Dr. Zink’s Approach to the Low Back and Pelvis

AO Convocation Workshop

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TREATMENT OF THE LUMBAR SPINE USING THRUST MOBILIZATION

The lumbosacral junction is often the key to the treatment of musculoskeletal stress patterns. The base of the sacrum is the foundation for the spinal column, which is a flexible balancing rod upon which the thoracic cage is suspended. The need for a straight spine tends to compensate in a predictable manner. The secondary curve or point where the spine crosses over the line of gravity is at the thoraco-abdominal junction. This too is a transitional area, i.e., an area where there is found the most motion is an area where there is found the most strain or stress. The treatment of these two areas is necessary to affect the lumbar spine and allow the back to drop to the table.

A. **Lumbosacral Junction Technique**

In Common Compensatory Pattern (CCP), the sacrum and pelvis are sidebent to the right in the coronal plane, creating a compensatory lumbar curve of left sidebending and right rotation. This technique is designed to reverse the sidebending of the sacrum and pelvis, also reversing the rotation of the lower portion of the lumbar curve.

1. The patient is placed in the lateral recumbent position on the side toward which the pelvic roll test is restricted (left side in CCP). The operator stands at the side of the table facing the patient. (Fig. 1).

2. While monitoring motion at L5 with the fingertips, the operator grasps the patient's bottom arm and induces trunk rotation (by pulling on the arm) until motion is palpated at L5. The spine should be kept straight (without kyphotic or lordotic curves). The patient's head is turned toward the ceiling.

3. The patient's upper leg (right leg in CCP) is placed in one of the following positions, according to operator's preference and/or patient's comfort:
   a. allowed to fall from the table
   b. knee flexed with foot in the opposite popliteal fossa
   c. straddled by the physician

4. The operator's pronated forearm (left arm in CCP) is placed midway between the crest of the ilium and the ischial tuberosity. The operator's other arm stabilizes the patient's upper thorax.

![Figure 1](image)

*Figure 1*

The patient is placed left side lying to correct sidebending left. The thorax is rotated down to the lumbosacral junction to localize force. Pelvis is rolled left and force is directed cephalad.
5. While maintaining the same rotational relationship, the patient is rolled toward the operator until the operator has gained a mechanical advantage.

6. The patient is asked to take a deep breath and exhale. During exhalation, a high velocity-low amplitude (HVLA) thrust is made in an anterosuperior direction by the operator against the arm that is in contact with the patient's pelvis (left arm in CCP).

**NOTE:** The operator's body should deliver the thrust against the arm. The operator's arms are used to position and stabilize, not to thrust with.

### B. Thoracolumbar Junction Technique

In CCP, the lumbar curve tends to crossover at the thoracolumbar junction. This technique is designed to reverse the sidebending of the lumbar curve at L₁, also reversing the rotation of the thoracolumbar and lower thoracic area.

**NOTE:** The upper crossover point of the lumbar curve may be displaced from the T-L junction by one or more segments, indicated by greater motion restriction. This technique will be described with crossover at T₁₂-L₁.

1. The patient is placed on the side opposite the direction of rotation of L₁ (right side in CCP). The operator stands at the side of the table facing the patient (Fig. 2).

2. While monitoring motion at L₁ with the fingertips, the operator grasps the patient's bottom arm and induces trunk rotation (by pulling on the arm) until motion is palpated at L₁. Additionally, the thorax should be pulled anteriorly until flexion motion is also palpated at L₁. The patient's head is turned toward the ceiling.

3. The patient's upper leg (left leg in CCP) is positioned a) with the foot in the opposite popliteal fossa, or b) allowed to fall from the table.

4. The operator's pronated forearm (right arm in CCP) is placed just below the iliac crest with the fingertips still palpating L₁. The other arm stabilizes the patient's upper thorax.
5. While maintaining the same rotational relationship, the patient is rolled toward the operator until the operator has gained a mechanical advantage.

6. The patient is asked to take a deep breath and exhale. During exhalation, a high velocity-low amplitude (HVLA) thrust is made in an anteroinferior direction by the operator against the arm that is in contact with the patient's pelvis (right arm in CCP).

**NOTE:** The operator's body should deliver the thrust against the arm. The operator's arms are used to position and stabilize, **not** to thrust.

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**Frog Leg Technique - Fifth Lumbar at the Sacral Junction**

This technique is indicated for any patient with an extreme lumbar lordosis and is especially useful in the obstetrical patient as the final touch at the end of the treatment, to drop the lumbar spine and improve respiration. It is also very useful in the patient with spondylolisthesis and can be modified for an L₄₋₅ spondylolisthesis by changing the hand position.

**Purpose:** To drop the wedge-shaped body of the fifth lumbar vertebra posteriorly on the base of the sacrum.

1. The patient is supine with both legs flexed, knees apart and the soles of the feet put together.

2. The operator stands at the side of the table, moves one arm between the legs to place the hand under the sacrum and cup it (Fig. 3).

![Figure 3](image)

The fingers spread to accommodate the spinous process of the fifth lumbar vertebra. The tips of the fingers contact and grasp the junction of the fifth lumbar vertebra and the base of the sacrum.

a. This hand will give traction in a caudad direction throughout the technique to move the sacral base posteriorly and the apex anteriorly.

b. The operator's other hand will keep the knees apart using a very slight touch throughout this procedure (Fig. 4).
3. The patient is asked to take a deep breath and hold it, while at the same time they steadily slide the feet downward toward the end of the table (Fig. 5).

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3. Positioning of the lower extremity helps to gap the sacroiliac joint. The operator grasps the sacral base and pulls posterior to pull the nutated sacrum into a more counternutated/neutral position.
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**Sacroiliac Articulation Technique**

This technique is used as both a diagnostic test and a treatment for subtle motion restrictions between the sacrum and the ilium. It is a general mobilization technique which also helps to free up the respiratory axis of the sacrum.

1. Have the patient assume the left lateral Sims' position.
2. Stand behind the patient and place one hand on the sacrum at S2.

3. With the patient's lower leg slightly flexed, grasp the upper leg just below the knee and flex the knee and hip.
4. Flex the hip up to the level of S2 while palpating for motion at S2. Abduct the thigh until you feel a slight resistance.
5. Ask the patient to take in a deep breath and hold it. While maintaining abduction, extend the leg allowing it to fall off the table at the end of extension. Take up slack throughout the entire maneuver. Remember to tell the patient to breathe again.
6. This technique may produce an audible or palpable articulation.

7. The same procedure is repeated with the patient lying on the other side to treat the opposite sacroiliac articulation.

Ischial Tuberosity Spread

This is a urogenital/pelvic diaphragm release by way of spreading the ischial tuberosities.

1. The patient is placed in the prone position.

2. The patient's knees are flexed and placed together, the thighs internally rotated (so that the feet and legs are directed laterally).

3. Using both hands, the physician places the pads of his thumbs medial to the patient's ischial tuberosities and applies firm lateral pressure.

4. The patient is instructed to cough, unless contraindicated, and, while doing so, pressure is maintained to spread the tuberosities laterally.

**NOTE:** This procedure separates the sacroiliac joints and allows for better motion of the sacrum between the innominates. It also helps the sacrum to "seat" itself better between the innominates. At times this technique may reduce sacral torsion and flexion dysfunctions.

This procedure may improve the function of the urogenital and pelvic diaphragms. It may also be utilized as adjunct treatment in the osteopathic management of cystitis, proctitis, hemorrhoids, prostatitis, constipation, and sacroiliac dysfunction.
Thoracic Outlet Soft Tissue

When there is a structural problem involving the pelvis and lumbar area, the paravertebral muscles and the quadratus lumborum (considered a continuation of the diaphragm) may contribute to the stress and pathophysiology causing congestion of the venous blood and lymphatic fluids.

This area can be evaluated when the patient is prone. Using both hands, the physician gently contacts the patient posteriorly above the crest of the ilia comparing the two sides for tension. The side under tension frequently is involved with concomitant lesions of the 11th and 12th ribs on the same side.

This technique is done with the patient lying prone.

1. The physician stands opposite the side to be treated, grasps the anterior portion of the pelvis firmly with one hand, and places the other hand posteriorly over the 11th and 12th ribs.

2. The pelvis is rolled toward the physician and, on the down roll, the physician's other hand applies pressure over the 11th and 12th ribs with an alternating rhythmic "make or break" tension release maneuver.

3. Gentle kneading and stretching to the upper lumbar area may be performed from the 11th rib to the 5th lumbar, using the hand on the anterior portion of the pelvis as the counter force.

4. After the tension of the tissues has been released, a sudden short impulse may be applied to the 11th and 12th ribs in an anterolateral direction. A slight articulatory sound may be audible at this time.

The physician should keep in mind that the objective here is to relax the paravertebral and quadratus lumborum muscle contractures and free up motion of the 11th and 12th ribs. Reading the tissues will signal the completion of treatment and not the articulation of ribs.
Method 2:

1. The patient is supine with the knees flexed and the feet flat on the table.

2. The operator stands at the side of the patient, opposite the involved area.

3. The operator grasps the patient's knees with one hand and, with the other hand, reaches across and under the patient to contact the contracted paraspinal muscles and quadratus lumborum.

4. The operator lifts and takes up the slack in these muscles while pushing the patient's knees away.

5. The operator then relaxes the hand on the muscle and brings the knees back to their original position.

6. This rocking type treatment is repeated until the muscles are relaxed.

7. The operator then places his/her hand on the 11th and 12th ribs, takes up the slack in the ribs, as described above, and asks the patient to cough. The intrinsic force of the cough along with the traction on the ribs by the operator may correct the motion restriction of these ribs.

Method 3:  
This technique may also be accomplished with the patient in a sidelying position.

Lower Thoracic Lymphatic Pump: Diaphragm Doming

1. The physician stands at the side of the supine patient, facing the patient.

2. The physician's hands contact the patient's lower lateral rib cage.

3. As the patient exhales, the physician's hands augment the medial motion of the lower ribs.

4. The patient is instructed to inhale. As the patient inhales, the physician resists the lateral movement of the lower rib cage.
5. As the patient reaches the height of inhalation, the physician's hands are suddenly removed from the rib cage, causing an in rush of air.

6. The technique may be repeated 2-3 times.

There are some situations which may preclude the use of vigorous thoracic pump techniques, e.g., advanced osteoporosis, presence of external ventilatory devices, recent chest surgery or trauma, etc. Pedal lymphatic pump technique may be preferable in these situations where enhanced movement of lymph is desired.