Osteopathic Approach to the Patient with Fibromyalgia

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The Osteopathic approach to the patient with fibromyalgia applies the five models of osteopathic care to offer a patient centered, health (functional) oriented management plan that includes osteopathic manipulative treatment. After a thorough history and physical exam, the diagnosis of fibromyalgia is made with supportive evidence of widespread pain in several body regions, bilaterally, including upper and lower extremities and paraspinal soft tissues that has been present for at least 3 months, and is accompanied by fatigue, non-restorative sleep and cognitive impairments, possibly including depression as well. The pathophysiology is due to central nervous system sensitization as well as peripheral nervous system sensitization. The goals of treatment are to restore and improve the essential coordinated body functions shown in the diagram above: posture and motion, respiration-circulation and lymphatic drainage, metabolic efficiency, neurological balance and optimize behavioral function and activities. Doing so will enable the patient to reach his or her optimal health potential and be better able to respond effectively to environmental stressors. Osteopathic manipulative treatment (OMT) is helpful in improving all of these body functions since they each rely upon the musculoskeletal system for their activities. Improving musculoskeletal system functions improves motion and concomitantly improves the other body functions as well.

This OMT lab will focus on some basic OMT procedures that have clinically proven to be beneficial for patients with central and peripheral sensitization. They can be considered as “afferent reduction” techniques, reducing the allostatic load or burden of somatic dysfunction,
decreasing nociceptive input into the already sensitized nervous system, and allowing the nervous system to rest and recover its normal functions. The OMT procedures include:

1. Seated lumbosacral functional technique
2. Sidelying rib functional technique
3. Seated upper thoracic spine muscle energy technique
4. Seated or supine diaphragm myofascial release technique
5. Supine cervical functional and strain/counterstrain techniques
6. Supine TMJ muscle energy techniques

Functional (Indirect) Technique for Lumbosacral Somatic Dysfunction (739.3, 739.4)

Treatment:

1. The patient is seated.
2. The practitioner sits in front of the knees of the seated patient.
3. The practitioner gently grasps the patient’s distal femurs bilaterally, cupping the patient’s knees with his/her palms.
4. The practitioner introduces a compressive force towards the patient’s hip joints one side at a time, noting the relative tightness or looseness of the lumbar-pelvic tissues. (Fig. 5.71A, 5.71B)

Figure 5.71A. Seated functional technique for the lumbosacral spine: the practitioner compresses the left hip
6. The practitioner determines which side is more compliant to the compressive force. The patient’s right side in this series of pictures is more compliant.

7. The practitioner maintains compression towards the compliant right hip and asks the patient to flex at the waist while retesting compression towards the right hip joint. (Fig. 5.71C)

8. To maintain the balance of forces, the practitioner pulls the patient’s left proximal tibia towards him/her (use the four finger pad contact on the posterior aspect of the tibia).

9. To compare, the practitioner then asks the patient to extend backwards and again retests compression towards the compliant hip. (Fig. 5.71D)

10. The practitioner determines whether flexion or extension made the hip more compliant or loose and have the patient maintain that posture. In the example depicted in the figures, the patient’s right hip is more compliant when the patient flexes than extends. So, she is asked to maintain a slightly flexed spine while testing the other spinal motions one at a time.

11. Repeat the same procedure for sidebending with the patient maintaining the compliant posture (flexed in this case). (Fig. 5.71E, 5.71F)
12. Determine to which direction of sidebending does the compressive force towards the right hip joint have less resistance. In this case, sidebending left enabled more compliance in the right hip.

13. While maintaining the positions of ease in slight flexion and slight left sidebending, have the patient rotate left then right and determine to which direction facilitates ease of the hip compression. (Figs. 5.71G, 5.71H). In this case, right rotation enabled more compliance.

14. Finally, determine in which phase of respiration there is more ease of hip compression: inhalation or exhalation.

15. Stack, or combine, all the spinal motions of ease at one time, adding at the very end the phase of respiration that facilitates compliance of passive hip compression. In this case, the patient’s right hip is most compliant to compression when she flexes, sidebends left, rotates right and inhales (Fig.5.71I). The patient need not use full range of motions. Just initiating the motion in the directions that facilitate ease or compliance is sufficient.

16. When the patient finishes the phase of respiration that facilitates ease and compliance of hip compression (inhalation, in this case), let the patient return to resting sitting position and retest both left and right hip compression. (Fig. 5.71J).

17. There should be ease in either direction. If not, the procedure can be repeated without harm.
Seated lumbosacral functional technique

Figure 5.71C. The patient flexes her spine while the practitioner compresses the right hip (ease)

Figure 5.71D. The patient extends her spine while the practitioner compresses the right hip (binds)

Figure 5.71E. The patient is slightly flexed and sidebends left while the practitioner compresses the right hip (ease)
Figure 5.71F. The patient is slightly flexed and sidebends right while the practitioner compresses the right hip (binds)

Figure 5.71G. The patient is slightly flexed, slightly sidebent left and rotates left while the practitioner compresses the right hip (binds with rotation left)

Figure 5.71H. The patient is slightly flexed, slightly sidebent left and rotates right while the practitioner compresses the right hip (ease)
Figure 5.71I. The patient slightly flexes, slightly sidebends left, rotates right, and inhales while the practitioner compresses the right hip (stacking all motions that increase compliance of the right hip when compressed by practitioner).

Figure 5.71J. The practitioner rechecks the right and left hip with the compliance test. Both should now be equally compliant.

Costal Cage Functional Techniques for Costal Cage Somatic Dysfunctions (739.8)

EXAMPLE: Right 7th rib somatic dysfunction (Fig. 9.51)

1. The patient is sidelying in the left lateral recumbent position.

2. The practitioner stands in front of the patient.

Hand position for monitoring the soft tissues overlying the dysfunctional right rib angle during functional technique.

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3. The practitioner grasps the patient’s elbow with his/her right hand and monitors the soft tissues overlying the rib angle of the dysfunctional rib with his/her left finger pads.

4. The practitioner passively moves the patient’s shoulder through its normal motions, noting which directions decrease the tissue tension palpated around the angle of the affected rib: flexion, extension, abduction, adduction, external rotation, internal rotation, and compression and distraction of the glenohumeral joint.

5. The practitioner stacks the motion directions that elicited a sense of ease or compliance in the soft tissue overlying the affected rib and asks the patient to breathe in and out slowly and deeply.

6. While the patient is breathing in the phase of respiration that further elicits relaxation in the monitored soft tissues, the practitioner fine tunes the shoulder motions in the directions of ease to maximize the relaxation of the monitored tissues.

7. At the end of the single breath, the practitioner reassesses the response of the soft tissues overlying the affected rib angle to passive shoulder motions.

**Diaphragm Myofascial Release Technique for Costal Cage Somatic Dysfunction (739.8)**

**Seated Thoracic Diaphragm MFR Technique**

1. The patient is seated.

2. The practitioner stands behind the patient.

3. The practitioner places his/her hands around the thoracic cage under the patient’s arms, with the fingertips or the 5th finger-edge and hypothenar eminence underneath the patient’s costal margins.

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4. The practitioner passively rotates the diaphragm to the left and right until diaphragm tension is felt under the fingers. The practitioner notes whether there is symmetry of motion or whether there is greater ease of motion in one direction or the other.

5. Using the same hand position the practitioner rotates the diaphragm in the direction of ease as far as comfortably possible.

6. This position is maintained until increased compliance and relaxation of the diaphragm is noted, and the diaphragm is moving freely in a rhythmic, symmetrical motion.

7. The practitioner then allows the diaphragm and associated myofascial tissues to passively return to neutral.

8. The practitioner then rechecks the motion and compliance of the diaphragm.
Supine Thoracic Diaphragm MFR Technique

1. The patient is supine.

2. The practitioner stands at the patient’s side.

3. The practitioner places his/her hands and fingers on the outer aspect of the inferior border of the lower ribs with thumbs pointed toward each other medially and positioned directly inferior to the xiphoid process of the sternum. (Fig. 9.36)

4. The practitioner passively assesses the lower costal cage for compliance vs. resistance to clockwise and counterclockwise motion in the coronal as well as vertical planes. (Fig. 9.37)

9.36 Supine diaphragm myofascial assessment; hand position shown on skeleton model.

9.37A Supine diaphragm myofascial assessment; clockwise vs. counterclockwise in the coronal plane.

9.37B Supine diaphragm myofascial release. Find the direction of ease, which is counterclockwise in this picture.
5. The practitioner finds the position of maximal compliance and holds this position while the patient exhales and holds his/her breath out as long as possible. (Fig. 9.37B)

6. The practitioner follows the unwinding of the lower costal cage as the diaphragm tension releases. (Fig. 9.37C)

7. Just before the patient has to inhale, the practitioner will feel a release of tension and increase in ease of motion.

8. The practitioner reassesses compliance of the lower costal cage to active (inhalation) and passive motion. (Fig. 9.37D)

Upper Thoracic Muscle Energy Treatment for Thoracic Somatic Dysfunction (739.2)

Type I (Group) somatic dysfunctions

Diagnosis:  T2-4 NS\textsubscript{R}R\textsubscript{L}

Restriction:  T2-4 NS\textsubscript{L}R\textsubscript{R}

1. The patient is seated on a chair or treatment table.

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2. The practitioner stands behind the seated patient on the side of the rotated, or most posterior, transverse process (to the left in this example).

3. The practitioner’s operating hand (left) is placed on the patient’s head.

The practitioner monitors the spinous processes of the upper thoracic vertebrae and passively flexes the patient’s head until T3 begins to move, but not T4. This localizes the forces now at T3. (Fig. 6.45A)

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Fig. 6.45A Flex the patient's head until T3 is engaged in order to focus forces at T3.

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Fig. 6.45B Position for seated muscle energy treatment of T2-4 NSrR1. Monitor the posterior transverse process at T3 while engaging the restrictive motion barriers of sidebending left and rotation right with the other hand through contact with the patient's head.
1. The practitioner’s right hand monitors the left transverse process of T3 (the central and most rotated vertebra of the group) to localize segmental motion.

2. The practitioner positions the patient’s head to engage the motion barrier in all three planes (neutral, rotation to the right and sidebending to the left at T3). (Fig. 6.45B)

3. The patient is then instructed to attempt to return to midline against the practitioner’s unyielding counterforce.

4. This isometric contraction is held for 3-5 seconds.

5. The patient is then instructed to fully relax this effort and neck muscles for 5 seconds.

6. The practitioner engages the new restrictive barrier, further rotation to the right and sidebending to the left at T3.

7. Steps 4-7 are repeated 3-5 times and a final stretch is given into the restrictive barrier (rotation to the right and sidebending to the left at T3) following the final repetition.

8. Retest.

Type II Dysfunctions (Fig. 6.46)

Diagnosis: T3 ER_L S_L

Restriction: T3 FR_R S_R

1. The patient is seated on a chair or treatment table.

2. The practitioner stands behind the seated patient on the side of the most posterior transverse process (to the left in this example).

3. The practitioner’s operating hand (left) is placed on the patient’s head.

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4. The practitioner’s right hand monitors the left transverse process of T3 to localize segmental motion.

5. The practitioner positions the patient’s head to engage the barrier in all three planes (flexion, sidebending to the right and rotation to the right at T3).

![Fig. 6.46 Position for seated muscle energy treatment for T3 ER₁S₁.](image)

6. The patient is then instructed to attempt to return to midline against the practitioner’s unyielding counterforce.

7. This isometric contraction is held for 3-5 seconds.

8. The patient is then instructed to fully relax this effort and neck muscles for 5 seconds.

9. The practitioner engages the new restrictive barrier: further flexion, sidebending to the right and rotation to the right at T3.

10. Steps 4-7 are repeated 3-5 times and a final stretch is given into the restrictive barrier (flexion, sidebending to the right and rotation to the right at T3) following the final repetition.

11. Retest.

**Functional Treatment for Cervical Somatic Dysfunctions (739.1)**

Diagnosis: Any cervical vertebral somatic dysfunction

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Example: C5 has evidence of somatic dysfunction (A.R.T.). Recall that it does not matter whether it is flexed or extended since vertebral positioning and motion are not examined or treated in functional technique. What is examined and treated is the aberrant spinal reflex activity at that level that is hypersensitive and reactive to passive body movements performed in other body regions.

1. The patient is in the supine position on a plinth or treatment table.
2. The practitioner sits at the head of the table.
3. The practitioner uses the index and thumb finger pads of one hand to monitor the tense tissues overlying the deep segmental paraspinal soft tissues (i.e., rotatores, multifidi) on either side of C5 (Figs. 6.60A-C) while inducing slight passive motions via the patient’s head, in one direction at a time, e.g., flexion, extension, sidebending left then right, rotation left then right, mostly moving the OA and AA joints.
4. The practitioner may find, for example, that the paraspinal soft tissues around C5 tighten, or bind, with passive head motion from midline towards extension, sidebending left, rotation left, translation right and posteriorly, axial compression, and when the patient inhales. (Fig. 6.61)
6. In this example, the paraspinal soft tissues around C5 will loosen, or ease with passive head motion from midline towards flexion, sidebending right, rotation left, translation left and anteriorly, axial decompression, and when the patient exhales.
7. Therefore, to treat C5 using functional technique, the practitioner passively moves the patient’s head from the resting midline position towards flexion, sidebending right, rotation right, translation left and anteriorly, and applies axial decompression, in essence
stacking the directions of motion that induce ease or compliance in the paraspinal soft tissues around C5. (Fig. 6.62)

5. Finally, the practitioner instructs the patient to maintain a prolonged natural exhalation (not forced) while fine tuning the exact directions of motion that produce the most ease of the soft tissues being monitored around C5.

6. Retest for any presence of ease vs. bind at C5 upon passive head movements.

Functional technique for OA somatic dysfunction with patient supine and head off table in practitioner's hands. The practitioner monitors the patient's suboccipital tissues with his finger pads while directing passive motion with his foot, leg and arm motions. Notice his elbows are resting on his knees.

7.10

The practitioner induces passive flexion (notice practitioner has elbows on his knees and is raising his heels) while monitoring the tissue response around the patient's suboccipital region.

7.11A

The practitioner induces passive extension (notice practitioner lowering forearms) while monitoring the tissue response around the patient's suboccipital region.

7.11B

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The practitioner induces passive sidebending right at the patient's OA by rotating his hip to the right which moves his right knee more anterior. His fingertips are monitoring the tissue response around the patient's suboccipital region.

7.11C

The practitioner induces passive sidebending left by rotating his hips to the left while monitoring the tissue response around the patient's suboccipital region.

7.11D

The practitioner induces passive rotation left (practitioner can raise right heel and/or lower left forearm) while monitoring the tissue response around the patient's suboccipital region. Passive rotation right is accomplished by raising the left heel and/or lowering right forearm.

7.11E

The practitioner induces passive axial compression and distraction of the OA while assessing the response of the patient's suboccipital region with his finger pads.

7.11F

Counterstrain Treatment for Cervical Somatic Dysfunctions (739.1)

Lateral Cervical 1 (LC1) (Figs. 6.63 A and B)

Location: At the tip of the transverse process of C1, found by pressing medially in the area between mastoid process and mandible, just below the occiput.

Treatment position:

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1. The patient is supine.

2. The practitioner is seated at the head of the table.

3. The practitioner sidebends the patient’s head toward the tenderpoint.

4. This position is held for 90 seconds.

5. The patient is passively, slowly, moved back to resting position.

6. The practitioner retests the tenderness of the point.

*Counterstrain tender points AC1 and LC1 are in similar locations. Both are between the mastoid process and mandible bilaterally. To evaluate AC1, press anteriorly towards the ascending ramus of the mandible; for LC1, press medially.

Fig. 6.63A. Location of counterstrain tenderpoint LC1.

Fig. 6.63B Counterstrain treatment position for LC1.

**Anterior Cervical 1 (AC1) (Figs. 6.64 A and B)**

Location: On the posterior edge of the ascending ramus of the mandible at the level of the ear lobe.

Treatment position:

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1. The patient is supine.

2. The practitioner is seated at the head of the table.

3. The practitioner rotates the patient’s head away from the tenderpoint, up to 90°.

4. This position is held for 90 seconds.

5. The patient is passively, slowly, moved back to resting position.

6. The practitioner retests the tenderness of the point.

Muscle Energy Techniques for Cranial Somatic Dysfunction (739.0)

Muscle Energy Technique for Restricted TMJ Opening (Fig. 8.11).

1. The patient is seated.

2. The practitioner stands behind the patient.

3. The practitioner stabilizes the patient’s head with one hand to prevent rotation or sidebending of the patient’s head.

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4. The practitioner then places the index or middle finger of his/her other hand on the anterior surface of the patient’s mandible and opens the patient’s mouth until the motion barrier is engaged.

5. The patient closes his/her jaw against the practitioner’s isometric resistance.

6. This effort is maintained for 3-5 seconds, and then the patient fully relaxes the jaw.

7. The practitioner then opens the patient’s mouth further to engage the next restrictive motion barrier.

8. Steps 3-5 are repeated 3-5 times followed by a final stretch of the mandible after the last repetition.

9. Retest.

**Muscle Energy Technique for Lateral Deviation of the Mandible** (Fig. 8.12).

Example: mandible deviates to the right upon opening mouth

1. The patient is seated.

2. The practitioner stands behind the patient.

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3. The practitioner places the palm of his/her left hand on the top of the patient’s head in order to prevent rotational or sidebending movement.

4. The practitioner places the finger pads of his/her right hand over the right lower portion of the patient’s mandible and gently moves the mandible to the left to engage the restrictive motion barrier.

5. The patient is instructed to move his/her mandible to the right against the practitioner’s isometric resistance.

6. This effort is maintained for 3-5 seconds.

7. The patient fully relaxes his/her muscular effort.

8. The practitioner then moves the patient’s mandible further toward the left to engage the next restrictive motion barrier.

9. Steps 3-5 are repeated 3-5 times followed by a final stretch of the mandible after the last repetition.

10. Retest.

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References