



April 2012

PT Classroom ▣ The Therapeutic Value of Neural Manipulation

by Barbara LeVan, PT, BI-D



Barbara LeVan, PT, BI-D is an alumni of the University of Maryland and was awarded her degree in Physical therapy from the University of Pittsburgh in 1977. She began her clinical work in a comprehensive rehabilitation setting while acting as Clinical Field Instructor for the University of Pittsburgh. She continued post graduate studies in orthopaedic and manual therapy while working in sports clinics and out-patient orthopaedic hospital based settings until opening her private practice in Wilmington, Vermont in 1989. Barbara has continued her clinical education through courses in varying approaches to joint and soft tissue manipulation such as Barral Visceral Manipulation, Neural Manipulation, New Manual Articular Approach and Visceral Vascular Manipulation. She has also studied Muscle Energy, CranioSacral Therapy and Cranial Fluid Dynamics, Zero Balancing, Spirituality and Healing, and Energy Mirrors. She is a Barral Institute Diplomate and an Advanced Certified Practitioner of Process Acupressure. Barbara became a Teaching Assistant for Visceral Manipulation in 1993, then joining the teaching team as a Visceral Manipulation Teacher for the Barral Institute in 2006. She began teaching in the Neural Manipulation curriculum for the Barral Institute in 2008. Barbara manages Physical Therapy Plus, LLC in Wilmington, Vermont providing care to children and adults utilizing a holistic integrative model.

The Therapeutic Value of Neural Manipulation



Neural Manipulation as developed by [Jean-Pierre Barral, DO, MRO\(F\), PT](#) and [Alain Croibier, DO, MRO\(F\)](#) examines mechanical relationships between the cranium/spine hard frame to the dural and neural elements. It provides assessment and treatment approaches to address restrictions of the dural and neural components not commonly focused on with musculoskeletal symptoms. Neural Manipulation identifies and releases local nerve restrictions while at the same time examines the effect these local fixations have on the rest of the body, and by accessing this relationship, resolves the more comprehensive (global) dysfunctional patterns.

A nerve only functions correctly when it is able to move freely within its surrounding structures. The modality of Neural Manipulation facilitates nerve conductivity and intraneural blood supply for local and systemic responsiveness. By understanding the detailed anatomy of the neural manipulation, one can clearly see the potential for pathological change when nerves are restricted.

Manual therapy, as it applies to the treatment of nerves, follows the standard principles of mobility and

function. For optimal function nerves must be able to move freely within its surroundings. This freedom of movement is essential for:

- nerve conduction
- electromagnetic conduction
- intraneural blood supply
- intraneural nerve supply
- local and systemic responsiveness

Neural Fixation

When a nerve is fixed, it typically loses its ability to glide and/or stretch in length. The intra- or peri-neural pressure dramatically increases, at the same time there are changes in consistency. The nerve pathway shows functional interferences (blood supply or electric and/or electromagnetic conductivity).

With fixation smaller nerve sections can harden. They feel like buds and are very sensitive or painful to the touch. Such "Nerve Buds" are an indication of an intraneural interference, an overload of physiological pressure points or a local fibrosis. Nerve buds can be released very quickly, sometimes within one therapy session.

Palpation of the skin branches of peripheral nerves can be useful for evaluative, as well for therapeutic considerations. When evaluating the skin branches, if they are sensitive or painful to pressure, typically there is a fixation of the deeper nerve branches.

Neural Manipulation and its Influence on Organs

Visceral Manipulation techniques can affect the movement apparatus and vice versa. It is important to note that the release of sensitive nerve buds can have a favorable effect on the functioning of the corresponding visceral organs. Neural Manipulation is involved in all body functions and without neural control certain visceral activity cannot be maintained. The stimulation of nerves is processed centrally and reported back to the body as feedback. This sequence of responses functions providing no interference (fixation) is present.

Whether the structures involved include joints, fascia, viscera, brain and peripheral nerves, or emotional centers, proper evaluation is essential for good therapeutic results. The treatment of a normal nerve section (without fixation) has no adverse effect, however a local nerve irritation can result.

Generally, one thinks of a trauma as a severe injury that causes damage. This definition encompasses different gradients of external forces acting on the body. For example, not every joint trauma leads to a fracture or dislocation, which is verifiable by x-ray. From a medical standpoint, patients are often considered to be perfectly healthy, even though they are not at all the same as they were before sustaining a trauma. The same is generally true for the neural manipulation and the nerves. Traumatic nerve lesions typically do not result in a recognizable, well defined, clinical picture. Instead a broad spectrum of disturbances can be found. Because of their inconsistency and lack of evidence (with conventional examination methods and imaging procedures) symptoms are often overlooked.

Often functional nerve lesions develop after neurotropic diseases (like herpes zoster) or as a result of posture imbalances. More frequently they derive from mechanical forces and energies: friction, pressure (compression) or traction forces (stretch), all of which affect the nerves. To bring about lesions, a trauma does not have to be severe. Often, it is a matter of repetitive micro-traumas. For example, a non-

physiological movement, a harmless sprain, faulty posture or muscle contractions. Pathological processes can take place intra- and extraneurally.

Intraneurally the trauma affects distinct nerve structures:

- demyelination, neurinoma, hypoxia of certain fibers (in the conducting nerve tissues),
- epineural scarring, perifascicular edema, fibrosis, irritation of the arachnoid space or the dura mater (in the neural connective tissue).

These categories of pathology are rarely found in isolation. Clinically we typically find several together. Extraneural disturbances are caused chiefly by a narrowing of the spinal canal. Trauma can also impact the "nerve bud" or a functional intersection of the nerve tissue. For example, a nerve or epidural hematoma, an epineural tissue fixation, a dura adhesion in the spinal canal, as well as pressure caused by bone or muscle swelling can result.

Intra- and extraneural function disturbances often occur in tandem. In our opinion, they are closely connected with a neural fixation dysfunction and/or are even the cause of it. Our aim is to treat this kind of fixation with manual techniques or at least to minimize their negative results.

How Does Neural Manipulation Help You?

With interferences in certain body zones, the respective spinal cord and/or brain structures may also be irritated. A peripheral nerve treatment can influence these so-called facilitated areas and therefore promote a common or systemic effect. Manual treatments are basically effective due to the mechanical effects that cause neural stimuli, which can be transmitted at a local or central level. Manual neural manipulation changes intra- and extraneural pressure, improves sympathetic function to blood vessels due to the auto-innervation of the sympathetic gangli and sympathetic innervation of peri-neural connective tissues both of which are affected with treatment of fixations in the nerve sheaths.

How is Neural Manipulation Performed?

Treatment to nerves is through precise applied pressure. The tension of the perineurium and all other neural connective tissues is transmitted down to the root sheaths, so the distal contact has a central effect mechanically and reflexogenically.

For more information regarding Neural Manipulation, how it can benefit your patients, and training seminars, please go to Barralinstitute.com.

Last revised: March 29, 2012
by Barbara LeVan, PT, BI-D