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Delving Deeper into Structure

FINDING THE INTRAOSSEOUS LINE FORCES OF MECHANICAL LINK

By Paul Chauffour, DO,
and Eric Prat, DO
Translated by Cloé Couturier,
LMT/Certified Osteopath

While a person's ability to function remains the ultimate test of any therapy's success, many classical modalities, historically, take a structural route to get there. Even physical therapists of today's generation focus more on releasing joint restrictions in order to enhance function, as opposed to investigating the intrinsic quality of the tissues involved.

In the last few years, however, Mechanical Link practitioners have explored structure at a deeper level to discover crucial fixations. These fixations should be considered an integral part of any global evaluation and treatment plan.

The goal of Mechanical Link is highly logical: to locate and reduce the primary structural restrictions within each body system that cause and maintain tension throughout the rest of the body. When the dominant lesion is discovered and eliminated, other lesions self-correct down the line to allow the body to readjust itself and adapt to newly regulated systems.



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In this sense, a lesion can be defined as any body structure undergoing a restriction of mobility that originated from, and is maintained by, a tension or abnormal resistance in the connective tissue. Connective tissue is resilient, it reforms itself in cases of trauma by scarring to form new collagen fibers (inflammation, fibrosis and sclerosis), which is why we're able to locate fascial barriers.

Embryologically, connective tissue comes from the mesoderm. At the third week of

embryo development (the gastrulation phase), the embryonic disc becomes tridermic, or three-layered. These layers consist of the ectoderm and endoderm, with the third layer—the mesoderm—forming between them.

The central nervous system and the sensorial epithelial (epiderm, eye, ear, nose) originate from the ectoderm. The endoderm forms the digestive system and respiratory system (stomach, liver, lungs) and the mesodermic layer gives origin to the muscles, bones, vascular system and all connective tissues.

So it is the mesoderm, the central tissue that links and unites all the elements of the body, which constitutes the Mechanical Link. Because of the common embryological origin, we must also include within the connective tissue the skeletal tissue (line forces) and the vascular system (heart and vascular axis).

It is primarily the intraosseous line forces, which act as frames for the skeleton, that lead us to reconsider our classical approach to structure and instead assess the body in a more complete “architectural” model.

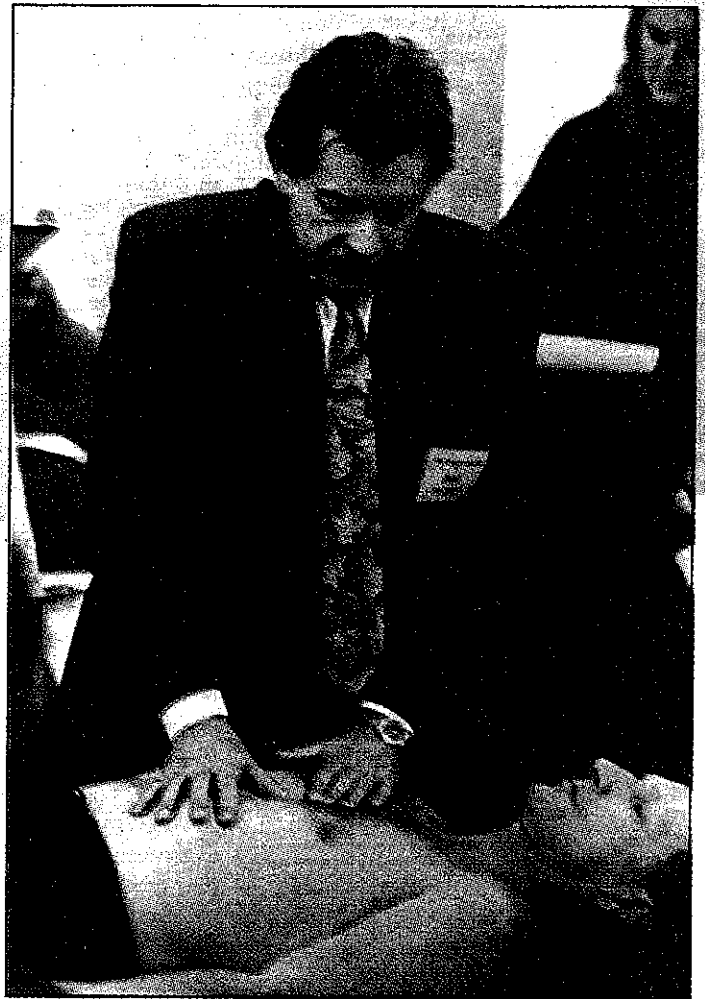
STRUCTURE DICTATES FUNCTION

On a biomechanical level, minor articular movements govern the major ones. Yet with Mechanical Link—which agrees with the fundamental principle of “Stillian” osteopathy that says structure governs function—we delve deeper into structure to offer the following premise: Intraosseous line forces govern the minor movements and, therefore, the major movements.

Here’s an example. If the opening and closing of a door represents a major movement, the minor articular movement would be at the hinges that condition the major movement. This is where practitioners such as classical osteopaths would apply their art. They aim to restore the articular integrity of the hinges to enhance the opening and closing of the door.

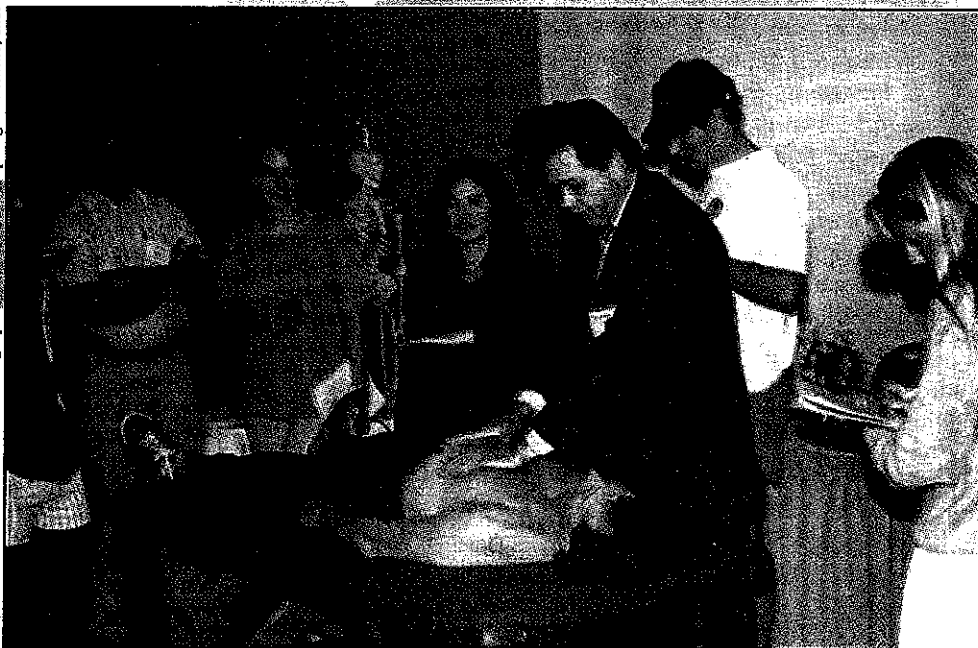
But what if the vertical frame of the door is warped, which affects proper movement? In a case like this, focusing on the

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French Osteopath Paul Chauffour demonstrates the Mechanical Link method to evaluate the body. Chauffour evaluates the thoracic component, specifically, the sternum, to determine the primary structural restrictions.

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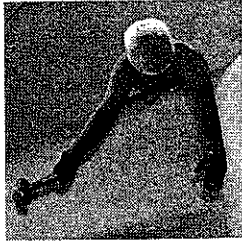


Clinicians note Mechanical Link’s assessment and treatment protocol as demonstrated by its developer, French osteopath Paul Chauffour.

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hinges will not solve the problem. This vertical structure—the true axis of movement—represents the line force upon which we must act to restore the minor and major movement of the door, or whatever system is in consideration.

On an anatomical level, line forces support the osseous skeletal structure in areas where vital forces are exerted. They're



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principally constituted by the cortex of the compact bone, and they follow the trabeculations of the spongy bone where they open and branch into sheathed bundles.

Keeping the architectural model as our reference, we can comprehend this "skeletal" building in this way:

1. Pillars - the vertical structures of support, such as the tibia, the femur, the spine, the ascending branch of the mandible and the mastoid.

2. Beams or Girders - the horizontal structures of support, such as the calcaneus, the tibial plateau, the horizontal part of the mandible and the petrous part of the temporal bone.

3. Flying Buttresses - stays that represent the external structure of the equilibrium, such as the fibula, the clavicle, the spine of the scapular, the zygomatic apophyses of the temporal bones.

4. Arcs - semi-circular structures, such as the head of the femur, the iliac line, the iliac crest, the ribs, the temporal lines.

5. Vaults - such as the plantar vault, the parietal vault and the occipital vault.

6. Keystones - these could be the second cuneiform and S2 or bregma, which is the anterior fontanelle in the cranium.

These various line forces are either united directly; the spine of the scapula and the clavicle, tibia and femur, or within the intermediary of the fascia and the muscles that extend out from there; the iliopsoas that follows the line force of the femur and the inanimate line of the iliac bone.

Along this continuation of the intraosseous line forces, we often find zones of calcification that reinforce the connective tissue within the ligament and tendons where excessive stress has been exerted upon them. So the calcification of the supraspinatus tendon follows the external line forces of the humerus, the calcification of the transverse ligament of the scapular follows the line force of the coracoid process, and the calcification of the anterior insertion of the falx cerebri

(frontal crest) follows the sagittal pillar of the cranial base.

FIXATED FASCIA

Once again, the fixation in the fascial tissue expresses itself in the three successive stages: inflammation, fibrosis and sclerosis.

Every time we practice a systematic assessment, we pay particular attention to these line forces. We directly assess them by testing tension or compression in the longitudinal access, just as we do for the other body tissues.

A fixation is determined by resistance to the pressure, which can be felt as a blockage with loss of the suppleness and elasticity that characterize a free structure. The intraosseous line force restriction should be systematically integrated into the total lesion. Then the Mechanical Link concept of Inhibitory Balance Testing can help determine precisely and accurately which lesion is primary, or dominant.

If a line-force blockage reveals itself as a primary or dominant lesion, free the structure by using the simple yet sophisticated Mechanical Link Evolved Energy Recoil System—a gentle, six-level technique that helps release soft tissue and attain joint mobility without force. In basic terms, the recoil frees the primary lesion that is holding on to all the other fixations in the body. Once the adjustment is performed, we immediately recheck the intraosseous line force to make sure it regained its normal compressibility.

This line force normalization ripples through the connective tissue and creates a major impact on three levels: First in local actions, such as normalizing the movements of the knee and hip by adjusting the external line force of the femur. Then on distant actions, which occurs when all the secondary lesions that were being held in place by the tension of the primary lesion are freed. And third, on deep, general actions by mobilizing the energy that had been blocked.

This type of energetic impact on line forces is often remarkable and even spectacular. Judging by the results we see, we may be impacting the intrinsic metabolism of the bone, osseous reinforcement and erythropoiesis.

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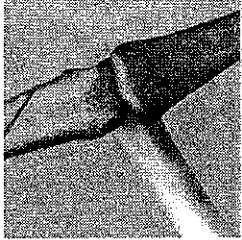
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Structure

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A SPECIAL CASE

Let's look at a particular case of intraosseous lesions in the high-density cranial vault. After the complete, systematic cranium assessment, performed with



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every evaluation, we often discover resistance on the frontal bones, the parietal bones and, more rarely, on the occipital bones. These areas of resistance correspond to the ossification centers of the cranial vault.

The ossification of the membranous origin, as in the one for the cranial base, is of cartilaginous origin. So when we test the pressure here and find a resistance or fixation, we balance it with all the other fixations we find according to the usual Mechanical Link methodology to determine which one is dominant.

Not surprisingly, a primary or dominant fixation in the cranial vault often corresponds to a psychological component. Frontal fixations are often in tune with mental fixations, such as the constant reassessment of certain decisions. Parietal fixations often relate to emotional dysfunction, such as irritability, mood instability or cyclothymic sadness. And occipital fixations often correspond to instinctive behavior. A fixation on the left side could even correspond to a more recent, conscious event, while those on the right side could correspond to deeper issues on a nonconscious level.

The recoil adjustment of the specific fixations localized in the cranial bones will instantly normalize those blockage points, and free the stress to allow the patient to achieve better physical and psychological balance. We may then be able to reinforce our actions on a somato-emotional level with a recoil through phase five (the mentalization of the problem) or phase six (ver-

balization). But no matter what the case, the osseous structure itself is an essential reference point in the osteopathic treatment that allows you to deal with the more subtle levels.

Many intraosseous lesions—and the line forces in particular—can explain “failures” or insufficient results of treatments

limited to the articular level of structure. For that reason, Mechanical Link practitioners systematically integrate intraosseous line forces when examining and treating patients, no matter what the reasons for their original consultations.

The success we've experienced encourages us to share our observations, fully aware that this field remains to be explored. By understanding intraosseous line forces, practitioners becomes more in touch with the true essence of their noble art.

— *Paul Chauffour, DO, adjunct director of the International College of Osteopathy at St. Etienne, France, is one of the most influential and renowned osteopaths in Europe and a pioneer in the field of Mechanical Link. He has authored two books, “Osteopathy of the Inferior Limbs” and “The Osteopathic Mechanical Link.” In addition, he has taught at the European School of Osteopathy at Maidstone, England, and at the Faculty of Medicine in Paris North, department of osteopathy and manual medicine in Paris, France.*

Eric Prat, DO, a French osteopath, is Chauffour's assistant.

A European certified osteopath and licensed massage therapist, Cloé Couturier maintains a private clinical practice at The Upledger Institute, Inc. HealthPlex Clinical Services in Palm Beach Gardens, Fla.

For more information about Mechanical Link, contact The Upledger Institute at (800) 233-5880, extension 9505, or by e-mail at upledger@upledger.com.