

MIND Body

By John F. Barnes, PT

Integration of Neuro-Developmental Techniques, Sensory Integration and Myofascial Release



Neuro-Developmental Techniques (NDT) and Sensory Integration (SI) complement each other in an extraordinary manner. Myofascial release provides a means to obtain tissue mobility; then NDT facilitates active, functional movement on the part of the patient that uses that new mobility. The therapist often is releasing restrictions and facilitating movement,

virtually simultaneously. Using both approaches is essential; neither one is a replacement for the other.¹

Those experienced in NDT and SI have either been through or heard of the enormous controversy surrounding NDT and SI as unproven new ideas. The results that you have achieved, despite the ongoing skepticism, are greatly appreciated by your patients and their families.

The prerequisites for normal movement are:

1. Normal muscle tone
2. Normal sensory system
3. Normal range of motion i.e. mobility

While NDT treatment offers techniques to change muscle tone and length and postural alignment in preparation for facilitating active movement, no attention is paid to the common denominator — the fascial system.

Mobility ... what if your patients had the equivalent of twisted wire around the autonomic, peripheral and central nervous systems?

What if this tissue could exert a crushing pressure of up to 2,000 pounds per square inch on these important and sensitive structures of our bodies?

What if the most pervasive system of the body (the myofascial system), which can create a twisted crushing environment for every structure and system of the body, was being ignored? Wouldn't it make sense to remove this "straightjacket" of pressure to facilitate motion, function and comfort?

Like the leap of faith you needed to take to look into the effectiveness of NDT; in the best interest of the patients in your care,

would you be willing to stretch again?

The following is a case history written by the patient's mother which may be of interest to you:

Kevin Lynch is a very pleasant, 7-year-old boy with cerebral palsy. He has a seizure disorder, a gastrostomy button and is microcephalic. His muscle tone is a mixture of severe spasticity mixed with athetosis.

The nature of Kevin's muscle tone is such that he has a high predisposition to contractures and deformity. The areas of his body that are the most at risk are his shoulders, thumbs, trunk and all lower extremity joints. As of this date, Kevin has had extensive soft tissue surgery done twice to correct soft tissue tightness in his legs (1987 and 1989).

Other surgeries which Kevin has had were a nissen procedure or fundoplication at the time he had his gastrostomy tube inserted in 1989. Surgery for strabismus was performed twice (1985 and 1987). His most recent surgery was for undescended testicles in August 1990.

Kevin was a full month overdue at birth. When he was three weeks overdue, I was given a stress test. The initial doses of pitocin did not produce the desired contractions so the nurse gave a large increase in medication. This produced one six minute contraction followed by an eight minute contraction. A normal contraction lasts up to 60 seconds. Anything longer can stress the fetus and cause the passage of meconium. After compromising the fetus with this test, we were sent home for a week. A cesarean section was performed one week later. The selection of spinal anesthesia produced maternal hypotension causing further reduction in oxygenation. There was unacceptably lengthy delay before an emergency surgery. Kevin was not breathing at birth and had to be resuscitated. There were large amounts of thick meconium stained fluid. His Apgars were two and five. Birth weight was 6 pounds, 14 ounces; 20 inches in length with normal head circumference. Kevin was fistled at birth and had seizures within the first 12 hours. It was necessary to insert a chest tube for pneumothorax at birth and a second tube has to be inserted within hours.

continued on next page

Continued from previous page

Blood gases showed a combined metabolic and respiratory acidosis. I was age 33 at the time of delivery, my pregnancy was completely normal, with no medications and no exposure to infectious diseases. Genetic testing done a year after I delivered indicated no genetic deficiencies. The post dates and post mature status of Kevin's birth are the unfortunate result of a failure to recognize a pregnancy that had gone beyond the due date and was demonstrating evidence of inadequate fetal status.

Approximately three months after birth, the pediatric neurologist advised us that Kevin would be a total vegetable and we should consider placing him in an institution. We chose not to follow this advice. Kevin was enrolled in early intervention therapies. Traditional physical therapy was helpful, but we didn't seem to be making much progress. We briefly tried patterning before being introduced to NDT therapy at Elizabethtown Hospital during our first 5-week stay in 1987. We had finally found something that was very productive for Kevin. Elizabethtown referred us to excellent NDT therapists whom we have been with ever since.

During our second one month stay at Elizabethtown Rehab Center in February 1989, we learned about myofascial release. When Kevin's physical therapist first saw Kevin, his chair was semi-reclined. After two weeks of daily myofascial release techniques, he was no longer pulled forward by tight fascial restrictions in his chest and psoas. There was a large area of scar tissue on his chest as a result of a G-tube surgery performed in 1988. Kevin's hips were no longer tightening and causing discomfort. His chair was brought back to a 90 degree sitting angle. By the end of the month, we no longer had to keep fighting Kevin's desire to bend to the left.

His positional scoliosis, has drastically improved. We were so impressed with myofascial release that on the recommendation of Laura Hammon, PT, we went directly to John F. Barnes' Myofascial Release Treatment Center in Paoli, Pa., for treatment of both Kevin and myself. I had been suffering for two years with back spasms and pain.

John F. Barnes, PT, began myofascial release treatments and after the first night following treatment Kevin vocalized and laughed the entire night. It made me nervous because I did not understand any of this yet. It soon became evident that Kevin's attention span and alertness

were visibly improved. He would now, for the first time, attend to an entire television show or story. Kevin's scissoring greatly improved also. We did not have a problem with scissoring again until after recent testicle surgery. Once he was able to receive therapy in that area again, the scissoring disappeared. Following two surgeries for strabismus, we still needed to patch frequently. After treatments in Paoli by Barnes and Kate Bessoir, PT, patching was not needed.

It became evident to us that there was a connection between cranial restrictions and seizures. With the help of Barnes and Barry Gillespie, DMD, MSD, we were able to keep Kevin medication free for two years. After a recent large growth spurt, which was caused by tightening of the dural tube and cranium, it became necessary to return to medication temporarily. Two myofascial/cranial treatments performed by Barnes stopped Kevin's seizures, which resulted in our physician ceasing all medication. When Kevin's cranium is tight, he will hold the side of his head until I ask of he wants me to make it loose. I then get the most thankful smile you can imagine or he will grab my fingers and pull them to his head.



Pediatric myofascial release is essential in the care of children

It is obvious how Kevin feels about this therapy. He vocally cheers when his therapist enters the room. As soon as therapy begins, he becomes very mellow. After therapy, he is extremely vocal and bubbly.

In my opinion, all a person really needs to do to believe in this therapy is to ask a child who has received its benefits. It will be nice to have all the research on file about myofascial release, but I am very grateful that we did not have to wait until that time to reap the benefits.

Maureen Lynch

You will find that the proprioceptive senses and skills that you have already developed as an expert in NDT and/or SI will allow you to learn and utilize myofascial release quite readily.

Since the body's neuromusculoskeletal system is surrounded by and embedded in fascial tissue, restrictions of the tissue obviously interfere with achieving normal range of motion.²

Myofascial release techniques produce changes in tissue mobility that could not be obtained with NDT or SI only. Fascial changes produce tonal and sensory changes as well. Reducing fascial restrictions affects muscle and tendon length, bony alignment and ligamentous structures, thereby enhancing the patient's potential for active movement.

Are you willing to stretch again to further expand your skills, sensitivity and awareness? Please consider combining myofascial release with NDT, SI and other appropriate techniques to maximize your effectiveness.

References

1. Weis, D. MFR in pediatrics — one therapist's story. *Physical Therapy Forum*, Feb. 13, 1989.
2. Myofascial release: The search for excellence. RSI T/A MFR Seminars, 1990.

— John F. Barnes, PT, is the owner of the Myofascial Release Treatment Centers in Sedona, Ariz. and in Paoli, Pa. (suburban Philadelphia). In addition, Barnes presents Myofascial Release Seminars across the country and in Canada. He has published a book and produced three videos on his Myofascial Release Approach. For more information on treatment centers, seminars or merchandise, please call 1-800-FASCIAL, or write MFR Seminars, 10 South Leopard Road, One, Paoli, PA 19301, or visit his web site at <vll.com/mfr/>.