incredible changes were observed. Wojtek started walking even up stairs with assistance. He showed a greater range of emotions. He began to recognize and show the way to various destinations. He was able to concentrate and to remain present for longer periods of time. He stopped yelling, perspiring excessively, and hyperventilating. The motor control of his hands became more stable. He began to recognize people and objects and to communicate with a thumbs up gesture. Although he didn't always comprehend, he began to respond to tonal inflection when asked questions.

Wojtek is now in his second year of MNRI® therapy. He participates in Dr. S. Masgutova's intensive conferences twice a year. All this work has been yielding ever-greater results. Lately, positive changes have been observed in bowel and bladder control, walking and body posture, and speech development.

We still have a lot of work in front of us, but Wojtek's optimism, motivation, and the incredible support of his family all allow him to fully benefit from the possibilities opened up by MNRI®.

MNRI® Developing Integrated Reflexes

Interest in the MNRI® reflex integration program continues to increase in the medical community. More and more doctors of various specialties have become interested in the concepts and underpinnings of MNRI®. There is growing interest among patients and the families of patients suffering from neurodeficits as well as those with neurophysiological and structural dysfunction caused by damage to the central nervous system. Many people with challenges are looking for more effective therapeutic approaches.

The MNRI® programs are based on many years of clinical and research experience as well as ongoing assessment of the results achieved with children and adults participating in MNRI® Family Conferences.

MNRI® offers a holistic view of neurosensory motor development and human cognitive function. It is based on the application of very specific hands-on techniques designed to facilitate optimal functioning of the central nervous system and activation of brain neuroplasticity mechanisms. It significantly impacts reflexive and automatic responses of the body. It influences coordination between the muscular and nervous systems, activating: sensory-motor memory, homeostasis and self-regulation of the nervous system, and muscle and fascia systems for reestablishing structural integration of the body.

The main goals of MNRI® are: supporting and facilitating reflex integration, activation and optimization of gross and fine motor control, support and facilitation of psychological and psychomotor development, improvement in sensory-motor aspects of the function of reflex circuits which as we know allows for creation of new neuro pathways.

Reflexes are an automatic response to specific stimuli that have a very specific response described by several parameters: specific motor pattern, direction of response, latency and timing, intensity, and symmetry.

Retained, but not integrated, reflexes have a negative impact on the development of postural responses, balancing and righting responses, dynamic motor control, and overall levels of functioning. They lead to the development of compensatory mechanisms and not-matured and underdeveloped behaviors that prevent the person from achieving their highest potentials and skills. Non-integrated reflex patterns negatively impact brain development at many levels.

MNRI® offers both a diagnostic aspect as well as a therapeutic one (in the form of exercise in the reflex integration program). Integration exercises are movement patterns that are used to remind the body of proper sensory-motor connections. This allows for correction of reflex patterns and reorganization of the nervous system to optimal functioning.

All innate automatic responses, when integrated and matured allow for proper function of the cortex and serve as a base for the development of higher motor and cognitive functions, including walking, speech, cognition, inner control, emotional stability, writing, and abstract thinking.

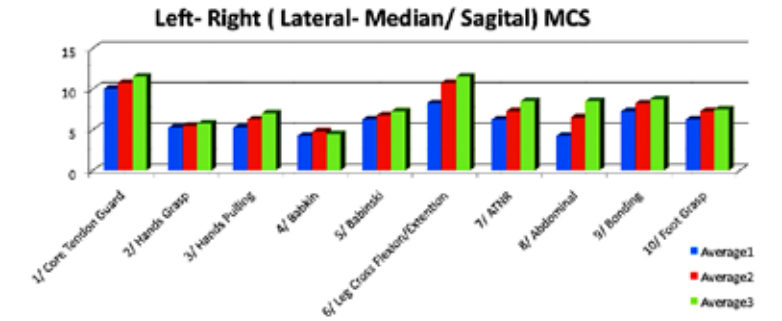
Analysis of Wojtek's Progress in MNRI® Therapy

The following represents the Assessment performed by Dr. Masgutova of individual reflex patterns. This data was collected over the course of two conferences attended by Wojtek. The first conference took place in May, 2012 and the second in September, 2013.

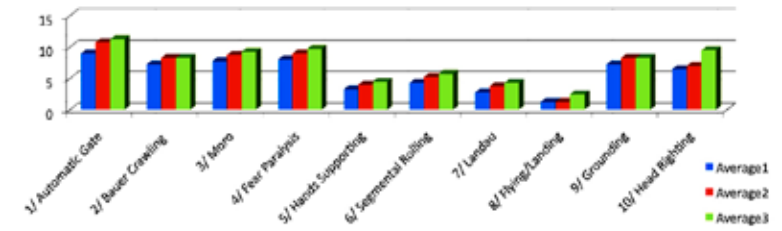
The NewKrefft statistical model was used in analyzing the data (Prof. Anna Kreft, 2004). The data show that significant and positive improvements occurred in the level of reflex pattern integration.

The following table presents the areas of focus in using MNRI® to improve Wojtek's functional capabilities and motor skills. For each area, we also indicate the level of visible, beneficial, and stable changes after the first and second conference.

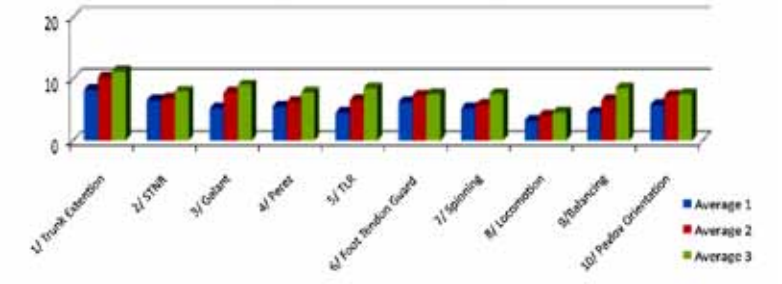
Wojtek Reflex pattern	Left- Right (Lateral- Median/ Sagital) MCS 1/ Core Tendon Guard	2/ Hands Grasp	3/ Hands Pulling	4/ Babkin	5/ Babinski	6/ Leg Cross Flexion/Extention	7/ ATNR	8/ Abdominal	9/ Bonding	10/ Foot Grasp
Average1	10	5.75	5.25	4.75	6.75	8.75	6.75	4.25	7.25	6.25
Average2	10.75	5.5	6.25	4.75	6.75	10.75	7.25	6.5	8.25	7.25
Average3	11.5	5.75	7	4.5	7.25	13.5	8.5	8.5	8.75	7.5



Wojtek Reflex pattern	Up-Down (Superior-Inferior/Horizontal) MCS 1/ Automatic Gate	2/ Bauer Crawling	3/ Moro	4/ Fear Paralysis	5/ Hands Supporting	6/ Segmental Rolling	7/ Landau	8/ Flying/Landing	9/ Grounding	10/ Head Righting
Average1	9	7.25	7.75	8	3.25	4.25	2.75	1.25	7.25	6.5
Average2	10.75	8.25	8.75	9	4	5.25	3.75	1.25	8.25	7
Average3	11.25	8.25	9.25	9.75	4.5	5.75	4.25	2.5	8.25	9.5



Wojtek Reflex pattern	Front-Back (Anterioir/Posterior) MCS 1/ Trunk Extention	2/ STNR	3/ Galant	4/ Perez	5/ TLR	6/ Foot Tendon Guard	7/ Spinning	8/ Locomotion	9/Balancing	10/ Paviov Orientation
Average 1	8.25	6.5	5.25	5.5	4.5	6.25	5.25	5.25	4.5	5.75
Average 2	10.25	6.75	7.75	6.25	6.5	7.25	5.75	4	6.5	7.25
Average 3	11.25	8	9	7.75	8.5	7.5	7.5	4.5	8.5	7.5



Wojtek's Progress in MNRI® Therapy:

Skill	Before MNRI® Program	After MNRI® Program
1. Gross motor coordination control	Couldn't stand independently or with support. Couldn't walk, perform homological or reciprocal movements. Asymmetric and weak sitting position. Pathological coordination of movement. Very fragmented trunk extension.	Post-conference 1: Improvement in sitting with better spine extension. Attempted to stand independently with prolonged periods of maintaining this position. Post-conference 2: Better symmetry observed in standing posture. Was able to walk independently and better able to move around the house. Could climb stairs with assistance.
2. Muscle tone	Pathological and spastic muscle tone - particularly in the upper extremities, more significant on the right side. Clutched fists, with the thumb inside the palm - impossible to open.	Post-conference 1: Improvement in regulation of muscle tone. Palms open. Incremental, constant, and persistent increase in range of motion of the upper extremities. Post-conference 2: It was possible to more easily and quickly open his arms (bringing arms above his head and then stretching them to the sides), including opening the palms. Beginning stages of improved hand coordination. Able to perform tasks with left hand more precisely and more quickly.
3. Postural control	Significant structural asymmetry of the body and extremities - both in posture and movement. Could not balance statically or dynamically. Tired easily. Avoided uncomfortable positions: lying on the stomach, standing, walking. Absence of coordinated complex movements. Did not stand. Did not walk independently or with assistance. Clenched fists spastically enclosing the thumb.	Post-conference 1: Improvement in structural symmetry. Maintained upright position in sitting. Could independently walk ever-greater distances. He leaned forward and to the right while walking. Post-conference 2: Fully upright body position. Tolerated lying on his stomach and on his side. Tolerated standing and walking. Increased levels of happiness. Demonstrated greater endurance and coordination. Was proud of his postural control.
4. Fine motor control	Right eye did not close fully and exhibited bulging. Uneven alignment of the eyes. Very narrow visual field. Lack of eye movement with hyperactive nystagmus. Pathological oculovestibular and oculokinetic reactions.	After first conference: Open palms. Significant reduction in hyperactivity of hands Grasp Reflex. After second conference: Able to independently perform the following actions: eat, place shoes onto his daughter's feet, and turn pages in a newspaper. Better able to hold a cup in his left hand and drink independently. His movements were more confident, purposeful, and smooth. Able to use independently developed signals for communication - thumbs up for 'yes' and thumbs down for 'no'.
5. Visual responses	Auditory hypersensitivity. ATNR reflex pattern and Acoustic Reflex were not coordinated.	After first conference: Right eye closed more completely. Reduced bulging of the eye. Recognized more people and places. Was interested in looking at objects (e.g. newspapers). Improvement in eye movement. However, oculomotor and oculokinetic reactions still pathological. After second conference: Could focus due to improvement in visual convergence. Concentrated for longer periods of time. Improved 3-D vision. Better eye tracking triggered by objects, sounds, and motions. Increasing visual field. Stabilized nystagmus. Improved oculovestibular and oculokinetic reactions.
6. Auditory responses	Presented with an Abdominal response instead of ATNR which interfered with his ability to regulate reaction and decoding of acoustic stimuli.	After first conference: Began to show animated and positive reactions to music. Had greater tolerance to movement and sounds. He vocalized. After second conference: Significantly reduced auditory hypersensitivity and irritation from noise. Improved function of the ATNR Reflex pattern and coordination with the acoustic reflex. Abdominal Reflex still interfered with ATNR Reflex, but there was improved decoding of auditory stimuli. Improvements in speech.
7. Emotional development, appropriate reactions and emotional stability	Extremely frightened and tense. Strong tactile hypersensitivity. Agitated when confronted by new people. Yelled almost constantly. Perspired profusely. Hyperventilated often.	After first conference: Was less afraid. Defense mechanisms triggered less often. Showed greater interest in surroundings. Smiled more. Began to cry. Rarely yelled. After second conference: Attempted to establish contact, communicate, express happiness. Showed pride in wife and daughter.

Skill	Before MNRI® Program	After MNRI® Program
8. Cognition and perception	Only recognized immediate relatives. Disinterested in surroundings. Poor ability to process stimuli. Poor ability to: concentrate, remember, analyze and synthesize. Poor spatial orientation. Unable to fully comprehend sentence structure and statements directed at him.	After first conference: Began to recognize other people, places, and the way to places. Pointed with his finger to indicate the target of his desire. Said, "No." Liked to look out the window. Liked to watch comedies (e.g.: *Laurel and Hardy*). After second conference: Often laughed in manner appropriate to situation. Increased duration of presence and concentration. Was more careful.
9. Oral-facial reflexes, speech	Weak functions related to eating, including biting, chewing, and swallowing. Poor coordination of these functions with breathing.	After first conference: Improved swallowing and breathing, sucking, and chewing. Difficulty in controlling organs of speech production persists. After second conference: Improved facial expressions and head control. Reduction in excessive facial muscles tension.

The above analysis speaks to Wojtek's success. Every day, his family saw positive changes in his behavior and abilities.

Woven into this story is the love shown to Wojtek by his wife, daughter, and mother and their battle for the life of their husband, father, and son. They showed incredible hope, strength, and determination in order to bring Wojtek back to health. In all of this let us not forget Wojtek's willpower and positive spirit that, through his optimistic nature, was able to lend energy to his family and his therapists to persevere in working with him. He projected a zest for life and a desire to help in his own rehabilitation. This testified to the development of his awareness and control.

Summary & Conclusion

Wotjek riding a bike.

After suffering injury to his central nervous system, Wotjek made incredible developmental, physical, emotional and cognitive strides after MNRI® was added to his rehabilitation regimen.

Improvements in many areas have given him a greater degree of independent functioning. These areas of improvement included: gross motor control, muscle tone, postural control, fine motor control, and ocular, auditory, cognitive responses as well as emotional development.

The therapeutic regimen leveraged the neurosensorimotor resources of reflex patterns. These patterns are units of the nervous system (Sechenov, 1961; Pavlov, 1960) that can be used to positively influence the self-regulation of many processes and areas of development and function. The analysis of ongoing improvements experienced by the patient provides testimony to the efficacy of MNRI®.

Working with reflexes stimulates the proper creation of reflex circuits, stimulating and using the neuroplasticity of the brain at all ages and various levels of injury. MNRI® promotes the integration of the basic sensorimotor reflexes necessary for proper development. Wojtek's case confirms the importance of working with primary motor patterns that never disappear, but integrate into higher brain functions. By stimulating the brain stem in an effective manner we can rebuild lost abilities at any age.

MNRI® can be used effectively in treating patients with serious brain injury. In Wotjek's case, not only did it provide release from emotional stress, it also activated and supported various functions. The therapeutic process underscores the important and non-trivial nature of working with protection and survival mechanisms that form the basis of further development.

References

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We congratulate Wojtek and his amazing achievements in recovery and, with his integrated reflexes, come easy biking, speech, and happy singing! Congratulations to all his family and thank you for your best support, love, and care! – Teresa-Ewa Busz and Beata Oginska-Dutkiewicz