

How does the diagnostic aspect of motion palpation fit into your world of chiropractic adjustive procedures, or does it?

Motion palpation analysis has been used for decades by those who practice the art of hands on manipulation of the articulations whose functional component has been lost or compromised. Practitioners like Gonstead, Gillet, Illi, Bourdillion, Homewood, Janse, Weiant, Mennel, Cyriax, Grieve, Kaltenborjn, Dvorak, Faye, Grice, Gittleman, and a host of others too numerous to mention all made significant contributions to the concept that joints actually move in more than one plane. Drs. Carrick and Seaman have taken us to great new heights in the understanding of the neurology of chiropractic. Research is abundant in how joints move. I know that this may sound a little crass, but there is new research to suggest that joint mechanics as taught previously, and in some cases today, is out of date and biomechanically inaccurate.

The motion of the fifth lumbar vertebra with respect to the sacrum during the action of flexion in a sagittal plane is one fine example. Bogduk in Clinical Anatomy of the Lumbar Spine states:

"The reversal occurs principally at the upper levels. Reversal may occur at the L4-L5 level, but does not occur at the L5-S1 level.^{1,2} Patients with proven disc herniation exhibit reduced ranges of motion at all segments, but the level of disc herniation exhibits no greater reduction.³ Increased coupling occurs at the level above a herniation. However, these abnormalities are not sufficiently specific to differentiate between patients with disc herniations and those with low back pain of other origin.³ Moreover, discectomy does not result in improvement of motion nor does it restore normal coupling."³

The concept of palpating coupled motions is not particularly new, Dr. Frederick Carrick published an article in JMPT in the early 1980s describing this concept, however, few if any have made the transition from static to dynamic functional realities of spinal motion in three cardinal planes. Motion palpation joint play analysis is, despite the efforts of a few who continually try to discredit it without offering to the profession anything new, is flourishing and being perfected in every country where there are doctors who believe in the hands-on healing approach of (chiropractic) manual examination and manipulation. Motion palpation has changed significantly from the days when Drs. Gillet and Faye first introduced it to the chiropractic profession. During the late '70s and early '80s the concept of coupled motions was mentioned but not included as part of the joint-play analysis. This has resulted in the unfortunate legacy of doctors still doing one plane joint-play when, in fact, they should be considering coupled axes of rotation, as these motions are the body's innate way of moving. This material will be taught at all MPI seminars this year.

Flexion in a sagittal plane has also resulted in another group of misconceptions. The exact mechanism of lifting still remains a mystery, and yet there are a plethora of theories about how we perform this simple daily task.

"The back muscles are too weak to extend the lumbar spine against large flexion moments; the intra-abdominal balloon has been refuted. The abdominal mechanism and thoracolumbar fascia have been refuted and the posterior ligamentous system

appears too weak to replace the back muscles. Engineering models of the hydraulic amplifier effect and the arch model are still subject to debate. Consequently, the mechanism of lifting may well be essentially as proposed by Farfan and Gracovetsky." (See *The Spinal Engine*, chapter six, or the back force transmission system in the First Interdisciplinary World Congress on Low Back Pain and its Relationship to the Sacroiliac Joint, by Serge Gracovetsky).

The sacroiliac joints must be discussed as separate and distinct entities. From a functional point of view there is an iliosacral joint, which simply means that the ilia are moving on the sacrum and a sacroiliac joint in which the reverse is happening. Granted it is one joint (the sacroiliac joint), however functionally, with recruitment of the lower extremity and ground reactive forces that travel through the back transmission force system and are dispersed according to the action being performed, the joints transit on a multiple number of axes in a number of different planes.

Iliosacral motion occurs about two transverse axes primarily in a sagittal plane in locations determined by sex-specific factors based on surface topography and morphology of the sacroiliac joints. In the female sacroiliac joint the action of rotation appears to be greater than in males. In the male sacroiliac joint the action of translation seems to be significantly greater. (See *Spine*, vol.16, number 9, 1991, "The effects of morphology and histopathologic findings on the mobility of the sacroiliac joint.") The axes are called the inferior transverse and middle transverse axes. The middle transverse axis is within the upper sacroiliac joint and the inferior axis is located at the inferior portion of the lower sacroiliac joint. Iliosacral motion is also conjoined with rotation at the pubic symphysis and coupled to the contralateral oblique axis of the sacroiliac joint.

Sacroiliac movement, sacrum moving on the two ilia, occurs about two transverse axes, two oblique axes and a vertical axis (penta planar motion). Nutation/counternutation takes place at the middle transverse axis. However, because iliosacral motion is conjoined with the pubis, the sacrum must make adaptive movements about the oblique axes alternately. The superior axis is often referred to as the respiratory axis. The axis is actually a physiological axis and fulcrum formed by the posterior sacroiliac joint ligaments, the lateral raphe, the fascia of the external oblique and on some the fascia of the transversus abdominus muscles and the thoracodorsal fascia (see S. Gracovetsky ref. above). During the action of inspiration the sacrum counternutates and upon exhaling the sacrum nutates. A question you may want to ask yourself: How often do I ask my patients to breathe out when adjusting for a fixation in the action of counternutation, or do I just ignore this vital action of the sacrum? Motion palpation and specific testing for this action is taught at all S1 MPI programs.

On the front page of the October 21, 1994 issue of *Dynamic Chiropractic* there is a list of the most popular techniques in the chiropractic profession. If one looks carefully at this list it will be obvious that with the exception of two, motion palpation is and can be an integral part of each and every technique in the chiropractic profession.

Motion palpation is not a technique but a very sophisticated method of evaluating the motion of the joints that will allow you to become a better diagnostician and get sick people well naturally.

References

1. Percy MJ. Stereoradiography of lumbar spine motion. *Acta Orthop Scand Suppl.* 1985 (212): 1-41.
2. Percy M, Portier I, and Shepherd J. Three dimensional x-ray analysis of normal movement in the lumbar spine. *Spine* 1984 (9): 294-297.

3. Tibrewan SB, Pearcy MJ, Porter I, and Spivey J. A prospective study of lumbar spinal movements before and after discectomy using bi-planar radiography. Spine 1985, (10): 455-460.

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Editor's Note: Dr. Innes will be one of the instructors conducting MPI's week long seminar "Neurology and Nutrition of the Subluxation Complex" March 5-11, 1995 in Oahu, Hawaii. His next Spine 1 (S1) seminar will be March 25-26 in St. Louis, Missouri. You may call 1-800-359-2289 to register.

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