



90% of Whiplash Injuries and Traumas have a Visceral Component

By Jean-Pierre Barral DO, MRO(F)

According to French Osteopath Jean-Pierre Barral, developer of Visceral Manipulation, up to 90% of musculoskeletal problems have a visceral component. To understand why let's explore some important features of the body structure. All ligaments, tendons, fascia and other forms of connective tissue are continuous throughout the body. They make up a three-dimensional network comprising about 20% of the weight of the body. Collectively these tissues are the support structures which maintain spatial relationships among all else in the body. Most people think our bones hold us up. But if you were to remove the muscles and connective tissues, the skeleton would soon collapse. The bones act as the framework for the body and as attachment sites for this myofascial system. The bones hold us apart, and the myofascia holds us together, keeps us upright, and either allows or restricts movement.

All of the major systems in the body - musculo-skeletal, nervous, circulatory, digestive, and organs - are enveloped in connective tissue. Characteristics of a healthy connective tissue system are flexibility, elasticity, length and resilience. This tissue absorbs and responds to stress, injury, surgery, illness, emotional trauma and everyday gravitational force. Any of these factors will immediately, or over time, cause an imbalance in the connective tissue system. This imbalance is seen as a shortening, thickening, dehydration of the tissue which impairs muscle function, joint mobility, along with proper function of organs. This is usually experienced as pain, decreased flexibility, impaired movement and dis-ease of varying sorts.

Because of the continuous nature of these connective tissues no distortion or imbalance can remain localized. For this reason, the initial cause of a person's pain or dysfunction can often be far removed from the site of the symptoms. Consequently any treatment to one area may facilitate changes in other parts of the body. As that old song goes, the head bone is truly connected to the thigh bone.

A Two-Way Super Highway

What Jean-Pierre Barral has added to this body picture is a detailed understanding of the role the connective tissue support system plays in relation to the internal organs – the viscera. It has long been known that musculoskeletal problems and spinal dysfunction can affect the internal organs by altering the flow of messages in the nerves to the organs. Barral has demonstrated that this connection between the musculoskeletal system and the organs is actually a two-way super highway. And most importantly, the traffic leading from organs (and their support structures) to the musculoskeletal system is far greater than the other direction. All of the internal organs are connected more or less directly to the spine by their support membranes.

An integrative approach to evaluation and treatment of any musculoskeletal dysfunction requires assessment of the structural relationships between the viscera, and their fascial or ligamentous attachments to the musculoskeletal system. Viscera move like the musculoskeletal system in 3 dimensions. This ligamentous and fascial support system attaches them to the posterior wall of the body. If there is tension in the ligament and fascia, there will be tension and compensations in the back body wall and throughout the body. While richly innervated in other ways, the support membranes of the organs have

very few nociceptors (nerves that report pain). We are rarely aware problems in or near an organ until the ability of the musculature to compensate for the problem is exceeded, and pain or restrictions are experienced in the musculoskeletal system.

Gentle manipulation of the visceral support system can improve organ function. At the same time, strain can be taken out of the visceral support membranes as a key component for treating musculoskeletal problems. The focus of education for many massage therapists has been the study of how the structures that lie behind or right along the spine influence the spine's mobility and function. Visceral Manipulation offers a method for assessing and treating the influence of those structures that lie in front and away from the spine. Those influential structures can include organs and their fascial attachments, peritoneum, the greater omentum or blood vessels. Gail Wetzler, PT, Clinical Director of the Barral Institute, describes Visceral Manipulation as "organ specific fascial mobilization."

The Lungs and Musculoskeletal Disorders

The lungs are surrounded by two layers of pleural membranes. The pleura are essentially fascial sheets associated with organs. The inner or visceral pleura forms the surface of the lungs. The outer layer (parietal pleura) lines the inner surface of the chest cavity. At the superior end of the lung, the parietal pleura is suspended by a complex of membranes (lung support membranes) from the middle scalene muscle and the transverse processes of C1-C3 vertebrae. Pneumonia and other respiratory illness can leave scar tissue and adhesions in these lung support membranes.

Pneumonia can leave scars in the pleura. Hard coughing can break ribs. Some of us have had blows to the chest. Pleural adhesions and contractures accumulate through life, unbeknownst to most of us. We take more than 20,000 breaths per day. If there are pleural adhesions, these 20,000 breaths will be taken within an imbalanced system, which forces the body to move around a fixed access (the adhesion). Since the lungs are suspended from the cervical vertebrae, this puts a tremendous strain on the neck. The cervical paraspinal musculature becomes tight in its attempt to resist this pull.

The pleural contractures will produce cervical displacement and restriction. As we have very few sensory nerves in the pleura, we don't feel the strains around the lung. What we experience is a chronic stiff neck. Freeing the pleura often quickly relieves neck strain and improves head position.

In addition, these tensions affect the scalenes which can impinge on the brachial plexus and vasculature. Pleural pulls on the middle scalene routinely impinge on the nerves supplying the arm and hand. History of severe respiratory illness is a known risk factor for carpal tunnel syndrome and other upper limb repetitive strain injury (RSI).

The Heart and Musculoskeletal Disorders

The heart is enclosed in layered pericardial membranes, the outermost of which is suspended by ligaments attaching it to the posterior surface of the sternum, most strongly at the levels of the third and fifth ribs. The posterior part of the heart attaches to C4-T4 vertebrae. In a whiplash injury the heart is suddenly accelerated/decelerated, injuring its suspensory ligaments. Since these ligaments have no nociceptors, we are not aware that they are injured. During the healing process, the injured membranes become fibrosed, putting tension on the lower cervical and upper thoracic vertebrae. This is a major reason why the neck usually feels worse weeks after a whiplash than it does immediately after the injury. This is also why work on the painful areas of the neck tends to produce only short-lasting results. Visceral Manipulation restores the length and elasticity of the pericardial support ligaments, thereby facilitating lasting improvement in cervical and thoracic pain following whiplash.

As we have seen the membranes supporting the internal organs have multiple and extensive connections with the rest of the support structures. Manipulation of this visceral system has profound and lasting effects on the

organization of the rest of the body. Including the visceral system in the treatment of musculoskeletal disorders will dramatically increase the effectiveness and long-term results for your clients.

ADDITIONAL CONNECTIONS

Visceral Manipulation, or organ specific fascial mobilization, addresses dysfunction within the cylinder of the torso. Each organ has a relationship through its fascial attachment to the spine. Some examples of this relationship are:

- the mesenteric root of the small intestine can limit the mobility of the spine as it crosses the third and fourth lumbar vertebrae;
- a mechanical restriction at the first lumbar vertebra may be influenced through a constant irritation of an old appendectomy scar stimulating the autonomic nervous system;
- the cecum/appendix and L1 share this viscerosomatic interchange;
- decreased flexibility of the fascial connection between the bladder and the head of the femur can limit the mobility of both structures;
- dysfunction of the right and left sacro-iliac joint can result from decreased mobility of the cecum and sigmoid respectively.

Jean-Pierre Barral began teaching Visceral Manipulation in the United States in 1985. Since then he has trained an international team of VM instructors. Barral is the author of numerous textbooks for healthcare professionals. These include Visceral Manipulation; Visceral Manipulation II; Urogenital Manipulation; The Thorax; Manual Thermal Evaluation; Trauma: An Osteopathic Approach; Manual Therapy for the Peripheral Nerves; and Manual Therapy for the Cranial Nerves (the latter three were co-authored with Alain Croibier, D.O.). Barral is also the author a book for the general public titled Understanding the Messages of Your Body, which discusses the link between our organs and our emotions.

Barral continues to research and develop manual therapy techniques while maintaining a clinical practice. Thanks to his pioneering work, candidates in many European countries must now pass a rigorous test in Visceral Manipulation to earn a diploma in osteopathy.

For information about Visceral Manipulation, go to www.barralinstitute.com.